

# Industry Wage Survey: Basic Iron and Steel, October 1988

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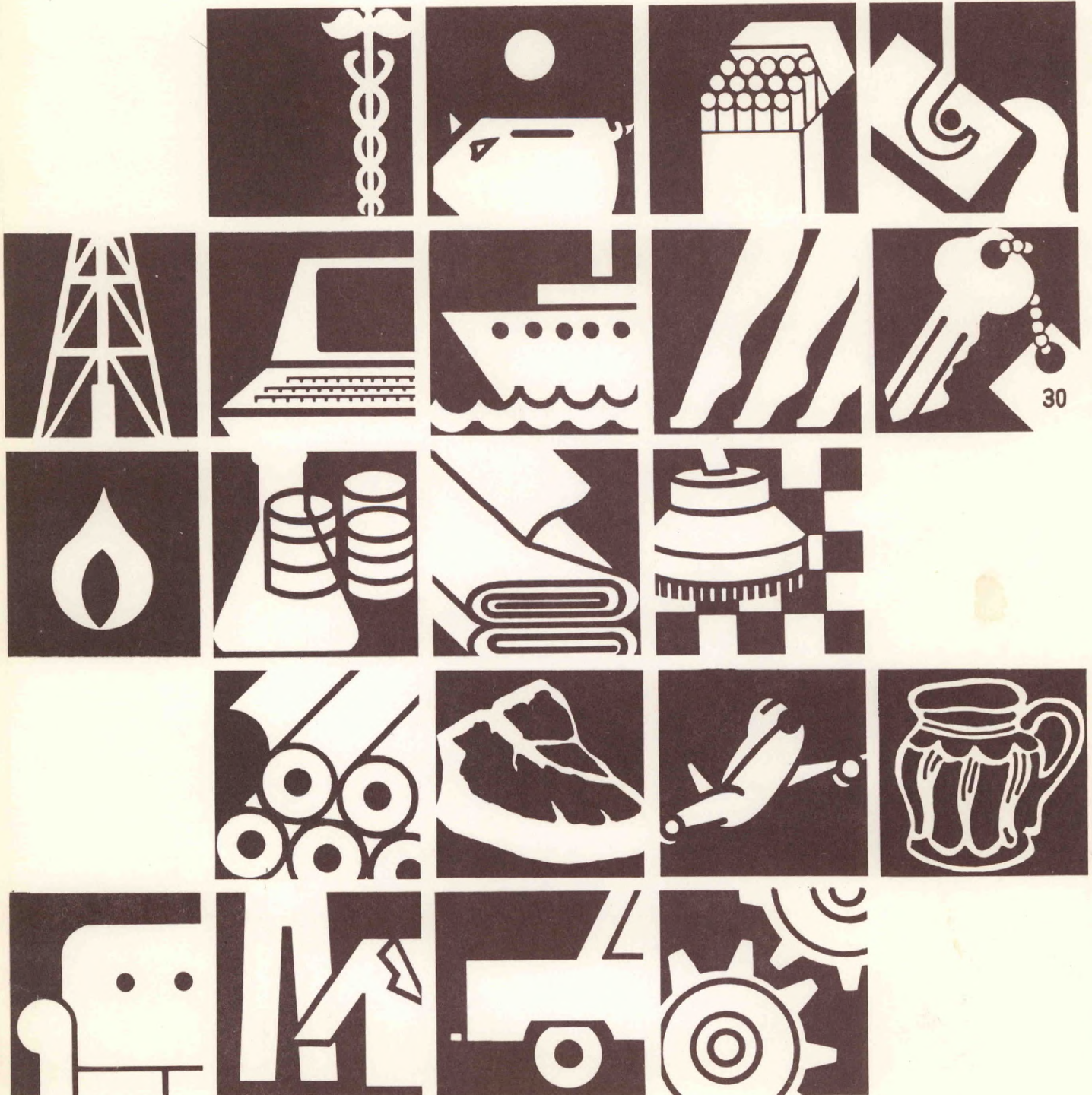


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# Industry Wage Survey: Basic Iron and Steel, October 1988



U.S. Department of Labor  
Elizabeth Dole, Secretary

Bureau of Labor Statistics  
Janet L. Norwood, Commissioner  
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# Preface

This bulletin summarizes the results of an occupational wage survey in basic iron and steel mills conducted by the Bureau of Labor Statistics in October 1988. A similar survey was conducted in August 1983.

A summary report providing national and regional data was issued in June 1989. Copies of this report are available from the Bureau or any of its regional offices.

The study was conducted in the Bureau's Office of Compensation and Working Conditions. Denis A. Gusty of the Division of Occupational Pay and Employee Benefit Levels analyzed the survey data and prepared this bulletin. The

Bureau's field representatives obtained the data through personal visits to a probability-based sample of establishments within the scope of the survey. Fieldwork was directed by the Bureau's Assistant Regional Commissioners for Operations.

Other industry wage survey reports are listed at the end of this bulletin along with information on how to obtain them.

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# Industry Wage Survey: Basic Iron and Steel, October 1988

## Earnings and benefits

Straight-time earnings of production and related workers in the Nation's basic iron and steel mills averaged \$12.11 an hour in October 1988, according to a Bureau of Labor Statistics industry wage survey.<sup>1</sup> In the Midwest, where a little over half of the 178,889 production workers were employed, average earnings were \$12.39 an hour. Among the other regions, averages were \$12.08 in the Northeast, \$11.57 in the West, and \$11.55 in the South (table 1).

The average hourly pay level in October 1988 was 2 percent higher than the \$11.87 reported in a similar survey conducted in August 1983.<sup>2</sup> This increase was less than those in similar industries; for example, wages and salaries for production workers in all durable goods manufacturing industries rose 20 percent between June 1983 and December 1988, according to the Bureau's Employment Cost Index. Employment in the basic iron and steel industry fell about 3 percent, to 178,889 production workers in October 1988 from 184,078 in August 1983.

The small increase in production worker pay and decreasing employment levels reflect, in part, the industry's reaction to an overcapacity in steel markets worldwide and subsequent widespread price cutting. In response to financial losses, the domestic steel industry laid off workers and closed plants, reducing employment by more than one-fourth between 1982 and 1988.

Collective bargaining agreements negotiated in 1986 and 1987 between the major steel producers and the United Steelworkers of America (USWA—AFL-CIO)—the predominant union in the industry—included a variety of provisions designed to cut costs and improve efficiency. These rounds of negotiations were the first since disbandment of the major steel producers' pattern-setting bargaining association—the Coordinating Committee Steel Companies. In the past, negotiations provided uniform contract terms that nonmember companies also typically followed. However, by the mid-1980's, the steel producers believed that the varying cost and production problems besetting individual com-

panies could be solved best by one-on-one negotiations with the USWA.<sup>3</sup>

The individual agreements signed in 1986 and 1987 generally provided for cuts in employee wages and benefits that were partly or completely offset by payouts from profit-sharing and stock-ownership plans; development of plans for distributing cash to employees based on improvements in output, efficiency, quality, and nonlabor costs attributable to employee efforts or initiatives; suspension of automatic cost-of-living pay adjustment provisions; and restrictions on overtime, plant closings, and employee layoffs.<sup>4</sup> In addition, the steel industry moved away from a common job evaluation and pay system which provided a standard minimum hourly rate and cents-per-hour pay increments.<sup>5</sup> In October 1988, just over one-fourth of the production workers were in mills using this type of pay system compared to nearly one-half in August 1983. In 1988, an additional two-fifths of the production workers were in mills using common job evaluation systems, but not using the standard pay structure.

The industry rebounded in 1988, as both steel consumption and shipments of domestic steel rose to their highest levels since 1981. Furthermore, the Nation's steelmakers had emerged as one of the lower cost producers in the developed world. Spurred by the ongoing restructuring and modernization program, and the negotiation of more favorable labor contracts, the recovery also was aided by the depreciation of the dollar against currencies of other steel producing countries.<sup>6</sup>

Nationwide, pay was higher in mills that were larger in size, within larger companies (10,000 workers or more) and operating under labor-management agreements (table 1). This pay pattern held among the regions with comparable data,

<sup>3</sup> *Monthly Labor Review*, January 1988, pp. 28-29.

<sup>4</sup> For an analysis of the collective bargaining issues, plus an account of the terms of the final 1986 and 1987 agreements, see the following issues of the BLS periodical *Current Wage Developments*: May 1986, pp. 1-2; July 1986, p. 1; October 1986, p. 2; and March 1987, pp. 1-2.

<sup>5</sup> Under this system, all occupational classifications are assigned point values based on the amount of skill, responsibility, and effort required, and the working conditions of the job. These points are translated into labor grades ranging from 1 to 34. At the time of the survey, the standard minimum hourly rate for job classes 1 and 2 was \$9.876, and the standard cents-per-hour increment between classes (labor grades) 3 through 34 was 13.5 cents.

<sup>6</sup> More information on employment and productivity in the steel industry is in *U.S. Industrial Outlook, 1989*, U.S. Department of Commerce, pp.17-1 to 17-5.

except in the Northeast, where nonunion mills held a 9-percent pay advantage over unionized mills. Pay comparisons by type of area also were higher in mills located in nonmetropolitan areas; virtually all of these workers were located in the Northeast and South. Seven-tenths of the production workers were covered under incentive pay systems. These workers averaged \$12.70 an hour, or 18 percent more than the \$10.74 average of their time-rated worker counterparts (table 2).

Sixty-five occupations, accounting for one-third of the production work force, were selected to represent the wage structure and manufacturing activities in the industry. These occupational classifications were based on job descriptions used under the common job evaluation system. For purposes of this survey, these jobs were divided into two occupational groups. The first group, limited to occupations in selected mill departments, consisted mainly of production jobs. The second group included all occupations regardless of their assigned department, and consisted mostly of maintenance and other indirect labor categories.

Pay levels among the first group of workers ranged from \$10.49 for wire drawers, numerically the largest occupation studied, to \$17.63 for blooming mill rollers (table 3). Other numerically important occupations included first-helpers in the electric furnace department (averaging \$13.78), heaters in coke works and byproducts (\$12.24), and cut-off machine operators in tube finishing (\$10.78).

Among the second group of workers, pay levels ranged from \$9.10 for millwright helpers to \$14.90 for systems repairmen. Millwrights, the most populous occupation studied, averaged \$12.58 an hour. Other numerically important jobs included mechanical and hydraulic repairmen (averaging \$13.62), motor inspectors (\$12.68), and laborers (\$9.31).

For those jobs allowing comparison, incentive workers, who accounted for a majority in all but six occupations, averaged between 2 and 44 percent more than their time-rated counterparts in nearly four-fifths of these jobs. The pay advantage for time-rated workers averaged between 2 and 9 percent (table 4).

All of the production workers were in mills that provided paid holidays and paid vacations. The number of paid holidays varied widely, with most workers receiving between 6 and 10 paid holidays annually. Fewer paid holidays were reported in the South, where two-fifths of the workers received 5 days (table 8). The most common vacation provisions were: 1 week after 1 year of service; 2 weeks after 3 years; 3 weeks after 10 years; 4 weeks after 20 years; and 5 weeks or more after 25 years (table 9).

Life insurance was available to a majority of the production workers in the industry (table 10). Accidental death and dismemberment coverage was offered to three-fifths of the workers and long-term disability insurance to one-fifth. Short-term protection against loss of income—sick leave, sickness and accident insurance, or both—covered virtually all of the workers.

Nationwide, virtually all workers were covered by retirement plans, typically pension plans providing regular payments for the remainder of the retiree's life. In the South, however, nearly one-fifth of the workers were offered lump-sum retirement plans.

All of the production workers covered by the survey were offered basic health care coverage provided under hospitalization, surgical, and medical insurance or through membership in a health maintenance organization (HMO). The availability of HMO membership, however, differed greatly among the regions, ranging from one-sixth of the workers in the South to seven-eighths in the Midwest and West.

Dental care and alcohol and drug abuse treatment plans were available to over nine-tenths of the workers, about seven-tenths were offered vision care, and a little more than two-fifths, hearing care.

Nearly all of the workers participated in some form of basic health care coverage (table 11). In the Northeast and South, more than nine-tenths elected coverage under a traditional hospitalization, surgical, and medical insurance plan, while two-thirds of those in the West and one-fifth in the Midwest opted for membership in an HMO. Virtually all of the workers who were offered dental care, vision care, hearing care, and alcohol and drug abuse treatment plans also participated in the plans.

Funeral leave and jury-duty pay applied to almost all of the workers, and paid military leave covered seven-eighths (table 12). Technological severance pay, which is provided to workers permanently separated from their jobs due to technological change or plant closing, and supplemental unemployment benefits were each available to nearly three-fourths of the workers nationwide. Earnings protection plans, which protect the level of pay for workers assigned to lower paying jobs due to technological change, covered about one-half of the workers. Profit sharing or stock ownership plans, to which the employer contributes money beyond administrative costs, covered about two-fifths of the production workers.

At the time of the survey, a little over one-fifth of the workers were in mills with formal cost-of-living adjustment provisions that were still in effect or temporarily suspended; about one-tenth received automatic adjustments or lump-sum payments.

## Industry characteristics

The 270 mills within the scope of the survey employed 178,889 production workers in October 1988, with over nine-tenths of these employed in metropolitan areas.<sup>7</sup> Regionally, one-half of the workers were located in the Midwest, one-fourth in the Northeast, one-fifth in the South, and the remaining workers in the West.

<sup>7</sup> Metropolitan Statistical Areas as defined by the U.S. Office of Management and Budget through October 1984.

Mills employing 2,500 workers or more accounted for one-half of the production workers in October 1988, down from nearly three-fifths of the work force in August 1983. In contrast, smaller mills (fewer than 1,000 workers) increased their share to three-tenths of the workers in 1988, from one-fourth in 1983.

Much of the shift can be explained by the industry's restructuring and modernization program. Employment dropped as steelmakers shut down outmoded and inefficient facilities. A large proportion of capital expenditures went into modernizing existing facilities and adopting new steel producing technology, including the ongoing development of minimills. These specialized producers are usually smaller in size and more cost-effective than the traditional integrated steel mills. Through use of continuous casting machines, minimills are able to produce some steel products more efficiently than the conventional methods used in large integrated mills.

The continuous casting process solidifies molten steel as it passes through a casting machine, emerging as a slab, billet, or bloom. By contrast, the conventional method used in integrated mills involves pouring steel into ingot molds, stripping the molds from the ingots, placing the ingots into soaking pits to develop an even temperature, and then roll-

ing the steel into semifinished form. By eliminating the ingot and slab stage, minimills have cut energy costs and increased productivity.

At the time of the survey, work schedules of 40 hours a week predominated in establishments employing over nine-tenths of the production workers. In the South, slightly more than one-tenth of the workers were on a 42-hour workweek (table 5).

Almost all of the workers were in mills with provisions for late-shift work (table 6). A little more than one-fifth of the workers were employed on second shifts, and one-sixth on third shifts (table 7). While assigned to second and third shifts, workers almost always received cents-per-hour differentials over day-shift rates, most commonly between 20 and 30 cents for second shifts and between 30 and 45 cents for third shifts. About half the workers were assigned to rotating shifts. Under these arrangements, employees alternated between day, afternoon, and night shifts, typically changing shifts every 7 days.

Labor-management agreements covered nearly nine-tenths of the workers. The United Steelworkers of America represented slightly more than four-fifths of these workers. Slightly over half of the nonunion workers were located in the South.



**Table 1. Average hourly earnings: By selected characteristics**

(Number of production workers and average straight-time hourly earnings<sup>1</sup> in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Characteristic	United States		Northeast		South		Midwest		West	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
All production workers .....	178,889	\$12.11	43,384	\$12.08	35,630	\$11.55	91,575	\$12.39	8,300	\$11.57
Type of area:										
Metropolitan areas <sup>3</sup> .....	166,502	12.09	38,654	11.98	28,267	11.44	91,281	12.38	8,300	11.57
Nonmetropolitan areas .....	12,387	12.36	4,730	12.89	7,363	11.98	-	-	-	-
Size of establishment:										
100-999 employees .....	55,346	11.15	14,664	11.74	19,336	10.80	17,248	10.97	4,098	11.47
1,000-2,499 employees .....	33,838	11.92	-	-	-	-	17,692	12.11	4,202	11.66
2,500 employees or more .....	89,705	12.77	18,406	12.46	-	-	56,635	12.90	-	-
Size of company:										
100-9,999 steel industry employees .....	132,492	11.87	38,853	12.06	35,630	11.55	49,709	11.99	8,300	11.57
10,000 steel industry employees or more ..	46,397	12.80	4,531	12.25	-	-	41,866	12.86	-	-
Labor-management contract coverage:										
Establishments with--										
Majority of workers covered .....	159,794	12.23	39,067	11.98	25,824	11.91	88,325	12.47	6,578	11.66
None or minority of workers covered .....	19,095	11.11	4,317	13.04	9,806	10.61	3,250	10.00	1,722	11.22

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>3</sup> Metropolitan Statistical Areas as defined by the U.S. Office of

Management and Budget through October 1984.

NOTE: Dashes indicate that no data were reported or data did not meet publication criteria.

**Table 2. Earnings distribution: All production workers**

(Percent distribution of production workers in basic iron and steel mills by straight-time hourly earnings,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Hourly earnings	United States			Northeast			South			Midwest			West		
	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers
Number of workers .....	178,885	54,054	124,831	43,380	8,551	34,829	35,630	18,120	17,510	91,575	20,364	71,211	8,300	7,019	1,281
Average hourly earnings .....	\$12.11	\$10.74	\$12.70	\$12.08	\$11.01	\$12.35	\$11.55	\$9.79	\$13.38	\$12.39	\$11.16	\$12.74	\$11.57	\$11.66	\$11.05
Median .....	12.03	10.70	12.37	11.88	10.63	12.03	11.74	9.93	12.71	12.06	10.88	12.42	11.76	11.94	11.04
Middle 50 percent:															
First quartile .....	10.71	9.29	11.22	10.68	9.61	10.82	9.93	7.75	12.00	10.95	9.87	11.30	10.38	10.33	10.50
Third quartile .....	13.46	12.35	13.92	13.23	12.20	13.46	13.10	11.50	14.11	13.79	12.60	14.10	13.24	13.34	11.76
Total .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under \$6.00 .....	.8	2.4	( <sup>3</sup> )	-	-	-	2.5	4.8	-	.1	.2	( <sup>3</sup> )	4.8	5.6	-
\$6.00 and under \$6.25 .....	.2	.8	-	-	-	-	1.1	2.1	-	( <sup>3</sup> )	.1	-	.6	.7	-
\$6.25 and under \$6.50 .....	.2	.7	( <sup>3</sup> )	( <sup>3</sup> )	-	( <sup>3</sup> )	1.0	2.0	-	( <sup>3</sup> )	( <sup>3</sup> )	-	.2	.2	-
\$6.50 and under \$6.75 .....	.5	1.5	( <sup>3</sup> )	.1	.2	( <sup>3</sup> )	2.0	3.9	-	.1	.3	-	.4	.4	-
\$6.75 and under \$7.00 .....	.3	1.0	-	( <sup>3</sup> )	( <sup>3</sup> )	-	1.2	2.4	-	.1	.5	-	.2	.2	-
\$7.00 and under \$7.25 .....	.5	1.5	.1	( <sup>3</sup> )	.1	( <sup>3</sup> )	1.5	3.0	-	.4	.8	.3	.9	1.0	-
\$7.25 and under \$7.50 .....	.7	2.1	( <sup>3</sup> )	.2	.9	.1	2.1	4.2	-	.3	1.5	( <sup>3</sup> )	.2	.2	-
\$7.50 and under \$7.75 .....	.6	1.8	.1	.3	1.3	.1	1.2	2.3	-	.4	1.4	.1	1.6	1.9	-
\$7.75 and under \$8.00 .....	.4	1.3	( <sup>3</sup> )	.3	.8	.1	1.4	2.7	-	.1	.6	-	.2	.2	-
\$8.00 and under \$8.25 .....	.5	1.3	.1	.3	.3	.3	1.2	2.3	-	.2	1.0	-	1.0	1.2	-
\$8.25 and under \$8.50 .....	.6	1.8	.1	.4	1.2	.1	1.5	3.0	-	.4	1.3	.1	1.0	1.2	-
\$8.50 and under \$8.75 .....	.7	2.1	.1	.3	1.2	.1	1.3	2.7	-	.7	2.7	.1	.3	.3	.2
\$8.75 and under \$9.00 .....	1.0	2.9	.1	1.4	6.5	.2	1.3	2.5	-	.7	2.7	.1	.4	.4	.9
\$9.00 and under \$9.25 .....	.8	2.3	.2	.8	3.5	.1	1.0	2.0	-	.8	2.6	.2	.7	.5	2.1
\$9.25 and under \$9.50 .....	1.4	3.9	.3	1.7	7.8	.2	1.4	2.7	-	1.2	4.2	.3	1.7	1.4	3.5
\$9.50 and under \$9.75 .....	1.1	2.7	.4	1.1	4.2	.4	1.9	3.0	.7	.8	2.5	.3	1.3	.5	5.6
\$9.75 and under \$10.00 .....	2.5	5.4	1.2	2.6	3.9	2.2	2.7	5.0	.4	2.3	7.4	.9	2.5	2.7	1.6
\$10.00 and under \$10.25 .....	2.8	6.2	1.4	2.9	5.3	2.3	2.9	4.2	1.7	2.6	9.0	.7	4.6	4.0	8.0
\$10.25 and under \$10.50 .....	3.6	4.2	3.3	6.7	7.3	6.5	2.6	3.0	2.2	2.4	3.7	2.0	4.6	4.9	2.8
\$10.50 and under \$10.75 .....	6.2	5.1	6.6	9.0	6.7	9.6	3.2	4.8	1.5	6.2	5.6	6.3	3.9	2.4	12.2
\$10.75 and under \$11.00 .....	6.2	5.1	6.7	7.3	6.2	7.6	3.5	3.3	3.7	6.9	7.3	6.9	3.3	1.9	11.0
\$11.00 and under \$11.25 .....	5.6	4.5	6.0	5.7	3.2	6.3	4.7	6.2	3.3	5.7	3.8	6.3	6.6	4.2	19.9
\$11.25 and under \$11.50 .....	3.8	3.4	4.0	3.9	5.4	3.5	3.1	2.4	3.8	4.1	3.7	4.2	3.0	2.4	6.8
\$11.50 and under \$11.75 .....	3.4	3.8	3.3	3.0	3.5	2.9	3.7	3.6	3.7	3.3	3.0	3.4	5.6	6.6	.2
\$11.75 and under \$12.00 .....	5.2	3.2	6.0	4.0	3.2	4.2	2.6	1.3	3.9	6.7	3.8	7.5	6.1	6.1	6.1
\$12.00 and under \$12.25 .....	5.3	3.1	6.3	5.1	2.5	5.7	2.9	2.8	3.0	6.2	2.4	7.3	6.7	6.7	7.3
\$12.25 and under \$12.50 .....	5.8	3.1	6.9	7.8	4.5	8.6	7.2	2.8	11.7	4.4	2.1	5.1	4.7	5.4	.7
\$12.50 and under \$12.75 .....	4.3	3.4	4.7	2.7	3.1	2.7	7.1	3.0	11.3	4.1	3.9	4.1	3.3	3.2	4.2
\$12.75 and under \$13.00 .....	4.1	3.0	4.5	4.2	2.7	4.5	3.6	1.3	6.0	4.3	4.5	4.2	3.2	3.2	3.3
\$13.00 and under \$13.25 .....	3.3	2.0	3.8	3.4	2.2	3.7	3.2	1.5	5.0	3.4	2.4	3.7	1.5	1.8	.2
\$13.25 and under \$13.50 .....	3.2	2.7	3.4	3.1	2.1	3.3	3.5	3.5	3.6	3.1	1.6	3.5	3.8	4.5	.2
\$13.50 and under \$13.75 .....	2.6	1.3	3.2	2.4	1.1	2.7	2.6	.8	4.5	2.7	1.1	3.2	3.4	3.6	2.6
\$13.75 and under \$14.00 .....	2.3	.9	2.8	2.1	.7	2.4	2.4	.8	4.1	2.3	.6	2.8	2.1	2.5	-

See footnotes at end of table.

**Table 2. Earnings distribution: All production workers—Continued**

(Percent distribution of production workers in basic iron and steel mills by straight-time hourly earnings,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Hourly earnings	United States			Northeast			South			Midwest			West		
	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers	Total	Time-workers	Incentive workers
\$14.00 and under \$14.25 .....	2.8	1.3	3.5	2.9	1.4	3.3	2.5	2.1	2.9	3.0	0.5	3.7	1.2	1.4	0.5
\$14.25 and under \$14.50 .....	2.7	.9	3.4	1.8	.4	2.2	1.3	.5	2.1	3.6	.8	4.4	2.7	3.1	-
\$14.50 and under \$14.75 .....	3.4	.6	4.6	2.8	1.0	3.2	.9	.2	1.7	4.9	.8	6.1	.5	.6	-
\$14.75 and under \$15.00 .....	2.1	1.2	2.4	1.8	1.0	2.0	1.0	.3	1.6	2.5	1.0	2.9	3.6	4.3	-
\$15.00 and under \$15.25 .....	1.3	.7	1.5	1.2	.3	1.4	.9	.5	1.3	1.4	.4	1.7	2.0	2.4	-
\$15.25 and under \$15.50 .....	.9	.4	1.2	.9	.1	1.1	.4	.3	.5	1.1	.4	1.3	.9	1.0	-
\$15.50 and under \$15.75 .....	1.5	2.2	1.2	1.7	4.1	1.1	.8	-	1.6	1.8	3.6	1.2	1.4	1.6	-
\$15.75 and under \$16.00 .....	.9	1.2	.8	.7	-	.9	.8	.1	1.5	.9	2.0	.6	2.7	3.2	-
\$16.00 and over .....	4.1	.9	5.5	3.5	( <sup>3</sup> )	4.4	6.4	.1	<sup>4</sup> 12.9	3.8	2.0	4.3	.5	.6	-

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts. See appendix A for method of computing means, medians, and middle ranges.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>3</sup> Less than 0.05 percent.

<sup>4</sup> Workers were distributed as follows: 2.2 percent at \$16 and under \$16.50; 2.6 percent at \$16.50 and under \$17; 1.7 percent at \$17 and under \$17.50; 0.7 percent at \$17.50 and under

\$18; 1.5 percent at \$18 and under \$18.50; 0.8 percent at \$18.50 and under \$19; and 3.3 percent at \$19 and over.

NOTE: Because of rounding, sums of individual items may not equal 100. Dashes indicate no data.

**Table 3. Occupational average earnings: All production workers**

(Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States		Northeast		South		Midwest		West	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Selected departments</b>										
<b>Coke works and byproducts</b>										
Door-machine operators .....	336	\$11.62	-	-	-	-	120	\$12.18	-	-
Heaters .....	720	12.24	-	-	-	-	-	-	-	-
Larrymen .....	178	12.41	-	-	42	\$12.70	94	12.46	-	-
Lidmen .....	-	-	-	-	-	-	112	11.95	-	-
Pusher-operators .....	326	11.91	-	-	-	-	125	12.40	-	-
Wharfmen .....	60	11.05	-	-	-	-	37	10.97	-	-
<b>Blast furnaces</b>										
Keepers .....	305	12.60	-	-	-	-	215	12.61	-	-
Keeper helpers .....	389	12.24	-	-	-	-	327	12.15	-	-
Larrymen .....	438	11.54	-	-	-	-	-	-	-	-
Stock unloaders .....	215	11.41	-	-	43	12.74	153	11.11	-	-
<b>Electric furnaces</b>										
First helpers .....	743	13.78	222	\$13.80	261	14.73	225	12.73	35	\$13.30
<b>Basic oxygen furnaces</b>										
Furnace operators .....	226	14.32	20	15.68	68	13.59	114	14.74	-	-
Furnacemen, first .....	167	13.88	-	-	25	13.21	96	14.61	-	-
Ladle cranemen .....	386	13.19	45	13.30	81	13.56	217	13.32	-	-
Ladle liners .....	219	11.85	-	-	59	11.82	129	11.85	19	10.71
Steel pourers, first .....	181	13.43	55	13.48	32	14.49	86	13.11	-	-
Utilities attendant .....	79	11.64	-	-	22	10.05	27	12.73	14	10.90
<b>Bloom, slab and billet mills</b>										
Bloom-mill rollers .....	82	17.63	22	18.92	-	-	45	17.69	11	14.39
Hookers .....	-	-	-	-	13	9.50	-	-	-	-
Pit recorders .....	114	12.71	-	-	31	12.91	51	13.34	-	-
Scarfers .....	334	14.02	-	-	68	14.64	229	14.13	-	-
Soaking-pit cranemen .....	332	12.72	-	-	38	13.74	194	12.81	24	11.71
Soaking-pit heaters .....	146	15.29	19	16.17	32	14.95	65	15.75	30	14.12
<b>Continuous casting mills</b>										
Continuous billet or slab casters .....	566	14.20	10	19.52	140	15.28	403	13.71	13	13.60
Ladle and metal transfer controlmen .....	464	12.99	21	15.70	164	12.34	270	13.18	9	12.92
Run out operators .....	499	12.80	-	-	181	13.05	287	12.48	10	12.02
Strand casters .....	619	13.57	-	-	309	13.50	262	13.56	-	-

See footnotes at end of table.

**Table 3. Occupational average earnings: All production workers—Continued**

 (Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States		Northeast		South		Midwest		West	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Continuous hot-strip mills</b>										
Coil banders .....	-	-	10	\$12.41	48	\$9.87	-	-	-	-
Coilers .....	292	\$12.25	-	-	59	11.34	130	\$12.93	-	-
Roughers .....	230	14.31	44	13.56	16	16.99	167	14.28	-	-
Strip-mill cranemen .....	680	11.64	29	14.14	85	10.26	-	-	-	-
Tractor operators .....	375	11.95	54	13.28	30	10.03	-	-	-	-
<b>Cold strip and sheet mills</b>										
Assistant tandem mill rollers .....	483	13.12	142	12.63	61	12.92	-	-	-	-
Coil feeders .....	555	10.57	114	12.56	39	12.34	377	9.59	-	-
Continuous annealing line operators .....	380	11.85	125	14.20	67	10.09	173	10.57	-	-
Strip inspectors .....	-	-	-	-	66	11.51	-	-	-	-
Tandem mill rollers .....	688	13.95	-	-	55	15.03	-	-	-	-
<b>Tube finishing</b>										
Cut-off machine operators .....	781	10.78	190	10.47	-	-	452	10.89	43	\$9.84
Straighteners .....	424	11.47	113	11.05	105	12.42	188	11.13	-	-
<b>Rod and wire mills</b>										
Wire drawers .....	1,934	10.49	-	-	807	8.82	971	11.66	111	10.26
<b>All works or departments</b>										
<b>Maintenance</b>										
Automobile repairmen .....	436	12.23	-	-	-	-	215	12.36	-	-
Boilermakers .....	158	12.82	-	-	21	12.70	114	13.17	-	-
Bricklayers .....	883	13.49	154	13.16	175	12.92	525	13.85	29	12.17
Carpenters .....	614	12.44	127	12.51	-	-	304	12.55	8	12.38
Electricians (shop) .....	1,969	13.70	273	13.06	494	13.96	1,111	13.72	91	13.93
Electricians (wiremen) .....	1,346	13.12	188	14.67	509	12.96	572	12.57	77	14.54
Electronic repairmen .....	1,448	12.98	249	12.79	335	13.06	838	13.03	-	-
Instrument repairmen .....	458	12.82	123	13.21	-	-	161	12.57	9	15.07
Ironworkers .....	1,060	12.85	124	12.31	-	-	832	12.85	64	13.35
Machinists .....	2,935	13.10	608	12.91	662	12.65	1,481	13.36	184	13.35
Mechanical and hydraulic repairmen .....	5,706	13.62	-	-	421	13.17	3,534	14.15	139	14.40
Millwrights .....	7,545	12.58	1,230	13.13	2,525	12.28	3,586	12.62	204	12.37
Millwright helpers .....	147	9.10	56	11.09	-	-	-	-	-	-
Mobile equipment mechanics .....	1,197	12.97	301	12.90	260	13.05	578	12.88	58	13.75
Motor inspectors .....	3,104	12.68	474	12.88	-	-	1,813	12.61	-	-
Painters .....	156	12.50	51	12.71	-	-	57	12.68	-	-
Pipefitters .....	1,694	12.56	229	12.87	-	-	759	12.43	-	-

See footnotes at end of table.

**Table 3. Occupational average earnings: All production workers—Continued**

(Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States		Northeast		South		Midwest		West	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>All works or departments</b>										
<b>Maintenance</b>										
Riggers .....	796	\$12.83	152	\$13.33	-	-	275	\$12.46	-	-
Roll turners .....	702	12.92	55	14.12	218	\$13.57	400	12.43	29	\$12.52
Systems repairmen .....	336	14.90	60	15.23	-	-	-	-	-	-
Welders .....	2,674	13.23	571	13.25	873	13.31	1,190	13.17	40	13.08
<b>General labor</b>										
Janitors .....	1,438	9.96	242	9.80	354	8.41	821	10.71	21	8.21
Laborers .....	4,965	9.31	1,153	9.81	1,444	8.47	1,912	9.70	456	9.06
Locomotive cranemen .....	928	12.05	225	11.76	124	11.44	522	12.33	57	12.05
Locomotive engineers (general) .....	731	13.52	67	13.96	202	13.12	392	14.07	-	-

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

<sup>2</sup> For definitions of regions, see footnote 1, table A-1, appendix A.

NOTE: Dashes indicate that no data were reported or data did not meet publication criteria.

**Table 4. Occupational average earnings: By method of wage payment**

(Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States				Northeast				South				Midwest				West			
	Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Selected departments</b>																				
<b>Coke works and byproducts</b>																				
Door-machine operators .....	34	\$11.32	302	\$11.66	-	-	-	-	-	-	-	-	13	\$11.75	107	\$12.23	-	-	-	-
Heaters .....	54	12.52	666	12.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Larrymen .....	29	11.25	149	12.64	-	-	-	-	-	-	-	-	7	11.81	87	12.51	-	-	-	-
Lidmen .....	50	9.88	-	-	-	-	-	-	-	-	-	-	-	-	100	12.00	-	-	-	-
Pusher-operators .....	42	11.74	284	11.94	-	-	-	-	-	-	-	-	-	-	104	12.42	-	-	-	-
Wharfmen .....	18	10.69	42	11.21	-	-	-	-	-	-	-	-	-	-	34	10.95	-	-	-	-
<b>Blast furnaces</b>																				
Keepers .....	-	-	272	12.72	-	-	-	-	-	-	-	-	-	-	210	12.61	-	-	-	-
Keeper helpers .....	23	10.86	366	12.33	-	-	-	-	-	-	-	-	-	-	312	12.18	-	-	-	-
Larrymen .....	18	11.16	420	11.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stock unloaders .....	44	10.14	171	11.74	-	-	-	-	-	-	-	-	-	-	134	11.10	-	-	-	-
<b>Electric furnaces</b>																				
First helpers .....	307	11.07	436	15.69	-	-	210	\$14.04	128	\$11.15	133	\$18.19	-	-	78	16.56	20	\$14.13	-	-
<b>Basic oxygen furnaces</b>																				
Furnace operators .....	52	12.76	174	14.79	-	-	-	-	-	-	46	14.53	-	-	113	14.77	-	-	-	-
Furnacemen, first .....	38	11.89	129	14.46	-	-	-	-	-	-	21	13.97	-	-	95	14.65	-	-	-	-
Ladle cranemen .....	60	11.89	326	13.43	-	-	-	-	-	-	72	13.97	-	-	215	13.34	-	-	-	-
Ladle liners .....	20	10.47	199	11.99	-	-	-	-	-	-	52	12.18	-	-	129	11.85	-	-	-	-
Steel pourers, first .....	-	-	147	13.39	-	-	-	-	-	-	-	-	-	-	85	13.13	-	-	-	-
Utilities attendant .....	32	10.63	47	12.32	-	-	-	-	-	-	-	-	-	-	26	12.79	-	-	-	-
<b>Bloom, slab, and billet mills</b>																				
Blooming-mill rollers .....	12	14.41	70	18.18	-	-	22	18.92	-	-	-	-	-	-	42	17.91	-	-	-	-
Hookers .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pit recorders .....	-	-	109	12.79	-	-	-	-	-	-	29	13.02	-	-	51	13.34	-	-	-	-
Scarfers .....	65	10.42	269	14.89	-	-	-	-	-	-	-	-	-	-	229	14.13	-	-	-	-
Soaking-pit cranemen .....	23	11.37	309	12.82	-	-	-	-	-	-	38	13.74	-	-	188	12.86	17	11.39	-	-
Soaking-pit heaters .....	-	-	121	15.52	-	-	19	16.17	-	-	32	14.95	-	-	65	15.75	-	-	-	-

See footnotes at end of table.

**Table 4. Occupational average earnings: By method of wage payment—Continued**

(Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States				Northeast				South				Midwest				West			
	Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Continuous casting mills</b>																				
Continuous billet or slab casters .....	82	\$11.59	484	\$14.64	-	-	-	-	44	\$10.39	96	\$17.52	-	-	-	-	-	-	-	-
Ladle and metal transfer controlmen .....	171	10.15	293	14.65	-	-	21	\$15.70	84	9.29	80	15.53	-	-	186	\$14.19	-	-	-	-
Run out operators .....	140	10.50	359	13.70	-	-	-	-	68	9.88	113	14.95	-	-	219	12.92	-	-	-	-
Strand casters .....	290	11.45	329	15.43	-	-	-	-	163	11.39	146	15.86	-	-	162	15.01	-	-	-	-
<b>Continuous hot-strip mills</b>																				
Coil banders .....	52	10.90	-	-	-	-	10	12.41	-	-	-	-	-	-	-	-	-	-	-	-
Coilers .....	39	10.93	253	12.45	-	-	-	-	-	-	38	12.34	-	-	128	12.96	-	-	-	-
Roughers .....	21	13.80	209	14.37	-	-	-	-	-	-	-	-	-	-	165	14.31	-	-	-	-
Strip-mill cranemen .....	102	10.73	-	-	-	-	29	14.14	45	8.54	-	-	-	-	-	-	-	-	-	-
Tractor operators .....	113	12.14	-	-	-	-	27	13.15	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cold strip and sheet mills</b>																				
Assistant tandem mill rollers .....	77	12.74	406	13.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coil feeders .....	42	11.54	513	10.49	-	-	111	12.64	-	-	-	-	-	-	377	9.59	-	-	-	-
Continuous annealing line operators .....	80	9.91	300	12.37	-	-	115	14.42	-	-	-	-	-	-	167	10.55	-	-	-	-
Strip inspectors .....	82	11.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tandem mill rollers .....	69	14.20	619	13.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Tube finishing</b>																				
Cut-off machine operators .....	522	10.69	259	10.98	95	\$9.90	-	-	-	-	-	-	295	\$10.89	157	10.88	36	\$9.35	-	-
Straighteners .....	277	10.49	147	13.32	75	10.20	-	-	73	9.72	-	-	116	11.02	-	-	-	-	-	-
<b>Rod and wire mills</b>																				
Wire drawers .....	1,442	9.51	492	13.35	-	-	-	-	778	8.67	-	-	563	10.54	408	13.20	101	10.26	-	-

See footnotes at end of table.



**Table 4. Occupational average earnings: By method of wage payment—Continued**

(Number of workers and average straight-time hourly earnings<sup>1</sup> in selected occupations in basic iron and steel mills, United States and regions,<sup>2</sup> October 1988)

Department and occupation	United States				Northeast				South				Midwest				West			
	Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers		Timeworkers		Incentive workers	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>All works or departments</b>																				
<b>Maintenance</b>																				
Automobile repairmen .....	67	\$12.63	369	\$12.16	-	-	-	-	30	\$10.24	-	-	-	-	-	-	-	-	-	-
Boilermakers .....	18	13.02	140	12.80	-	-	-	-	-	-	-	-	-	-	107	\$13.24	-	-	-	-
Bricklayers .....	323	13.96	560	13.22	30	\$10.64	124	\$13.77	-	-	127	\$13.76	227	\$15.20	298	12.82	18	\$12.59	-	-
Carpenters .....	70	11.78	544	12.53	16	11.80	111	12.62	39	11.16	-	-	10	13.24	294	12.53	-	-	-	-
Electricians (shop) .....	1,001	12.95	968	14.47	136	12.44	137	13.68	242	11.82	252	16.01	553	13.41	558	14.04	70	14.31	-	-
Electricians (wiremen) .....	518	13.28	828	13.03	-	-	87	14.03	244	12.69	-	-	-	-	466	12.78	-	-	-	-
Electronic repairmen .....	212	12.55	1,236	13.05	-	-	233	12.77	137	12.25	198	13.63	53	12.93	-	-	6	14.77	-	-
Instrument repairmen .....	40	13.28	418	12.77	-	-	114	13.25	19	13.15	-	-	-	-	158	12.61	9	15.07	-	-
Ironworkers .....	122	13.46	938	12.78	-	-	124	12.31	-	-	-	-	-	-	814	12.85	64	13.35	-	-
Machinists .....	825	12.36	2,110	13.39	133	11.71	475	13.24	320	11.77	-	-	223	12.76	1,258	13.46	149	13.62	-	-
Mechanical and hydraulic repairmen .....	1,609	13.84	4,097	13.53	302	13.80	-	-	348	11.74	-	-	-	-	2,714	13.99	139	14.40	-	-
Millwrights .....	1,292	11.68	6,253	12.77	89	12.19	1,141	13.20	796	11.10	-	-	330	12.32	3,256	12.65	77	14.32	-	-
Millwright helpers .....	-	-	60	11.04	-	-	40	11.37	-	-	-	-	-	-	-	-	-	-	-	-
Mobile equipment mechanics .....	156	12.67	1,041	13.01	10	11.10	291	12.96	58	12.34	202	13.25	44	11.77	534	12.97	44	14.35	-	-
Motor inspectors .....	52	13.42	3,052	12.66	-	-	462	12.88	-	-	-	-	-	-	1,804	12.62	-	-	-	-
Painters .....	57	11.83	99	12.88	14	11.73	37	13.08	-	-	-	-	-	-	49	12.76	-	-	-	-
Pipefitters .....	-	-	967	12.56	30	12.15	199	12.98	-	-	-	-	68	12.50	691	12.42	-	-	-	-
Riggers .....	-	-	513	12.98	-	-	134	13.48	-	-	-	-	-	-	270	12.45	-	-	-	-
Roll turners .....	251	11.57	451	13.67	17	12.77	-	-	127	11.43	91	16.57	-	-	305	12.80	12	14.20	-	-
Systems repairmen .....	121	14.95	-	-	-	-	60	15.23	-	-	-	-	-	-	-	-	-	-	-	-
Welders .....	983	13.00	1,691	13.36	-	-	472	13.01	720	12.85	153	15.48	136	12.61	1,054	13.24	-	-	-	-
<b>General labor</b>																				
Janitors .....	1,266	9.93	172	10.16	239	9.76	-	-	273	7.89	-	-	733	10.79	88	10.06	21	8.21	-	-
Laborers .....	3,860	9.03	1,105	10.28	492	9.28	-	-	1,297	8.20	147	10.82	1,634	9.64	-	-	437	8.95	-	-
Locomotive crane men .....	421	11.91	507	12.17	82	12.11	143	11.56	83	10.06	41	14.25	204	12.50	318	12.21	52	12.24	-	-
Locomotive engineers (general) .....	150	12.10	581	13.88	28	14.19	39	13.79	35	11.94	-	-	21	12.52	371	14.16	-	-	-	-

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

NOTE: Dashes indicate that no data were reported or data did not meet publication criteria.

**Table 5. Scheduled weekly hours**

(Percent of production workers in basic iron and steel mills by scheduled weekly hours,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Weekly hours	United States	Northeast	South	Midwest	West
All workers .....	100	100	100	100	100
Under 40 hours .....	1	-	1	1	-
40 hours .....	94	99	83	97	93
42 hours .....	3	-	11	1	7
43 hours .....	( <sup>3</sup> )	( <sup>3</sup> )	-	-	-
44 hours .....	1	-	3	-	-
46 hours .....	( <sup>3</sup> )	-	-	( <sup>3</sup> )	-
48 hours .....	1	1	1	1	-
50 hours .....	( <sup>3</sup> )	-	-	1	-
52 hours .....	( <sup>3</sup> )	-	2	-	-

<sup>1</sup> Data relate to the predominant schedule for full-time day-shift workers in each plant.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>3</sup> Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

**Table 6. Shift differential provisions**

(Percent of production workers in basic iron and steel mills by shift differential provisions,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Shift differential	United States	Northeast	South	Midwest	West	Shift differential	United States	Northeast	South	Midwest	West
<b>Second shift</b>						<b>Third shift</b>					
Workers in establishments with second-shift provisions .....	97.2	100.0	89.6	98.9	96.1	Workers in establishments with third-shift provisions .....	96.2	98.3	88.2	98.9	88.7
With shift differential .....	94.4	100.0	79.4	98.9	79.5	With shift differential .....	93.4	98.3	78.0	98.9	73.2
Uniform cents per hour .....	91.2	98.0	76.4	94.9	79.5	Uniform cents per hour .....	90.5	97.1	75.0	94.9	73.2
10 cents .....	2.9	3.3	.5	4.0	-	10 cents .....	.3	-	-	.6	-
14 cents .....	.4	-	-	.7	-	15 cents .....	2.3	2.3	-	3.4	-
15 cents .....	5.0	2.3	13.0	.4	35.0	16 cents .....	.2	-	-	.4	-
16 cents .....	.2	-	-	.4	-	18 cents .....	.2	-	-	.4	-
17 cents .....	.4	.8	-	.5	-	20 cents .....	5.3	3.0	10.2	4.9	-
19 cents .....	.3	1.4	-	-	-	21 cents .....	.3	1.4	-	-	-
20 cents .....	35.4	44.4	6.5	43.8	21.2	22 cents .....	1.1	-	-	-	23.7
21 cents .....	.6	-	2.8	-	-	22.5 cents .....	.9	-	4.5	-	-
23 cents .....	.5	-	2.5	-	-	23 cents .....	.3	1.1	-	-	-
25 cents .....	5.3	7.1	4.4	4.7	6.4	25 cents .....	1.7	1.2	3.1	.7	9.6
25.77 cents .....	6.4	-	31.9	-	-	30 cents .....	33.1	44.3	2.9	40.6	23.0
30 cents .....	32.8	35.2	14.8	40.5	12.5	31 cents .....	.6	-	2.8	-	-
35 cents .....	.4	.8	-	-	4.4	35 cents .....	2.5	3.5	-	3.2	-
50 cents .....	.7	2.8	-	-	-	38.66 cents .....	6.4	-	31.9	-	-
Uniform percentage .....	3.0	2.0	3.0	3.7	-	40 cents .....	1.5	1.7	3.0	1.0	-
2.17 percent .....	.3	-	-	.5	-	45 cents .....	33.0	35.9	16.6	39.8	12.5
5 percent .....	2.2	-	3.0	3.2	-	50 cents .....	.7	2.8	-	-	-
6 percent .....	.2	.8	-	-	-	55 cents .....	.2	-	-	-	4.4
12 percent .....	.3	1.2	-	-	-	Uniform percentage .....	2.8	1.2	3.0	3.7	-
Other formal paid differential .....	.2	-	-	.3	-	3.26 percent .....	.3	-	-	.5	-
						5 percent .....	.6	-	3.0	-	-
						10 percent .....	1.6	-	-	3.2	-
						12 percent .....	.3	1.2	-	-	-
						Other formal paid differential .....	.2	-	-	.3	-

<sup>1</sup> Refers to policies of establishments currently operating late shifts or having provisions covering late shifts.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

**Table 7. Shift differential practices**

(Percent of production workers in basic iron and steel mills by shift differential practices, United States and regions,<sup>1</sup> October 1988)

Shift differential	United States	Northeast	South	Midwest	West	Shift differential	United States	Northeast	South	Midwest	West
<b>Second shift</b>						<b>Third shift</b>					
Workers employed on second shift .....	21.0	18.0	25.0	20.2	27.3	Workers employed on third shift .....	16.5	12.8	22.8	15.4	20.4
Receiving differential .....	20.2	18.0	22.4	20.2	22.6	Receiving differential .....	16.0	12.8	20.5	15.4	18.8
Uniform cents per hour .....	19.4	17.7	21.4	19.2	22.6	Uniform cents per hour .....	15.2	12.7	19.5	14.5	18.8
10 cents .....	.7	.9	.1	.8	-	10 cents .....	.1	-	-	.2	-
14 cents .....	.1	-	-	.3	-	15 cents .....	.4	.4	-	.6	-
15 cents .....	1.4	.6	3.9	.1	8.5	16 cents .....	( <sup>2</sup> )	-	-	.1	-
16 cents .....	.1	-	-	.2	-	18 cents .....	.1	-	-	.1	-
17 cents .....	.2	.3	-	.2	-	20 cents .....	.9	.7	2.8	.3	-
19 cents .....	.1	.5	-	-	-	21 cents .....	.1	.4	-	-	-
20 cents .....	7.9	9.5	2.1	9.5	6.6	22 cents .....	.3	-	-	-	5.8
21 cents .....	.2	-	.9	-	-	22.5 cents .....	.3	-	1.5	-	-
23 cents .....	.2	-	1.0	-	-	23 cents .....	( <sup>2</sup> )	.1	-	-	-
25 cents .....	1.4	1.5	1.0	1.4	1.8	25 cents .....	.4	.2	.9	.2	2.1
25.77 cents .....	1.5	-	7.4	-	-	30 cents .....	5.3	7.0	.9	6.2	5.2
30 cents .....	5.5	3.6	4.9	6.7	4.5	31 cents .....	.2	-	.9	-	-
35 cents .....	.1	-	-	-	1.1	35 cents .....	.4	.4	-	.7	-
50 cents .....	.2	.8	-	-	-	38.66 cents .....	1.4	-	7.1	-	-
Uniform percentage .....	.7	.3	1.0	.9	-	40 cents .....	.4	.3	1.0	.2	-
2.17 percent .....	.1	-	-	.2	-	45 cents .....	4.7	2.4	4.5	5.9	4.5
5 percent .....	.5	-	1.0	.7	-	50 cents .....	.2	.8	-	-	-
6 percent .....	( <sup>2</sup> )	.1	-	-	-	55 cents .....	.1	-	-	-	1.1
12 percent .....	.1	.2	-	-	-	Uniform percentage .....	.6	.1	1.0	.8	-
Other formal paid differential .....	.1	-	-	.1	-	3.26 percent .....	.1	-	-	.2	-
						5 percent .....	.2	-	1.0	-	-
						10 percent .....	.3	-	-	.7	-
						12 percent .....	( <sup>2</sup> )	.1	-	-	-
						Other formal paid differential .....	.1	-	-	.1	-

<sup>1</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>2</sup> Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

**Table 8. Paid holidays**

(Percent of production workers in basic iron and steel mills with formal provisions for paid holidays, United States and regions,<sup>1</sup> October 1988)

Number of paid holidays	United States	Northeast	South	Midwest	West
All workers .....	100	100	100	100	100
Workers in establishments providing paid holidays .....	100	100	100	100	100
4 days .....	1	-	-	-	15
5 days .....	10	2	40	3	-
6 days .....	24	37	3	27	24
7 days .....	14	13	2	21	5
8 days .....	8	12	16	1	23
8 days plus 2 half days .....	( <sup>2</sup> )	-	-	-	1
9 days .....	4	7	9	1	7
10 days .....	28	13	24	38	10
11 days .....	5	14	1	2	14
12 days .....	2	-	5	2	-
13 days .....	3	3	-	5	-
14 days .....	( <sup>2</sup> )	-	-	( <sup>2</sup> )	-

<sup>1</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>2</sup> Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

**Table 9. Paid vacations**

(Percent of production workers in basic iron and steel mills with formal provisions for paid vacations after selected periods of service, United States and regions,<sup>1</sup> October 1988)

Vacation policy	United States	Northeast	South	Midwest	West	Vacation policy	United States	Northeast	South	Midwest	West
All workers .....	100	100	100	100	100						
<b>Method of payment</b>						<b>Amount of vacation pay<sup>2</sup></b>					
<b>Workers in establishments providing paid vacations</b> .....	100	100	100	100	100	<b>—Continued</b>					
Length-of-time payment .....	90	93	100	88	55	After 5 years of service:					
Percentage payment .....	8	7	-	11	21	1 week .....	13	8	5	16	39
Flat sum .....	( <sup>2</sup> )	-	-	( <sup>2</sup> )	-	Over 1 and under 2 weeks .....	6	-	32	-	2
Other .....	1	-	-	1	24	2 weeks .....	64	82	47	64	44
						Over 2 and under 3 weeks .....	3	4	7	1	2
						3 weeks .....	12	2	6	19	12
						Over 3 and under 4 weeks .....	1	3	-	( <sup>2</sup> )	-
						4 weeks .....	( <sup>2</sup> )	-	1	-	-
						Over 4 and under 5 weeks .....	( <sup>2</sup> )	-	1	-	-
<b>Amount of vacation pay<sup>3</sup></b>						After 8 years of service:					
After 6 months of service:						1 week .....	11	8	-	16	15
Under 1 week .....	1	2	1	1	-	Over 1 and under 2 weeks .....	6	-	32	-	-
1 week .....	7	3	14	5	12	2 weeks .....	59	76	41	58	45
Over 1 and under 2 weeks .....	( <sup>2</sup> )	-	-	( <sup>2</sup> )	-	Over 2 and under 3 weeks .....	2	3	4	1	4
4 weeks .....	( <sup>2</sup> )	-	1	-	-	3 weeks .....	19	9	17	22	36
After 1 year of service:						Over 3 and under 4 weeks .....	2	3	3	1	-
1 week .....	69	93	38	70	76	4 weeks .....	1	-	1	1	-
Over 1 and under 2 weeks .....	2	3	4	1	-	Over 4 and under 5 weeks .....	( <sup>2</sup> )	-	1	-	-
2 weeks .....	22	4	25	30	24	After 10 years of service:					
4 weeks .....	( <sup>2</sup> )	-	1	-	-	1 week .....	1	2	-	-	-
After 2 years of service:						2 weeks .....	15	6	14	17	51
1 week .....	65	87	33	68	56	Over 2 and under 3 weeks .....	7	2	32	( <sup>2</sup> )	2
Over 1 and under 2 weeks .....	2	1	4	1	2	3 weeks .....	63	83	44	63	39
2 weeks .....	25	8	27	31	42	Over 3 and under 4 weeks .....	3	1	7	3	-
Over 2 and under 3 weeks .....	2	3	3	( <sup>2</sup> )	-	4 weeks .....	9	2	1	14	9
4 weeks .....	( <sup>2</sup> )	-	1	-	-	Over 4 and under 5 weeks .....	2	3	1	1	-
After 3 years of service:						5 weeks .....	( <sup>2</sup> )	-	-	1	-
1 week .....	14	8	7	17	39	After 12 years of service:					
Over 1 and under 2 weeks .....	7	-	34	( <sup>2</sup> )	2	1 week .....	1	2	-	-	-
2 weeks .....	66	86	51	64	59	2 weeks .....	15	5	13	17	51
Over 2 and under 3 weeks .....	5	4	6	5	-	Over 2 and under 3 weeks .....	7	1	32	( <sup>2</sup> )	-
3 weeks .....	8	1	-	15	-	3 weeks .....	61	81	43	62	33
4 weeks .....	( <sup>2</sup> )	-	1	-	-	Over 3 and under 4 weeks .....	4	2	7	3	2
After 4 years of service:						4 weeks .....	11	5	3	17	14
1 week .....	13	8	7	16	39	Over 4 and under 5 weeks .....	2	3	1	1	-
Over 1 and under 2 weeks .....	7	-	34	-	2	5 weeks .....	( <sup>2</sup> )	-	-	1	-
2 weeks .....	67	86	51	64	59						
Over 2 and under 3 weeks .....	5	5	6	5	-						
3 weeks .....	8	1	-	15	-						
4 weeks .....	( <sup>2</sup> )	-	1	-	-						

See footnotes at end of table.

**Table 9. Paid vacations—Continued**

(Percent of production workers in basic iron and steel mills with formal provisions for paid vacations after selected periods of service, United States and regions,<sup>1</sup> October 1988)

Vacation policy	United States	Northeast	South	Midwest	West	Vacation policy	United States	Northeast	South	Midwest	West
<b>Amount of vacation pay<sup>3</sup> —Continued</b>						<b>Amount of vacation pay<sup>3</sup> —Continued</b>					
After 15 years of service:						After 25 years of service:					
1 week .....	1	2	-	-	-	2 weeks .....	1	-	2	( <sup>2</sup> )	-
2 weeks .....	6	-	10	3	39	3 weeks .....	7	7	10	2	61
Over 2 and under 3 weeks .....	6	-	32	-	-	Over 3 and under 4 weeks .....	1	-	3	-	-
3 weeks .....	62	80	30	69	37	4 weeks .....	22	8	32	24	24
Over 3 and under 4 weeks .....	2	3	5	( <sup>2</sup> )	2	Over 4 and under 5 weeks .....	7	1	33	( <sup>2</sup> )	4
4 weeks .....	17	5	22	20	17	5 weeks .....	50	73	17	57	11
Over 4 and under 5 weeks .....	6	8	1	6	4	Over 5 and under 6 weeks .....	5	8	2	5	-
5 weeks .....	1	1	-	1	-	6 weeks .....	7	2	1	11	-
Over 5 and under 6 weeks .....	( <sup>2</sup> )	-	-	( <sup>2</sup> )	-	Over 6 and under 7 weeks .....	( <sup>2</sup> )	-	-	1	-
After 20 years of service:						After 30 years of service: <sup>4</sup>					
2 weeks .....	1	2	2	( <sup>2</sup> )	-	2 weeks .....	1	-	2	( <sup>2</sup> )	-
3 weeks .....	11	4	19	5	73	3 weeks .....	6	7	10	2	38
Over 3 and under 4 weeks .....	7	1	35	-	-	Over 3 and under 4 weeks .....	1	-	3	-	-
4 weeks .....	65	79	38	74	17	4 weeks .....	23	8	32	24	48
Over 4 and under 5 weeks .....	5	6	3	6	4	Over 4 and under 5 weeks .....	7	-	33	( <sup>2</sup> )	4
5 weeks .....	9	4	3	15	6	5 weeks .....	51	74	17	57	11
Over 5 and under 6 weeks .....	1	3	-	-	-	Over 5 and under 6 weeks .....	1	3	2	-	-
Over 6 and under 7 weeks .....	( <sup>2</sup> )	-	-	( <sup>2</sup> )	-	6 weeks .....	10	7	1	16	-
						Over 6 and under 7 weeks .....	( <sup>2</sup> )	-	-	1	-

<sup>1</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>2</sup> Less than 0.5 percent.

<sup>3</sup> Vacation payments, such as percent of annual earnings, were converted to an equivalent time basis. Periods of service were chosen arbitrarily and do not necessarily reflect individual establishment provisions for progression. For example, changes indicated at 20 years may include changes

that occurred between 15 and 20 years.

<sup>4</sup> Vacation provisions were virtually the same after longer periods of service.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

**Table 10. Health, insurance, and retirement plans**(Percent of production workers in basic iron and steel mills with specified health, insurance, and retirement plans,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Type of plan	United States	Northeast	South	Midwest	West	Type of plan	United States	Northeast	South	Midwest	West
All workers .....	100	100	100	100	100	Workers in establishments providing:					
Workers in establishments providing:						Dental care .....	95	92 <sup>o</sup>	92	98	92
Life insurance .....	100	100	100	100	100	Noncontributory plans .....	83	85	82	82	81
Noncontributory plans .....	98	100	90	100	99	Vision care .....	71	79	59	76	27
Accidental death and dismemberment insurance .....	57	41	90	48	95	Noncontributory plans .....	70	78	57	76	24
Noncontributory plans .....	55	40	80	48	93	Hearing care .....	43	51	6	53	43
Sickness and accident insurance or sick leave or both <sup>3</sup> .....	97	96	95	100	84	Noncontributory plans .....	42	51	6	52	40
Sickness and accident insurance .....	92	94	87	95	74	Alcohol and drug abuse treatment .....	98	97	99	99	99
Noncontributory plans .....	91	94	78	95	74	Noncontributory plans .....	86	91	87	83	92
Sick leave (full pay, no waiting period) .....	13	2	3	21	17	Retirement plans <sup>4</sup> .....	99	100	98	99	96
Sick leave (partial pay or waiting period) .....	1	-	5	-	4	Pensions .....	96	98	85	99	94
Long-term disability insurance .....	19	11	18	24	16	Noncontributory plans .....	94	98	85	98	69
Noncontributory plans .....	19	10	18	24	16	Lump sum .....	7	2	18	6	3
Basic health care coverage <sup>5</sup> .....	100	100	100	100	100	Noncontributory plans .....	7	2	16	5	3
Noncontributory plans .....	86	93	83	83	92	Other retirement .....	3	9	4	1	-
Hospitalization, surgical, and medical insurance .....	99	100	99	100	81	Noncontributory plans .....	2	7	-	( <sup>o</sup> )	-
Noncontributory plans .....	85	93	83	83	75						
Health maintenance organizations .....	71	78	16	87	89						
Noncontributory plans .....	51	53	9	64	79						

<sup>1</sup> Includes those plans for which the employer pays at least part of the cost and excludes legally required plans such as workers' compensation and Social Security; however, plans required by State temporary disability insurance laws are included if the employer contributes more than is legally required or employees receive benefits over legal requirements. "Noncontributory plans" include only those plans financed entirely by the employer.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>3</sup> Unduplicated total of employees receiving sickness and accident insurance and sick leave

shown separately.

<sup>4</sup> Unduplicated total of employees covered by pension plans and lump sums shown separately.

<sup>5</sup> Less than 0.5 percent.

<sup>6</sup> Unduplicated total of employees receiving hospitalization, surgical, and medical insurance, and health maintenance organization coverage shown separately.

NOTE: Dashes indicate that no data were reported.



**Table 11. Health plan participation**

(Percent of production workers in basic iron and steel mills participating in specified health plans,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Type of plan	United States	Northeast	South	Midwest	West
All workers .....	100	100	100	100	100
Basic health care coverage <sup>3</sup> .....	99	99	99	99	99
Noncontributory plans .....	86	93	82	83	92
Hospitalization, surgical, and medical insurance .....	84	94	95	79	35
Noncontributory plans .....	73	88	79	68	34
Health maintenance organizations .....	16	6	4	20	65
Noncontributory plans .....	11	4	3	14	58
Dental care .....	95	92	92	97	91
Noncontributory plans .....	83	85	82	82	81
Vision care .....	71	78	58	76	25
Noncontributory plans .....	70	78	57	75	24
Hearing care .....	42	51	6	53	41
Noncontributory plans .....	42	51	6	52	40
Alcohol and drug abuse treatment .....	98	97	98	99	98
Noncontributory plans .....	86	91	87	83	92

<sup>1</sup> Percentages of employees participating in some of these plans may exceed the percentages shown for the plans in table 10. Data in that table relate to employees in establishments where a *majority* of workers are covered by a plan. Data in this table include all participants, even those from establishments providing coverage to a minority of workers. For definition of items, see appendix A.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, Appendix A.

<sup>3</sup> Unduplicated total of employees participating in hospitalization, surgical, and medical insurance plans, and health maintenance organizations shown separately.

**Table 12. Other selected benefits**

(Percent of production workers in basic iron and steel mills with formal provisions for selected benefits,<sup>1</sup> United States and regions,<sup>2</sup> October 1988)

Benefit	United States	Northeast	South	Midwest	West
Workers in establishments providing:					
Funeral leave pay .....	98	100	93	99	94
Jury-duty leave .....	98	100	95	99	83
Military leave .....	87	86	83	92	44
Technological severance pay .....	74	82	53	81	43
Supplemental unemployment benefits .....	73	83	55	80	27
Earnings protection plan .....	51	43	55	53	51
Profit-sharing or stock-ownership plans .....	41	31	68	33	57
Cost-of-living adjustments <sup>3</sup> .....	22	19	23	25	11
Provision in effect, adjustments made .....	8	3	23	4	7
Provision in effect, maximum attained .....	2	-	-	3	-
Provision suspended, lump-sum payments made .....	( <sup>4</sup> )	-	-	( <sup>4</sup> )	-
Provision suspended, no adjustments made .....	13	16	-	17	4

<sup>1</sup> For definition of items, see appendix A.

<sup>2</sup> For definition of regions, see footnote 1, table A-1, appendix A.

<sup>3</sup> All plans were based on the BLS Consumer Price Index.

<sup>4</sup> Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals. Dashes indicate that no data were reported.

# Appendix A. Scope and Method of Survey

## Scope of survey

The survey included establishments engaged primarily in manufacturing steel products classified in the following industries as defined in the 1972 edition of the *Standard Industrial Classification Manual* prepared by the U.S. Office of Management and Budget: (1) Blast furnaces, steel works, and rolling and finishing mills (part of SIC 3312); (2) steel wire drawing and steel nails and spikes (SIC 3315); (3) cold rolled steel sheet, strip, and bars (SIC 3316); and (4) steel pipe and tubes (SIC 3317). Excluded from the survey were merchant coke ovens (part of SIC 3312), electrometallurgical products manufacturers (SIC 3313), establishments producing steel solely for use by a parent company not classified in the steel industry, and separate auxiliary units such as central offices, research laboratories, and warehouses.

Mills studied were selected from those employing 100 workers or more at the time of reference of the data used in compiling the universe lists. Table A-1 shows the number of establishments and workers estimated to be within the scope of the survey, as well as the number actually studied by the Bureau.

## Method of study

Data were obtained by personal visits of the Bureau's field representatives to a probability-based sample of mills within the scope of the survey. To obtain appropriate accuracy at minimum cost, a greater proportion of large than of small mills was studied. In combining the data, each mill was given an appropriate weight. All estimates are presented, therefore, as relating to all mills in the industry, excluding only those below the minimum size at the time of reference of the universe data.

## Establishment definition

A mill (establishment) was defined for this study as a single physical location where industrial operations are performed. A mill is not necessarily identical with a company, which may consist of one mill or more. The terms "establishment" and "mill" have been used interchangeably in this bulletin.

## Employment

Estimates of the number of workers within the scope of the study are intended as a general guide to the size and com-

position of the industry's labor force, rather than as precise measures of employment. The number of workers in selected occupations may represent equivalent numbers of full-time workers in the task during the payroll period studied.

## Production workers

The terms "production workers" and "production and related workers," used interchangeably in this bulletin, include working supervisors and all nonsupervisory workers engaged in nonoffice activities. Administrative, executive, professional, and technical personnel, and force-account construction employees, who are used as a separate work force on the firm's own properties, are excluded.

## Occupational classification

Occupational classification was based on a uniform set of job descriptions designed to take account of interestablishment and interarea variations in duties within the same job. (See appendix B for these descriptions.) The criteria for selection of the occupations were: The number of workers in the occupation; the usefulness of the data in wage determinations; and appropriate representation of the entire job scale in the industry. Working supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers were not reported in the data for selected occupations but were included in the data for all production workers.

## Wage data

Information on wages relates to straight-time hourly earnings, excluding premium pay for overtime and for work on weekends, holidays, and late shifts. Incentive payments, such as those resulting from piecework or production bonus systems, and cost-of-living pay increases (but not bonuses) were included as part of the workers' regular pay. Excluded were performance bonuses and lump-sum payments such as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses.

*Average (mean) hourly rates or earnings* for production workers shown in tables 1 and 2 were calculated in two stages when hourly rates were not reported for individual workers.

**Table A-1. Estimated number of establishments and workers within the scope of the survey and the number studied, basic iron and steel mills, October 1988**

Region <sup>1</sup>	Number of establishments <sup>2</sup>		Employees in establishments		
	Within scope of study	Actually studied	Within scope of study		Total actually studied <sup>3</sup>
			Total <sup>4</sup>	Production workers	
United States .....	270	131	225,871	178,889	154,761
Northeast .....	65	31	54,215	43,384	32,286
South .....	83	31	46,914	35,630	26,298
Midwest .....	99	50	114,165	91,575	86,328
West .....	23	19	10,577	8,300	9,849

<sup>1</sup> The regions are defined as follows: *Northeast*—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *South*—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; *Midwest*—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and *West*—Arizona, California, Colorado, Idaho, Montana, Nevada,

New Mexico, Oregon, Utah, Washington, and Wyoming. Alaska and Hawaii were not included in the study.

<sup>2</sup> Includes only those establishments with 100 workers or more at the time of reference of the universe data.

<sup>3</sup> Data relate to total employment in establishments actually visited.

<sup>4</sup> Includes executive, professional, office, and other workers in addition to the production worker category shown separately.

First, average hourly rates for individual workers were calculated by dividing total earnings (excluding premiums for overtime and for work on late shifts, weekends, and holidays) for the payroll period by the number of hours paid. Second, average straight-time hourly earnings were then obtained by summing these individual hourly earnings (appropriately weighted by employment) and dividing by the total number of workers.

A different method, however, was used in calculating average hourly earnings in individual occupations. Because employees in mills using the common job evaluation system frequently work on a variety of tasks in a payroll period, one employee may be paid several different rates. To facilitate data collection and not overstate the number of job incumbents, wages paid for specific tasks were developed by grouping earnings data for individual occupations according to task rather than job classification. Within each establishment, the aggregate earnings and hours involved with the same occupation, job class, and method of wage payment (for example, door-machine operators, grade 11, incentive) were used to compute an average hourly pay rate. The aggregate hours were converted to an equivalent number of workers (a full-time equivalent concept) which was then used to produce estimates of employment in the job and weighted average hourly earnings (means). In mills not using the common job evaluation system, workers were matched into the job category reflecting their highest wage rate. For these workers, the wage rate was calculated by dividing straight-time wages paid for all tasks during the payroll period by the hours to which the earnings corresponded.

The *median* designates position; that is, one-half of the employees surveyed received the same as or more than this rate and one-half received the same as or less. The *middle range* is defined by two rates of pay such that one-fourth of the employees earned the same as or more than the higher of these rates (third quartile) and one-fourth earned the same as or less than the lower rate (first quartile).

## Type of area

Tabulations by type of area pertain to metropolitan and nonmetropolitan areas. The term "metropolitan areas," as used in this bulletin, refers to Metropolitan Statistical Areas (MSA's) or Primary Metropolitan Statistical Areas (PMSA's) as defined by the U.S. Office of Management and Budget through October 1984. In general, an MSA is defined as a county or group of contiguous counties which contains at least one central city of at least 50,000 inhabitants or a central urbanized area of at least 100,000. Counties contiguous to the one containing such a city or area are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. A CMSA (Consolidated Metropolitan Statistical Area) is an area consisting of more than one PMSA. (The difference between an MSA and a PMSA is that the PMSA is part of a CMSA.) In New England, where the city and town are administratively more important than the county, they are the units used in defining MSA's.

## Method of wage payment

Tabulations by method of wage payment relate to the number of workers paid under the various time-rated and incentive wage systems. Time related wage systems relate to a single or range-of-rates designated to be paid for a particular job. Incentive wage systems relate a worker's earnings to actual or group production. Incentive systems incorporate piecework, production bonuses, or commissions.

## Labor-management agreements

Separate wage data are presented, where possible, for establishments that had (1) a majority of production workers covered by labor-management contracts, and (2) none or a

minority of production workers covered by labor-management contracts.

### Scheduled weekly hours

Data on weekly hours refer to the predominant work schedule for full-time production workers employed on the day shift.

### Shift provision and practices

Shift provisions relate to the policies of mills either currently operating late shifts or having formal provisions covering late-shift work. Practices relate to workers employed on late shifts at the time of the survey.

### Employee benefits

Employee benefits in an establishment were considered applicable to all production workers if they applied to half of such workers or more in the establishment. Similarly, if fewer than half of the workers were covered, the benefit was considered nonexistent in the establishment. Because of length-of-service and other eligibility requirements, the proportion of workers receiving the benefits may be smaller than estimated.

*Paid holidays.* Paid holiday provisions relate to full-day and half-day holidays provided annually.

*Paid vacations.* The summary of vacation plans is limited to formal arrangements and excludes informal plans whereby time off with pay is granted at the discretion of the employer or supervisor. Payments not on a time basis were converted; for example, a payment of 2 percent of annual earnings was considered the equivalent of 1 week's pay. The periods of service for which data are presented represent the most common practices, but they do not necessarily reflect individual establishment provisions for progression. For example, changes in proportions indicated at 20 years of service may include changes which occurred between 15 and 20 years.

*Insurance, health, and retirement plans.* Data are presented for insurance, health, and retirement plans for which the employer pays all or a part of the cost. The benefits may be underwritten by a commercial insurance company, paid directly by an employer or union from current operating funds or from a fund set aside for this purpose, or provided by a health maintenance organization (HMO). Workers provided the option of an insurance plan or an HMO are reported under both types of plans. Legally required plans such as Social Security, workers' disability compensation, and temporary disability insurance are excluded.<sup>1</sup>

Life insurance includes formal plans providing indemnity (usually through an insurance policy) in case of death of the covered worker. Accidental death and dismemberment in-

surance is limited to plans which provide benefit payments in case of death or loss of limb or sight as a direct result of an accident.

Sickness and accident insurance is limited to that type of insurance under which predetermined cash payments are made directly to the insured on a weekly or monthly basis during illness or accident disability.

Tabulations of paid sick leave plans are limited to formal plans<sup>2</sup> which provide full pay or a proportion of the worker's pay during absence from work because of illness; informal arrangements have been omitted. Separate tabulations are provided for (1) plans which provide full pay and no waiting period, and (2) plans providing either partial pay or a waiting period.

Long-term disability insurance plans provide payments to totally disabled employees upon the expiration of sick leave, sickness and accident insurance, or both, or after a specified period of disability (typically 6 months). Payments are made until the end of disability, a maximum age, or eligibility for retirement. Payments may be full or partial, but are almost always reduced by Social Security, workers' disability compensation, and private pension benefits payable to the disabled employee.

Hospitalization, surgical, and medical insurance plans provide at least partial payment for: 1) hospital room charges; 2) inpatient surgery; and 3) doctors' fees for hospital, office, or home visits. These plans typically cover other expenses such as outpatient surgery and prescription drugs.

An HMO provides comprehensive medical care in return for pre-established fees. Unlike insurance, HMO's cover routine preventive care as well as care required because of an illness and do not have deductibles or coinsurance (although there may be small fixed copayments for selected services). HMO's may provide services through their own facilities; through contracts with hospitals, physicians, and other providers, such as individual practice associations (IPA's); or through a combination of methods.

<sup>1</sup> Temporary disability insurance which provides benefits to covered workers disabled by injury or illness which is not connected is mandatory under State laws in California, New Jersey, New York, and Rhode Island. Establishment plans which meet only the legal requirements are excluded from these data, but those under which (1) employers contribute more than is legally required, or (2) benefits exceed those specified in the State law are included. In Rhode Island, benefits are paid out of a State fund to which only employees contribute. In each of the other three States, benefits are paid either from a State fund or through a private plan.

*State fund financing:* In California, only employees contribute to the State fund; in New Jersey, employees and employers contribute; and in New York, employees contribute up to a specified maximum and employers pay the difference between the employees' share and the total contribution required.

*Private plan financing:* In California and New Jersey, employees cannot be required to contribute more than they would if they were covered by the State fund; in New York, employees can agree to contribute more if the State rules that the additional contribution is commensurate with the benefit provided.

<sup>2</sup> An establishment is considered as having a formal plan if it specifies at least the minimum number of days of sick leave available to each employee. Such a plan need not be written, but informal sick leave allowances determined on an individual basis are excluded.

Dental care plans provide at least partial payment for routine dental care, such as checkups and cleanings, fillings, and X-rays. Excluded are plans which cover only oral surgery or care required as the result of an accident.

Vision care plans provide at least partial payment for routine eye examinations and/or eyeglasses. Plans which restrict benefits to certain kinds of surgery or care required as a result of an accident are not reported.

Hearing care plans provide at least partial payment for hearing examinations, hearing aids, or both.

Alcohol and drug abuse treatment plans provide at least partial payment for institutional treatment (in a hospital or specialized facility) for addiction to alcohol or drugs.

Tabulations of retirement pensions are limited to plans which provide regular payments for the remainder of the retiree's life. Lump-sum plans are defined as those providing for a single payment at retirement; "other" plans include those providing for a fixed number of payments (more than one) after which payments are discontinued. Establishments providing both lump-sum payments and pensions were included in data for each, but establishments having optional plans providing employees a choice of either lump-sum payments or pensions were considered as having only pension benefits.

*Health plan participation.* Data relate to the proportion of production workers participating in selected health care plans. A plan is included even though it is offered only to a minority of workers, or a majority of the employees in an establishment do not choose to participate in it.

*Paid funeral and jury-duty leave.*<sup>3</sup> Data relate to formal plans providing at least partial payment for time lost as a result

<sup>3</sup> When paid jury-duty leave is required by law, as it is in Alabama, Nebraska, Tennessee, and parts of Florida and Massachusetts, plans are included only if the employer provides the employees with benefits exceeding the legal requirement.

of attending funerals of specified family members or serving as a juror.

*Military leave.* Formal plans which provide excused absence from work with full or partial pay while on annual training duty. Plans that provide paid leave only for temporary emergency duty are excluded.

*Technological severance pay.* Formal plans providing for payments to employees permanently separated through no fault of their own for such reasons as technological change or closing or scaling down all or part of the establishment.

*Supplemental unemployment benefits.* Data relate to formal plans for supplementing benefits paid under State unemployment insurance systems.

*Earnings protection plans.* Data relate to formal provisions that provide pay designated to protect the level of earnings of workers assigned to lower paying jobs due to technological change.

*Profit-sharing or stock-ownership plans.* Data relate to formal plans under which employees receive a part of a corporation's profits, or allows purchase of corporate stock at a fixed price at a specified time. Plans may provide for immediate or deferred payment of benefits.

*Cost-of-living adjustment.* Formal plans that adjust wages in keeping with changes in the BLS Consumer Price Index or some other measure. Data are presented separately for plans that, at the time of the survey, reported: Provisions in effect, automatic adjustments made; provisions temporarily suspended, lump-sum payments made in lieu of automatic adjustments; and provisions temporarily suspended, no other payment made.

# Appendix B. Occupational Descriptions

The primary purpose of preparing job descriptions for the Bureau's wage surveys is to assist its field representatives in classifying into appropriate occupations workers who are employed under a variety of payroll titles and different work arrangements from establishment to establishment and from area to area. This permits the grouping of occupational wage rates representing comparable job content. Because of this emphasis on interestablishment and interarea comparability of occupational content, the Bureau's job descriptions may differ significantly from those used in individual establishments or those prepared for other purposes. In applying these job descriptions, the Bureau's field representatives were instructed to exclude apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers.

The titles and numeric codes below the job titles in this appendix were taken from the 1980 edition of the *Standard Occupational Classification Manual* (SOC), issued by the U.S. Department of Commerce, Office of Federal Statistical

Policy and Standards.

In general, the Bureau of Labor Statistics' occupational descriptions are much more specific than those found in the SOC manual. For example, seven BLS occupations fall under one SOC category: Rolling machine operators and tenders (7516). Thus, in comparing the results of this survey with other sources, differences in occupational definitions should be taken into consideration.

The sources for the descriptions of occupations selected for separate study were those used in establishments that have adopted the industry's common job evaluation system. The Bureau also used these descriptions to classify workers in other establishments. The alphabetical and numerical code next to the job titles is the job code in establishments that use the common job evaluation system; it is not relevant in other establishments. Jobs under "Selected Departments or Works" are limited to the indicated departments and those under "All Departments" were studied wherever they were found in the establishment.

## Part I. Selected Departments or Works

### Coke Works and Byproducts

#### Door-machine operator AA-03050

(SOC 7529: Miscellaneous metalworking and plastic working machine operators)

Operates door machine to remove and replace coke oven doors.

#### Heater AA-01800

(SOC 7675: Furnace, kiln, and oven operators and tenders)

Operates coke oven batteries to produce coke from coal by directing and controlling heating.

#### Larryman AA-01970

(SOC 8318: Industrial truck and tractor equipment operators)

Operates larry car to charge material into coke oven. May operate skip hoists, scales, record data, etc.

#### Lidman AA-02020

(SOC 8618: Helpers; machine operators and tenders,

assorted materials)

Removes and replaces coke oven lids in the preparation of the ovens for pushing and charging.

#### Pusher-operator AA-03750

(SOC 7529: Miscellaneous metalworking and plastic working machine operators)

Operates pusher machine to push coke from ovens and to level coal charge.

#### Wharfman AA-06150

(SOC 8726: Freight, stock, and material movers, not elsewhere classified)

Operates wharf gates to feed coke onto cars or belts. Quenches hot spots in coke.

### Blast Furnaces

#### Keeper AB-01940

(SOC 7759: Miscellaneous handworking occupations)

Directs and performs work to prepare for casting and flushing a blast furnace.

#### **Keeper helper AB-01945**

(SOC 862: Helpers; fabricators and inspectors)

Assists with the blast furnace operations by repairing and maintaining iron runners, gates, and spouts.

#### **Larryman AB-0197091**

(SOC 8318: Industrial truck and tractor equipment operators)

Loads and operates larry car supplying material to blast furnaces. May operate skip hoists, scales, record data, etc.

#### **Stock unloader AB-06030**

(SOC 8726: Freight, stock, and material movers, not elsewhere classified)

Unloads materials or products from railroad cars, trucks, barges, or boats. May use auxiliary equipment, such as vibrators, spuds, conveyors, pumps, etc.

### **Electric Furnaces**

#### **First helpers AE-01830**

(SOC 7544: Heating equipment operators and tenders)

Operates electric arc furnace to produce steel.

### **Basic Oxygen Furnaces**

#### **Furnace operator AJ-03500**

(SOC 7544: Heating equipment operators and tenders)

Operates oxygen furnace to produce steel.

#### **Furnaceman, first AJ-01630**

(SOC 7544: Heating equipment operators and tenders)

Signals oxygen furnace operator in positioning furnace for charging, slag-off, tapping, and securing tests.

#### **Ladle crane AJ-00940**

(SOC 8315: Crane and tower operators)

Operates an overhead traveling ladle crane in transporting molten metal for teeming ingots.

#### **Ladle liner AJ-02040**

(SOC 6179: Mechanics and repairers, not elsewhere classified)

Lines and relines ladles used in basic oxygen furnaces.

#### **Steel pourer, first AJ-04550**

(SOC 7759: Miscellaneous handworking occupations)

Pours or directs the pouring of steel into ingot moulds.

#### **Utilities attendant AJ-06650**

(SOC 614: Machinery maintenance occupations)

Directs and operates Q-BOP gas cleaning, water pumping, and cooling facilities.

### **Bloom, Slab, and Billet Mills**

#### **Blooming mill roller AG-04960**

(SOC 7516: Rolling machine operators and tenders)

Rolls or directs the rolling and processing of ingots into slabs and blooms; dismantles, adjusts, and maintains mill and processing equipment.

#### **Hooker AH-01860**

(SOC 8319: Miscellaneous material moving equipment operators)

Performs crane hooking, following, and unhooking.

#### **Pit recorder AG-04750**

(SOC 4752: Production and planning clerks)

Maintains records of all steel charged into and drawn from soaking pits.

#### **Scarfer AH-05080**

(SOC 7759: Miscellaneous handworking occupations)

Burns out defects on billets, slabs and blooms with hand scarfing torch. Checks and marks surface defects.

#### **Soaking-pit craneman AG-00990**

(SOC 8315: Crane and tower operators)

Operates overhead crane in charging and drawing ingots at soaking pits.

#### **Soaking-pit heater AG-01800**

(SOC 7544: Heating equipment operators and tenders)

Heats ingots to specified temperatures by controlling a furnace in a soaking pit.

### **Continuous Casting Mills**

#### **Continuous billet or slab caster AK-00500**

(SOC 7342: Molding and casting machine operators)

Directs and works with casting crew in the operation of a multistrand billet casting machine (billet caster) or a single-

strand slab casting machine (slab caster).

#### **Ladle and metal transfer controlman AK-06620**

(SOC 8319: Miscellaneous material moving equipment operators)

Controls the flow of molten metal from ladle to tundish (ladle controlman) or controls molten flow from tundish to continuous casting process (metal transfer controlman).

#### **Run out operator AK-06630**

(SOC 7516: Rolling machine operators and tenders)

Sets up and operates straightening rolls and cutoff unit unit to cut billets to specified lengths.

#### **Strand caster AK-06610**

(SOC 7342: Molding and casting machine operators)

Sets up and operates a single strand on a multistrand billet casting machine to cast molten steel into desired shape.

### **Continuous Hot-Strip Mills**

#### **Coil bander BA-00190**

(SOC 7516: Rolling machine operators and tenders)

Wire-ties or bands coils from discharge end of coiling machine on continuous hot-strip mill.

#### **Coiler BA-00780**

(SOC 7516: Rolling machine operators and tenders)

Operates controls to coil hot strip and operates piling mechanism in piling flats.

#### **Rougher BA-04990**

(SOC 7516: Rolling machine operators and tenders)

Directs and assists in setting up and operating a roughing roll train in breaking down slabs prior to delivery to finishing roll train.

#### **Strip-mill cranesman BA-00970**

(SOC 8315: Crane and tower operators)

Operates electric overhead traveling crane to provide service for mill crews, maintenance crews, finishing department, and service shops in such work as changing of rolls, removal of cobbles, and handling of machines, equipment parts, and construction material in maintenance, installation, and repair. This excludes cranes on which product handling is the predominant work.

#### **Tractor operator BD-04170**

(SOC 8318: Industrial truck and tractor equipment operators)

Operates a 3- or 4-wheel tractor equipped with fork, bucket, ram, blade, winch, underslung cradle, or other attachments to transport or tow trailers, tools, material, or equipment.

### **Cold Strip and Sheet Mills**

#### **Assistant tandem mill roller BD-04970**

(SOC 7316: Rolling machine setup operators)

Assists roller in the direction and rolling of cold steel by maintaining proper speed, uniform gauge and shape at end of cold reducing mill.

#### **Coil feeder BF-01450**

(SOC 7314: Punching and shearing-machine setup operators)

Charges coils and operates the uncoiler processor unit during the shearing operation on flying shears.

#### **Continuous annealing line operator BE-03310**

(SOC 7544: Heating equipment operators and tenders)

Operates a continuous annealing line in annealing alloy or carbon steel strip.

#### **Strip inspector BF-01910**

(SOC 6881: Precision inspector, tester, and grader)

Checks thickness, width, length, camber, flatness, surface defects, edge defects, etc., on all material uncoiled and recoiled on the coil house units and makes disposition of material.

#### **Tandem mill roller BD-04960**

(SOC 7516: Rolling machine operators and tenders)

Rolls or directs the rolling and processing of steel to specification.

### **Tube Finishing**

#### **Cut-off machine operator FH-03010**

(SOC 7314: Punching and shearing-machine setup operators)

Operates lathe or roll-type machine to cut off, chamfer, trim, bevel, or cut to length.

#### **Straightener FH-05610**

(SOC 7516: Rolling machine operators and tenders)

Sets up and operates straightening machine and makes necessary machine adjustments to properly straighten pipe.



## Rod and Wire Mills

### Wire drawer (continuous machine) GA-01150

(SOC 7515: Extruding and drawing machine operators and

tenders)

Operates one or more continuous wire-drawing machines to draw wire.

## Part II. All Works or Departments

### Maintenance

#### Automobile repairman 04860

(SOC 611: Vehicle and mobile equipment mechanics and repairers)

Makes all necessary repairs, adjustments, and installations to all trucks and other gasoline-powered equipment used throughout the plant.

#### Boilermaker 02140

(SOC 6814: Boilermakers)

Lays out, fabricates, assembles, erects, or makes repairs for all types of structural, boiler, and plate work.

#### Bricklayer 00360

(SOC 6412: Brickmasons)

Lays brick and performs masonry work in plant maintenance and construction.

#### Carpenter 00470

(SOC 6422: Carpenters)

Performs any type of carpentry work in the maintenance and construction of mill and office buildings and equipment.

#### Electrician (shop) 01300

(SOC 6432: Electricians)

Inspects, tests, dismantles, and makes mechanical and electrical repairs to all types of electrical equipment within the plant.

#### Electrician (wireman) 01310

(SOC 6433: Electrical power installers and repairers)

Works on high tension lines which are 440 volts or more. May also inspect, repair, install, and wire electrical apparatus, devices, and circuits of other voltages.

#### Electronic repairman 06600

(SOC 6153: Electrical and electronic repairers, commercial and industrial equipment)

Installs, repairs, constructs, adjusts, modifies, and services all types of electronic equipment.

#### Instrument repairman 04840

(SOC 6175: Mechanical controls valve repairer)

Installs, repairs, calibrates, tests, and adjusts any type of integrating, indicating, or graphic electrical or mechanical instrument.

#### Ironworker 02140

(SOC 7314: Punching and shearing machine setup operators)

(SOC 7714: Welders and cutters)

Lays out, fabricates, assembles, erects, or makes repairs for all types of structural and plate work; performs all kinds of welding; dismantles, erects, or moves heavy equipment and structures in plant maintenance or construction.

#### Machinist 02100

(SOC 6813: Machinists)

Sets up and operates all types of machine tools and performs all types of layout, fitting, and assembly work.

#### Mechanical and hydraulic repairman 04880

(SOC 6179: Mechanics and repairers, not elsewhere classified)

Inspects, dismantles, assembles, installs, aligns and repairs all mechanical equipment including E.O.T. (electronic overhead track) cranes.

#### Millwright 02530

(SOC 6178: Millwrights)

Inspects, repairs, replaces, installs, adjusts, and maintains all mechanical equipment in major producing departments or in an assigned area.

#### Millwright helper 02535

(SOC 8637: Helpers; miscellaneous mechanics and repairers)

Assists millwright in inspecting, repairing, replacing, installing, adjusting, and maintaining all mechanical equipment in major producing departments or in an assigned area.

#### Mobile equipment mechanic 06660

(SOC 611: Vehicle and mobile equipment mechanics and repairers)

Inspects, tests, adjusts, dismantles, and replaces unit assemblies or parts; makes complete repairs to gasoline, electric, and diesel-powered equipment.

**Motor inspector 01900**

(SOC 6152: Electric motor transformer and related repairers)

Inspects, repairs, replaces, installs, adjusts, and maintains electrical motors and related controls within the plant or in designated areas.

**Painter 04330**

(SOC 6442: Painters (construction and maintenance))

Performs interior and exterior hand and spray painting for the maintenance and construction of mill and office buildings.

**Pipefitter 01570**

(SOC 645: Plumbers, pipefitters, and steamfitters)

Lays out, installs, maintains, and repairs all types of pipelines, fittings, and fixtures in plant maintenance and construction.

**Rigger 04930**

(SOC 6177: Riggers)

Dismantles, erects, and moves all types of heavy equipment and structures in plant maintenance and construction.

**Roll turner 06010**

(SOC 7512: Lathe and turning machine operators and tenders)

Operates roll lathe for turning all types of new and used iron, steel, and alloy rolls to finished size, contour, and surface for rolling any shape or flat section.

**Systems repairman 06600**

(SOC 6153: Electrical and electronic repairers, commercial and industrial equipment)

Installs, repairs, constructs, adjusts, modifies and services all types of electronic equipment and any type of integrating, indicating, or graphic electrical or mechanical instrument.

**Welder 06120**

(SOC 7714: Welders and cutters)

Performs all kinds of welding, brazing, and cutting on any type of metal.

**General Labor**

**Janitor 01930**

(SOC 5244: Janitors and cleaners) Cleans offices, washhouses, sanitary stations, etc.

**Laborer 01950**

(SOC 8769: Manual occupations, not elsewhere classified)

Performs general laborer work in or about the plant.

**Transportation and Yard**

**Locomotive craneman 00930**

(SOC 8315: Crane and tower operators)

Operates any type of mobile crane to handle or transport tools, materials, or equipment.

**Locomotive engineer (general) 01350**

(SOC 8232: Locomotive operating occupations)

Operates a standard gauge diesel electric locomotive in general plant switching to move freight cars on sidings in the plant and on various tracks in the plant area.

# Industry Wage Survey Bulletins

The most recent reports providing occupational wage data for industries currently included in the Bureau's program of industry wage surveys are listed below. Bulletins still in print are for sale from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or from the Bureau of Labor Statistics, Publications Sales

## Manufacturing

Basic Iron and Steel, 1988, BLS Bulletin 2346.  
Cigarette Manufacturing, 1986. BLS Bulletin 2276.  
\$1.25\*  
Corrugated and Solid Fiber Boxes, 1987. BLS Bulletin 2315. \$3.50. GPO Stock No. 029-001-02986-1  
Grain Mill Products, 1987. BLS Bulletin 2325.  
\$4.50. GPO Stock No. 029-001-02996-9.  
Hosiery Manufacturing, 1987. BLS Bulletin 2321.  
\$3. GPO Stock No. 029-001-02987-0.  
Industrial Chemicals, 1986. BLS Bulletin 2287. \$2.50\*  
Iron and Steel Foundries, 1986. BLS Bulletin 2292.  
\$5.50. GPO Stock No. 029-001-02963-2.  
Machinery Manufacturing, 1983. BLS Bulletin 2229. \$3.50\*  
Meat Products, 1984. BLS Bulletin 2247. \$6\*  
Men's and Boys' Shirts and Nightwear, 1987.  
BLS Bulletin 2304. \$3.25\*  
Men's and Boys' Suits and Coats, 1984.  
BLS Bulletin 2230. \$2.25\*  
Men's and Women's Footwear, 1986. BLS Bulletin 2291. \$3.50\*  
Millwork, 1984. BLS Bulletin 2244. \$2\*  
Motor Vehicles and Parts, 1983. BLS Bulletin 2223. \$4.75\*  
Petroleum Refining, 1988. BLS Bulletin 2243.  
Pressed or Blown Glass and Glassware, 1986.  
BLS Bulletin 2286. \$3\*  
Pulp, Paper, and Paperboard Mills, 1987. BLS Bulletin 2324.  
\$5.50. GPO Stock No. 029-001-02993-4  
Shipbuilding and Repairing, 1986. BLS Bulletin 2295.

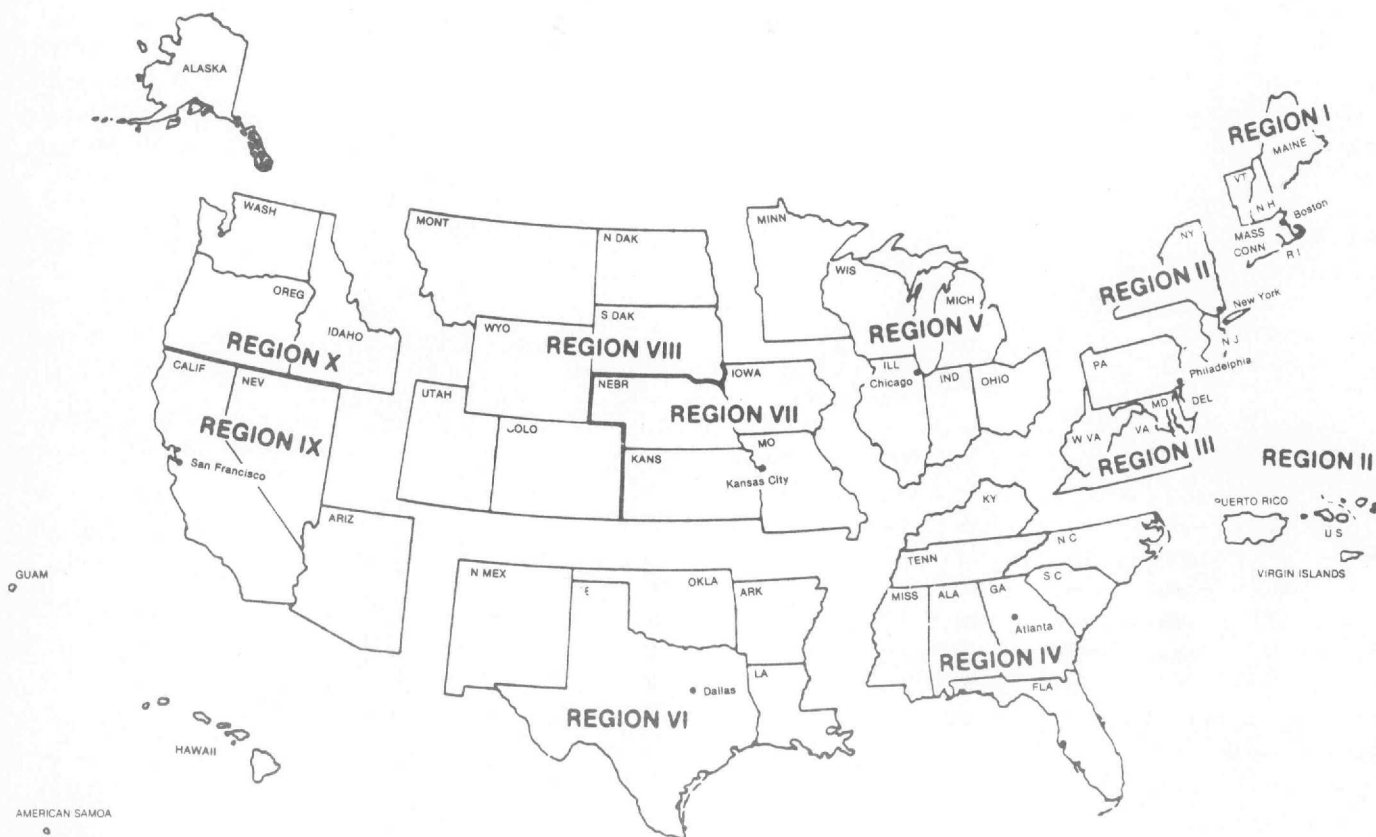
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