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Industry Wage Survey: Petroleum Refining, September 1988



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Preface

This bulletin summarizes the results of a Bureau of Labor Statistics survey of occupational earnings and employee benefits in the petroleum refining industry in September 1988. A similar survey was conducted in June 1985.

Separate releases were issued earlier for eight regions of industry concentration. (See tables 8-15 for these data.) Copies of these reports 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. Jonathan W. Kelinson of the Division of Occupational Pay and Employee Benefit Levels analyzed the survey findings and Maggie L. Williams

of the same division prepared the tabulations. 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 for the survey 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 copies.

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Contents

	<i>Page</i>
Earnings	1
Benefits	2
Industry characteristics	2
Tables:	
Average hourly earnings:	
1. By selected characteristics	4
Earnings distributions:	
2. All establishments	5
Occupational averages:	
3. All establishments	7
4. By type of area	10
5. By size of establishment	16
6. By labor-management contract coverage	22
Occupational earnings distributions:	
7. United States	28
8. East Coast	30
9. Western Pennsylvania-West Virginia	31
10. Midwest I	32
11. Midwest II	33
12. Texas-Louisiana Gulf Coast	34
13. Texas Inland-North Louisiana-Arkansas	35
14. Rocky Mountain	36
15. West Coast	37
Establishment practices and employee benefits:	
16. Method of wage payment	38
17. Scheduled weekly hours	38
18. Shift differential practices	39
19. Paid holidays	39
20. Paid vacations	40
21. Health, insurance, and retirement plans	42
22. Health plan participation	43
23. Other selected benefits	44
Appendixes:	
A. Scope and method of survey	45
B. Occupational descriptions	49

Petroleum Refining

September 1988

Earnings

Straight-time hourly earnings of the 43,958 production and related workers in the Nation's petroleum refineries averaged \$14.89 an hour in September 1988 (table 1).¹ Nearly four-fifths of these workers, mostly men, earned between \$14 and \$16 an hour (table 2). The prevalence of single-rate pay structures (which covered four-fifths of the industry's work force), the high degree of unionization (about nine-tenths of the work force), and the use of highly sophisticated machinery (which limits the skill range of the workers) all contributed to this concentrated earnings range. The industry's index of wage dispersion, a statistical measure of such variation, was 6, one of the lowest found in industries included in the Bureau's industry wage survey program.²

Average pay in refineries increased 5 percent since June 1985, the last time a similar survey was conducted.³ This compares with a 12-percent rise in the wage and salary component of the Bureau's Employment Cost Index for all non-durable goods manufacturing industries over the same 39-month period. Concurrently, refinery employment fell 14 percent, a drop of 7,245 workers.

These trends reflect, in part, the oversupply of oil in world markets, the declining price of oil, and changes in collective bargaining agreements negotiated by the industry's dominant labor union — the Oil, Chemical and Atomic Workers International Union, an AFL-CIO affiliate.⁴ Despite plant closings and a 3-percent reduction in average refinery employment, industry output increased 7 percent from 1985 to 1987, the latest year for which data are available. These changes translate into a 16-percent increase in output per employee

¹ Earnings data exclude premium pay for overtime and for work on weekends, holidays, and late shifts. See appendix A for the scope and method of the survey, for definitions of terms used in this report, and for definitions of regions surveyed. This survey excluded establishments employing fewer than 100 workers. See appendix B for occupational descriptions.

² The index of wage dispersion is calculated for an industry by dividing the difference between the first and third quartiles of the earnings distribution by the median (second quartile), then multiplying by 100. For a discussion of pay dispersion by industry and the relative ranking of industries by level of dispersion, see Carl Barsky and Martin E. Personick, "Measuring Wage Dispersion: Pay Ranges Reflect Industry Traits," *Monthly Labor Review*, April 1981, pp. 35-41.

³ See *Industry Wage Survey: Petroleum Refining, June 1985*, Bulletin 2255, for an account of the earlier survey.

⁴ For an analysis of the collective bargaining issues and an account of the terms of the final 1986 and 1988 agreements, see the following issues of the BLS periodical *Current Wage Developments*: February 1986, p. 1; March 1986, pp. 6-7; and March 1988, pp. 39-40.

hour⁵—about double the 8-percent rise in output per employee hour reported for all manufacturing industries combined.⁶

Wage rates reported for September 1988 are straight-time hourly earnings, incorporating the general wage-change provisions of collective bargaining agreements negotiated in 1986 and 1988. Lump-sum payments to workers that were part of these settlements are not included in the straight-time earnings reported. The terms of the pattern-setting 1986 agreement between the American Oil Co. and the Oil, Chemical and Atomic Workers International Union (OCAW) included a \$1,000 lump-sum payment in April and a 2-percent increase in hourly pay effective January 1987. The 1988 prototype accord between OCAW and eight refiners provided a lump-sum payment of \$900 plus an across-the-board increase of 30 cents per hour in February. Also in the contract, but not reported in the survey data for September 1988, is a 3-percent wage increase effective February 1989.

Twenty-seven occupations, accounting for about four-fifths of the production work force, were selected to represent the wage structure and skill range of production workers in refineries (tables 3 and 7). Among these jobs, average hourly earnings ranged from \$11.72 for janitors to \$16.09 for chief operators of stills. Assistant operators, who collaborate with chief operators to maintain stills, constituted the largest occupational group; the 10,425 incumbents averaged \$15.08 an hour.

Regional pay levels varied little, falling within 3 percent of the national average for six of the eight regions studied separately. Average pay in the Texas Inland-North Louisiana-Arkansas region was 6 percent less than the U.S. average, while in Western Pennsylvania-West Virginia, average pay was 10 percent below the nationwide level.

Industrywide pay averages also varied little according to such factors as community or establishment size and union status (table 1). For example, the pay of workers in metropolitan areas and of those employed in larger refineries (those with at least 250 workers) was about 5 percent above that of their counterparts in nonmetropolitan areas or smaller facilities. Average hourly pay in establishments where a majority of the workers were covered by labor-management agreements was 2 percent above the average for workers in

⁵ For detailed data on industry productivity, see *Productivity Measures for Selected Industries and Government Services*, Bulletin 2322 (Bureau of Labor Statistics, 1989), p. 79.

⁶ *Monthly Labor Review*, September 1989, p. 98.

refineries where union contracts covered none or a minority of the workers. Similar patterns were also observed when comparisons were limited to specific occupations (tables 4, 5, and 6).

Hourly averages for individual occupations were typically highest in the East Coast and lowest in the Western Pennsylvania-West Virginia and Texas Inland-North Louisiana-Arkansas regions (tables 8-15). Coincidentally, during the 1985-88 period, the Texas Inland-North Louisiana-Arkansas region recorded the largest advance in earnings (10 percent) and the smallest employment decline (1 percent) among the eight regions. In the remaining seven regions, average hourly pay rose between 4 and 7 percent from June 1985 to September 1988, while employment fell between 11 and 21 percent.

Benefits

Paid holiday provisions, typically 10 days annually, applied to all production workers in the industry (table 19). About three-tenths of those in the East Coast and Western Pennsylvania-West Virginia regions received 11 holidays. All refineries studied also provided paid vacations to their production workers after qualifying periods of service (table 20). Typically, workers received 2 weeks of vacation pay after 1 year of service, 3 weeks after 5 years, 4 weeks after 10 years, 5 weeks after 20 years, and 6 weeks after 30 or more years of service.

All production workers were in refineries providing at least part of the cost of life insurance as well as sickness and accident insurance or sick leave, typically in the form of sick leave plans providing full pay with no waiting period (table 21). About four-fifths of the life insurance plans were provided entirely at the employer's expense. At least two-fifths of the workers in each region were protected from lost income due to long-term disability; nationwide, coverage was just under three-fifths.

Hospitalization, surgical, and medical insurance plans, usually jointly paid by employers and employees, were offered to all workers in seven regions, with nearly all workers in the West Coast region provided coverage. Membership in a health maintenance organization (HMO) was available to three-fifths of the workers nationwide. However, health care coverage through HMO's varied considerably by region—from seven-eighths in Midwest I to no workers in Western Pennsylvania-West Virginia. Dental insurance plans and programs for treating alcohol and drug abuse were extended to nearly all production workers. Regionally, dental care covered at least nine-tenths of the workers in seven regions, and about seven-eighths in Western Pennsylvania-West Virginia. Alcohol and drug abuse treatment coverage varied by region—from all workers in four regions to about seven-tenths in Western Pennsylvania-West Virginia. Vision care and hearing care programs covered one-third and just over one-fourth of the workers, respectively.

Health plan participation by employees, as opposed to

eligibility, was studied for the first time in this industry in 1988 (table 22). Among the six health plans studied, dental care and alcohol and drug abuse treatment plans had the highest participation rates, typically at least seven-eighths of each region's work force. Participation in hospitalization, surgical, and medical plans constituted about four-fifths of the nationwide employment, while one-fifth opted for HMO membership. About one-fourth of the workers participated in plans providing vision and hearing care coverage.

All production workers were in refineries providing at least partial pay for time off to attend the funeral of specified family members or to serve on a jury (table 23). Technological severance pay, providing payments to workers permanently separated from work through no fault of their own, applied to about three-fourths of the workers nationally, but covered as few as one-third of the workers in the East Coast region. Formal provisions for automatic wage adjustments due to changes in the cost of living were reported in only one region; these plans, tied to changes in the BLS Consumer Price Index, covered nearly one-fifth of the workers in the Texas-Louisiana Gulf Coast region.

Refineries employing about seven-eighths of the workers provided thrift or savings plans to which the employer made contributions beyond administrative costs. Nearly nine-tenths of the workers were in establishments which provided protective garments, or a monetary allowance for them, to production workers required to wear such clothing.

Industry characteristics

Petroleum refineries are engaged primarily in producing gasoline, kerosene, distillate fuel oil, residual fuel oil, lubricants, and other products from crude petroleum and its fractionation products. Petroleum is refined through the straight distillation of crude oil or the redistillation of unfinished petroleum derivatives, by cracking, or by other processes.

Of the nearly 44,000 production and related workers surveyed in September 1988, nearly all were employed by refineries primarily producing gasoline. About 5 percent were in refineries which principally yielded distillate fuel oil, lubricants, or other products. In Western Pennsylvania-West Virginia, however, lubricating oil was the principal output. Nearly one-half of the Nation's refinery workers were in facilities which also processed petrochemicals (chemical products derived from hydrocarbon sources such as petroleum and natural gas).

The 126 refineries within the scope of the survey (those with at least 100 workers) employed 43,958 production workers in September 1988. Two-fifths of this industry's work force, encompassing about one-fourth of the refineries, were in the Texas-Louisiana Gulf Coast region. The West Coast and Midwest I regions, each with about 15 percent of the workers, constituted the next largest centers of industry concentration. None of the remaining five regions accounted for as much as one-tenth of the total.

Five-sixths of the nationwide work force was located in metropolitan areas. Virtually all of the workers in the Texas-Louisiana Gulf Coast region were in metropolitan areas, compared to about one-fourth in Western Pennsylvania-West Virginia.

Refineries with at least 250 workers employed seven-eighths of the work force, nationwide; however, none of the refineries in the Rocky Mountain region employed as many as 250 workers. On average, refineries in the Texas-Louisiana Gulf Coast region employed just over 600 workers in June 1988 compared with about 125 workers in the typical Rocky Mountain facility. Average employment per facility declined 3 percent, nationally, since June 1985, but increased 8 percent in the Texas-Louisiana Gulf Coast region and 16 percent in the Texas Inland-North Louisiana-Arkansas region.

Skilled maintenance workers, *e.g.*, carpenters, electricians, and mechanics, accounted for about three-tenths of the production work force. Slightly over one-half of the production workers were in establishments with maintenance craft consolidation plans, which combine two or more crafts into a single job classification (table 23). Most plans call for workers who have attained journeyman status in one craft

to be trained in one or more additional maintenance trades, *e.g.*, an electrician who becomes a trained pipefitter.

Formal time-rated pay plans, typically single rates for specific occupations, applied to all refinery workers in seven regions (table 16). Nationally, range-of-rate pay plans, usually based on length of employee service, covered one-fifth of the production workers. In Texas Inland-North Louisiana-Arkansas, incentive pay plans which based employee compensation on individual piecework covered nearly one-tenth of the workers.

Refineries employing three-fourths of the production workers operated on fixed day-shift work schedules of 40 hours a week (table 17). Most of the remaining workers were on cyclical work schedules, often working one or more 48-hour weeks during a usual cycle.

Nearly one-half of the industry's work force was employed on rotating shifts in September 1988 (table 18). Employees on rotating shifts usually work day, evening, and night shifts on successive weeks. All workers on evening or night rotating shifts received a premium above fixed day-shift rates, typically 50 cents and \$1 per hour for evening- and night-shift work, respectively.

Table 1. Average hourly earnings: By selected characteristics

(Number of production workers and average straight-time hourly earnings,¹ in petroleum refineries, United States and regions,² September 1988)

Characteristic	United States		Regions															
			East Coast		Western Pennsylvania-West Virginia		Midwest I		Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	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
All production workers	43,958	\$14.89	3,361	\$15.16	1,438	\$13.42	6,735	\$15.00	3,641	\$14.40	17,727	\$15.24	2,586	\$13.99	1,363	\$14.80	7,107	\$14.68
Men	-	-	-	-	1,398	13.43	5,383	14.93	3,430	14.40	-	-	2,191	14.00	1,289	14.84	-	-
Women	-	-	-	-	40	12.88	-	-	211	14.33	-	-	-	-	74	14.05	-	-
Type of area:																		
Metropolitan area ³	36,324	15.02	2,927	15.20	-	-	6,169	15.01	1,537	14.54	17,425	15.26	922	13.81	660	14.91	6,295	14.65
Nonmetropolitan area	7,634	14.29	-	-	1,049	13.32	-	-	2,104	14.29	-	-	1,664	14.08	703	14.70	-	-
Size of establishment:																		
100-249 workers	6,044	14.29	-	-	-	-	-	-	1,280	14.34	889	14.81	-	-	1,363	14.80	-	-
250 workers or more	37,914	14.98	3,221	15.22	835	13.61	6,248	15.05	2,361	14.43	16,838	15.26	2,020	14.11	-	-	6,391	14.74
Labor-management contract coverage:																		
Establishments with—																		
Majority of workers covered	39,225	14.92	3,108	15.14	1,438	13.42	5,603	14.96	3,117	14.40	15,911	15.30	2,175	14.04	1,150	14.92	6,723	14.72
None or minority of workers covered ..	4,733	14.64	-	-	-	-	1,132	15.22	-	-	1,816	14.67	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ 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 that data did not meet publication criteria.

Table 2. Earnings distribution: All establishments

(Percent distribution of production workers by straight-time hourly earnings,¹ petroleum refineries, United States and regions,² September 1988)

Hourly earnings	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
Number of workers	43,958	3,361	1,438	6,735	3,641	17,727	2,586	1,363	7,107
Average (mean) hourly earnings ³	\$14.89	\$15.16	\$13.42	\$15.00	\$14.40	\$15.24	\$13.99	\$14.80	\$14.68
Median ³	15.25	15.60	13.65	15.24	14.91	15.30	14.32	15.13	15.31
Middle range: ³									
First quartile	14.58	15.20	13.24	14.61	14.08	15.17	13.33	14.69	14.74
Third quartile	15.46	15.86	14.02	15.50	15.10	15.49	14.93	15.32	15.44
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under \$9.00 .....	.7	3.4	1.6	-	1.8	.1	1.5	.7	.7
\$9.00 and under \$9.25 .....	.1	-	.1	.1	.2	-	.5	-	-
\$9.25 and under \$9.50 .....	.6	1.5	.8	.3	.2	.3	-	.4	2.0
\$9.50 and under \$9.75 .....	.1	-	-	-	-	-	-	.2	.4
\$9.75 and under \$10.00 .....	.2	-	.6	(⁴)	-	(⁴)	-	.9	.8
\$10.00 and under \$10.25 .....	.2	.2	.1	.2	.2	.1	.9	.1	(⁴)
\$10.25 and under \$10.50 .....	.4	(⁴)	.5	.7	.8	.2	.1	.2	1.0
\$10.50 and under \$10.75 .....	.3	.4	-	.2	.1	.2	.3	.5	1.0
\$10.75 and under \$11.00 .....	.1	.2	1.6	(⁴)	.1	.1	.3	.1	-
\$11.00 and under \$11.25 .....	.3	-	-	.3	.4	.2	(⁴)	.3	.6
\$11.25 and under \$11.50 .....	.3	.5	3.1	-	.1	.1	.1	.7	.5
\$11.50 and under \$11.75 .....	.6	-	.3	.5	.1	.2	4.3	.9	1.1
\$11.75 and under \$12.00 .....	.4	(⁴)	-	.6	.1	.5	.7	.4	.5
\$12.00 and under \$12.25 .....	.6	-	-	.6	1.9	.4	.1	.1	1.0
\$12.25 and under \$12.50 .....	.3	.4	3.5	-	.4	(⁴)	1.3	.5	.3
\$12.50 and under \$12.75 .....	.6	-	.1	.3	.1	.2	5.3	.3	1.1
\$12.75 and under \$13.00 .....	.7	-	2.8	.4	2.3	.6	1.2	.2	.5
\$13.00 and under \$13.25	1.3	.4	11.2	(⁴)	1.0	1.0	3.8	.4	.8
\$13.25 and under \$13.50	1.7	(⁴)	11.1	2.8	1.3	.5	6.8	1.0	1.0
\$13.50 and under \$13.75	1.8	1.3	19.0	.7	2.3	1.1	2.4	1.5	1.0
\$13.75 and under \$14.00	3.9	.6	18.4	1.4	7.9	3.9	8.2	.7	1.6
\$14.00 and under \$14.25	3.4	.1	10.4	4.1	9.3	.9	11.0	7.2	2.4
\$14.25 and under \$14.50	4.7	1.7	8.2	10.1	10.3	1.6	8.5	1.7	4.2
\$14.50 and under \$14.75	4.4	2.9	3.0	2.8	7.7	3.0	12.7	7.4	5.1
\$14.75 and under \$15.00	5.7	3.7	2.4	3.8	14.9	2.4	5.6	19.4	10.0

See footnotes at end of table.

Table 2. Earnings distribution: All establishments—Continued

(Percent distribution of production workers by straight-time hourly earnings,¹ petroleum refineries, United States and regions,² September 1988)

Hourly earnings	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana- Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
\$15.00 and under \$15.25	16.6	12.0	0.8	20.7	25.7	19.0	11.9	°16.4	9.3
\$15.25 and under \$15.50	27.6	9.7	-	23.5	6.8	40.8	3.6	18.1	34.0
\$15.50 and under \$15.75	8.6	24.1	-	8.5	3.0	9.2	5.7	12.4	4.9
\$15.75 and under \$16.00	6.9	20.0	.6	5.9	.8	7.8	1.7	.8	7.0
\$16.00 and under \$16.25	3.0	4.7	-	3.4	.1	3.7	1.5	4.3	2.7
\$16.25 and under \$16.50	2.8	8.9	-	7.5	-	.8	-	-	4.0
\$16.50 and under \$16.75 .....	.2	-	-	-	-	.1	-	2.1	.4
\$16.75 and under \$17.00 .....	.2	3.1	-	-	(*)	(*)	-	-	-
\$17.00 and under \$17.25 .....	.1	-	-	(*)	-	.1	-	-	(*)
\$17.25 and under \$17.50	(*)	-	-	-	-	-	-	-	(*)
\$17.50 and under \$17.75 .....	.1	-	-	.4	-	-	-	.1	.2
\$17.75 and under \$18.00	(*)	.2	-	-	.2	(*)	-	.1	-
\$18.00 and over .....	.4	-	-	.1	-	1.0	-	.1	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ See appendix A for definitions and methods used to compute means, medians, and middle ranges.

⁴ Less than 0.05 percent.

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

Table 3. Occupational averages: All establishments

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States		Regions															
			East Coast		Western Pennsylvania-West Virginia		Midwest I		Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	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
Maintenance																		
Boilermakers	546	\$15.35	33	\$15.52	-	-	-	-	28	\$14.92	231	\$15.27	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	28	14.92	-	-	-	-	-	-	-	-
Carpenters	355	15.19	36	15.52	10	\$13.28	57	\$15.10	20	14.81	123	15.27	16	\$14.80	-	-	92	\$15.35
Men	-	-	-	-	10	13.28	56	15.09	20	14.81	-	-	14	14.79	-	-	83	15.35
Electricians	1,103	15.36	121	15.57	24	13.76	123	15.33	53	14.92	483	15.47	70	14.75	15	\$15.31	214	15.52
Men	-	-	-	-	24	13.76	-	-	53	14.92	-	-	70	14.75	15	15.31	-	-
Helpers, maintenance trades	594	13.62	-	-	-	-	30	14.05	-	-	433	13.87	-	-	-	-	36	11.25
Men	-	-	-	-	-	-	28	14.05	-	-	-	-	-	-	-	-	-	-
Instrument repairers	1,283	15.36	130	15.69	17	13.74	157	15.24	78	15.13	589	15.47	63	14.62	31	15.20	218	15.40
Men	-	-	-	-	17	13.74	139	15.23	77	15.14	-	-	57	14.67	31	15.20	183	15.39
Women	-	-	-	-	-	-	-	-	-	-	-	-	6	14.13	-	-	-	-
Machinists	1,564	15.34	224	15.50	9	13.86	199	15.41	51	14.91	621	15.32	-	-	41	15.22	397	15.38
Men	-	-	-	-	9	13.86	164	15.25	49	14.91	-	-	-	-	41	15.22	-	-
Mechanics, general	4,829	15.28	199	15.72	59	13.77	937	15.30	377	14.82	2,498	15.40	64	14.08	311	15.01	384	15.34
Men	4,111	15.22	199	15.72	59	13.77	832	15.25	373	14.82	-	-	64	14.08	303	15.01	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	15.19	-	-
Mechanics, machinery	909	15.16	-	-	29	13.25	-	-	91	14.90	398	15.24	141	14.88	-	-	-	-
Men	-	-	-	-	29	13.25	-	-	88	14.89	-	-	-	-	-	-	-	-
Mechanics, motor vehicle	121	14.82	12	15.31	-	-	41	14.27	-	-	-	-	8	14.61	-	-	13	15.36
Men	-	-	12	15.31	-	-	41	14.27	-	-	-	-	7	14.81	-	-	13	15.36
Pipefitters	1,494	15.17	101	15.55	41	13.85	359	15.07	102	14.80	476	15.30	67	14.27	-	-	331	15.41
Men	-	-	-	-	41	13.85	348	15.07	97	14.80	-	-	62	14.29	-	-	-	-
Women	-	-	-	-	-	-	11	14.99	-	-	-	-	-	-	-	-	-	-
Welders, hand	716	15.20	102	15.56	31	13.65	79	15.06	68	15.07	231	15.32	57	14.71	-	-	148	15.40
Men	-	-	-	-	31	13.65	69	15.02	66	15.07	-	-	57	14.71	-	-	-	-
Processing																		
Assistant operators	10,425	15.08	755	15.58	36	14.01	1,712	15.27	1,161	14.59	4,123	15.19	555	14.43	330	14.80	1,753	15.00
Men	-	-	-	-	36	14.01	-	-	1,086	14.57	-	-	449	14.41	311	14.79	-	-
Women	-	-	-	-	-	-	-	-	75	14.89	-	-	-	-	19	15.09	-	-
Chief operators	5,142	16.09	480	16.30	173	14.22	594	16.01	287	15.23	2,333	16.49	292	15.51	233	15.75	750	15.83
Men	-	-	-	-	168	14.22	-	-	286	15.23	-	-	253	15.50	229	15.75	-	-
Chief operator's helpers	1,664	14.12	-	-	114	13.47	95	14.69	-	-	575	14.48	141	12.83	56	13.48	376	13.87
Men	1,355	14.11	-	-	113	13.47	71	14.61	-	-	-	-	126	12.95	50	13.73	320	13.92
Women	-	-	-	-	-	-	24	14.93	-	-	-	-	-	-	-	-	-	-
Compounders ³	133	14.88	-	-	32	13.71	-	-	22	15.20	33	15.58	-	-	-	-	-	-
Laborers	715	12.26	-	-	27	10.72	313	12.55	76	12.30	-	-	170	11.79	24	10.56	34	11.99
Men	618	12.31	-	-	27	10.72	272	12.52	69	12.37	-	-	156	11.83	21	10.79	-	-
Women	-	-	-	-	-	-	41	12.70	-	-	-	-	14	11.39	-	-	-	-

See footnotes at end of table.

Table 3. Occupational averages: All establishments—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States		Regions															
			East Coast		Western Pennsylvania-West Virginia		Midwest I		Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	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
Loaders, tank cars or trucks	369	\$14.27	-	-	14	\$13.53	40	\$14.84	90	\$14.05	96	\$15.31	83	\$12.90	8	\$14.09	38	\$14.93
Men	326	14.42	-	-	14	13.53	37	14.88	80	13.99	94	15.30	56	13.19	8	14.09	37	14.96
Women	39	13.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Package fillers, machine	81	14.05	-	-	43	13.70	-	-	-	-	-	-	-	-	-	-	-	-
Men	72	13.99	-	-	41	13.69	-	-	-	-	-	-	-	-	-	-	-	-
Pumpers	994	15.01	59	\$15.90	44	13.74	143	15.37	116	14.69	355	15.11	66	14.20	39	15.37	172	14.98
Men	790	15.01	55	15.91	42	13.73	119	15.22	112	14.69	-	-	47	14.11	38	15.39	91	15.16
Pumper's helpers	401	14.54	-	-	-	-	70	14.54	24	13.76	-	-	-	-	-	-	141	14.51
Men	326	14.56	-	-	-	-	70	14.54	24	13.76	-	-	-	-	-	-	-	-
Treaters, oils	131	14.35	-	-	-	-	-	-	44	13.48	-	-	19	14.13	-	-	-	-
Men	124	14.31	-	-	-	-	-	-	41	13.40	-	-	19	14.13	-	-	-	-
Women	7	14.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inspecting and testing																		
Routine testers, laboratory	1,741	14.68	194	15.15	-	-	239	14.63	156	14.36	763	15.03	123	14.10	59	14.10	153	13.90
Men	-	-	-	-	-	-	162	14.65	114	14.33	-	-	78	14.00	40	14.01	-	-
Women	-	-	-	-	-	-	-	-	42	14.43	-	-	-	-	19	14.31	-	-
Recording and control																		
Stock clerks	457	14.56	52	14.88	14	13.67	82	14.52	34	13.92	153	15.06	48	14.00	8	12.61	66	14.37
Men	-	-	-	-	14	13.67	67	14.48	33	13.92	-	-	47	13.99	7	12.93	64	14.36
Material movement																		
Truckdrivers	385	14.06	-	-	33	13.24	121	14.47	19	13.82	-	-	54	12.80	-	-	-	-
Men	-	-	-	-	33	13.24	-	-	19	13.82	-	-	54	12.80	-	-	-	-
Light truck	22	13.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medium truck	7	14.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy truck	62	14.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	14.02
Tractor-trailer	137	13.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power-truck operators	74	13.96	-	-	36	13.46	-	-	-	-	-	-	-	-	-	-	-	-
Men	70	13.97	-	-	34	13.48	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	57	13.73	-	-	36	13.46	-	-	-	-	-	-	-	-	-	-	-	-
Men	53	13.74	-	-	34	13.48	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 3. Occupational averages: All establishments—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States		Regions																
			East Coast		Western Pennsylvania–West Virginia		Midwest I		Midwest II		Texas–Louisiana Gulf Coast		Texas Inland–North Louisiana–Arkansas		Rocky Mountain		West Coast		
	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	
Custodial																			
Guards	226	\$12.91	41	\$13.73	-	-	-	-	11	\$11.61	133	\$13.66	-	-	-	-	-	-	
Men	-	-	-	-	-	-	-	-	10	11.51	-	-	-	-	-	-	-	-	
Guards I	206	12.79	37	13.57	-	-	-	-	7	11.01	133	13.66	-	-	-	-	-	-	
Men	-	-	-	-	-	-	-	-	7	11.01	-	-	-	-	-	-	-	-	
Guards II	16	14.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Janitors, porters, or cleaners	70	11.72	-	-	-	-	-	-	17	11.91	-	-	-	-	-	-	-	19	\$9.97
Men	-	-	-	-	-	-	-	-	17	11.91	-	-	-	-	-	-	-	16	9.62

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ Virtually all workers were men.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria. Overall occupation may include data for subclassifications not shown separately.

Table 4. Occupational averages: By type of area

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions									
					East Coast		Western Pennsylvania-West Virginia		Midwest I		Midwest II			
	Metropolitan areas ³		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Metropolitan areas		Nonmetropolitan areas	
	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
Maintenance														
Boilermakers	508	\$15.38	38	\$14.86	33	\$15.52	-	-	-	-	-	-	-	-
Men	-	-	37	14.86	-	-	-	-	-	-	-	-	-	-
Carpenters	310	15.28	45	14.54	36	15.52	6	\$13.03	56	\$15.09	-	-	20	\$14.81
Men	-	-	41	14.49	-	-	6	13.03	55	15.09	-	-	20	14.81
Electricians	958	15.46	145	14.73	115	15.57	20	13.71	109	15.34	-	-	35	14.81
Men	-	-	134	14.67	-	-	20	13.71	92	15.17	-	-	35	14.81
Helpers, maintenance trades	537	13.64	57	13.50	-	-	-	-	-	-	-	-	-	-
Men	-	-	49	13.50	-	-	-	-	-	-	-	-	-	-
Women	-	-	8	13.46	-	-	-	-	-	-	-	-	-	-
Instrument repairers	1,120	15.42	163	14.95	105	15.65	15	13.70	139	15.23	36	\$15.74	42	14.62
Men	-	-	148	14.91	-	-	15	13.70	134	15.23	35	15.76	42	14.62
Machinists	1,434	15.37	130	15.03	203	15.49	8	13.84	199	15.41	-	-	43	14.89
Men	-	-	128	15.03	-	-	8	13.84	164	15.25	-	-	41	14.88
Mechanics, general	4,101	15.33	728	15.00	-	-	-	-	889	15.30	176	14.66	-	-
Men	3,439	15.27	672	14.97	-	-	-	-	826	15.25	172	14.65	-	-
Mechanics, machinery	702	15.32	207	14.60	-	-	23	13.12	-	-	-	-	49	14.70
Men	-	-	183	14.51	-	-	23	13.12	-	-	-	-	49	14.70
Mechanics, motor vehicle	115	14.90	6	13.24	12	15.31	-	-	41	14.27	-	-	-	-
Men	-	-	-	-	12	15.31	-	-	41	14.27	-	-	-	-
Pipefitters	1,326	15.23	168	14.64	101	15.55	29	13.85	355	15.07	-	-	84	14.73
Men	-	-	161	14.63	-	-	29	13.85	344	15.07	-	-	81	14.74
Women	-	-	7	14.89	-	-	-	-	11	14.99	-	-	-	-
Welders, hand	592	15.30	124	14.71	102	15.56	19	13.46	61	15.01	-	-	39	14.91
Men	-	-	113	14.65	-	-	19	13.46	61	15.01	-	-	38	14.90
Processing														
Assistant operators	8,814	15.16	1,611	14.64	682	15.70	32	13.96	1,513	15.30	551	14.74	610	14.44
Men	-	-	1,364	14.58	-	-	32	13.96	1,206	15.26	501	14.73	585	14.43
Women	-	-	-	-	-	-	-	-	-	-	-	-	25	14.80
Chief operators	4,216	16.24	926	15.37	334	16.49	149	14.18	549	16.00	125	15.13	162	15.31
Men	-	-	852	15.33	-	-	144	14.18	-	-	125	15.13	161	15.31
Chief operator's helpers	1,101	14.37	563	13.61	-	-	74	13.18	-	-	-	-	-	-
Men	821	14.42	534	13.63	-	-	73	13.17	-	-	-	-	-	-
Women	-	-	29	13.35	-	-	-	-	-	-	-	-	-	-
Compounders ⁴	92	15.31	41	13.92	-	-	27	13.68	-	-	-	-	-	-
Laborers	476	12.64	239	11.50	-	-	16	9.16	313	12.55	-	-	48	11.56
Men	401	12.72	217	11.55	-	-	16	9.16	272	12.52	-	-	41	11.56
Women	-	-	22	11.01	-	-	-	-	41	12.70	-	-	-	-

See footnotes at end of table.

Table 4. Occupational averages: By type of area—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions									
					East Coast		Western Pennsylvania–West Virginia		Midwest I		Midwest II			
	Metropolitan areas ³		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Metropolitan areas		Nonmetropolitan areas	
	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
Loaders, tank cars or trucks	282	\$14.42	87	\$13.81	-	-	11	\$13.59	35	\$14.95	56	\$14.13	34	\$13.91
Men	239	14.65	87	13.81	-	-	11	13.59	-	-	46	14.05	34	13.91
Women	39	13.13	-	-	-	-	-	-	-	-	-	-	-	-
Package fillers, machine	44	14.35	37	13.68	-	-	-	-	-	-	-	-	-	-
Men	37	14.30	35	13.66	-	-	-	-	-	-	-	-	-	-
Pumpers	777	15.20	217	14.33	59	\$15.90	32	13.74	139	15.39	58	14.82	58	14.55
Men	578	15.26	212	14.33	55	15.91	31	13.72	115	15.23	56	14.81	56	14.57
Pumper's helpers	301	14.72	100	14.02	-	-	-	-	66	14.55	-	-	-	-
Men	-	-	94	14.00	-	-	-	-	66	14.55	-	-	-	-
Women	-	-	6	14.28	-	-	-	-	-	-	-	-	-	-
Treaters, oils	69	14.45	62	14.23	-	-	-	-	-	-	-	-	27	14.37
Men	65	14.40	59	14.22	-	-	-	-	-	-	-	-	24	14.36
Inspecting and testing														
Routine testers, laboratory	1,428	14.79	313	14.16	169	15.22	35	13.10	223	14.63	61	14.50	95	14.27
Men	-	-	210	13.99	-	-	-	-	156	14.65	38	14.45	76	14.28
Women	-	-	-	-	-	-	-	-	57	14.26	23	14.60	19	14.23
Recording and control														
Stock clerks	371	14.70	86	13.98	46	14.91	-	-	80	14.52	18	13.82	16	14.04
Men	-	-	81	14.02	-	-	-	-	65	14.47	17	13.80	16	14.04
Material movement														
Truckdrivers	313	14.19	72	13.50	-	-	25	13.20	121	14.47	-	-	19	13.82
Men	-	-	72	13.50	-	-	25	13.20	-	-	-	-	19	13.82
Light truck	-	-	12	13.53	-	-	-	-	-	-	-	-	-	-
Men	-	-	12	13.53	-	-	-	-	-	-	-	-	-	-
Heavy truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor-trailer	120	13.36	-	-	-	-	-	-	-	-	-	-	-	-
Power-truck operators	57	14.07	17	13.56	-	-	-	-	-	-	-	-	-	-
Men	53	14.10	17	13.56	-	-	-	-	-	-	-	-	-	-
Forklift	42	13.70	-	-	-	-	-	-	-	-	-	-	-	-
Men	38	13.70	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 4. Occupational averages: By type of area—Continued(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions									
					East Coast		Western Pennsylvania–West Virginia		Midwest I		Midwest II			
	Metropolitan areas ³		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Metropolitan areas		Nonmetropolitan areas	
	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
Custodial														
Guards	199	\$12.94	27	\$12.71	-	-	-	-	-	-	-	-	11	\$11.61
Men	-	-	26	12.72	-	-	-	-	-	-	-	-	10	11.51
Guards I	183	12.80	23	12.72	-	-	-	-	-	-	-	-	7	11.01
Men	-	-	23	12.72	-	-	-	-	-	-	-	-	7	11.01
Guards II	16	14.58	-	-	-	-	-	-	-	-	-	-	-	-
Janitors, porters, or cleaners	48	11.56	22	12.08	-	-	-	-	-	-	7	\$11.38	10	12.27
Men	-	-	16	12.30	-	-	-	-	-	-	7	11.38	10	12.27

See footnotes at end of table.

Table 4. Occupational averages: By type of area—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas				Rocky Mountain				West Coast	
	Metropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas	
	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
Maintenance												
Boilermakers	231	\$15.27	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Carpenters	121	15.30	-	-	11	\$14.60	-	-	-	-	88	\$15.35
Men	-	-	-	-	9	14.55	-	-	-	-	81	15.35
Electricians	483	15.47	-	-	58	14.66	-	-	-	-	210	15.52
Men	-	-	-	-	58	14.66	-	-	-	-	-	-
Helpers, maintenance trades	433	13.87	-	-	-	-	-	-	-	-	36	11.25
Men	-	-	-	-	-	-	-	-	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Instrument repairers	589	15.47	-	-	43	14.88	-	-	-	-	208	15.40
Men	-	-	-	-	41	14.87	-	-	-	-	173	15.39
Machinists	621	15.32	-	-	-	-	-	-	-	-	391	15.39
Men	-	-	-	-	-	-	-	-	-	-	-	-
Mechanics, general	2,466	15.42	-	-	-	-	178	\$15.06	133	\$14.94	202	15.38
Men	-	-	-	-	-	-	172	15.05	131	14.94	-	-
Mechanics, machinery	382	15.31	-	-	84	14.81	-	-	-	-	-	-
Men	-	-	-	-	81	14.79	-	-	-	-	-	-
Mechanics, motor vehicle	-	-	-	-	-	-	-	-	-	-	13	15.36
Men	-	-	-	-	-	-	-	-	-	-	13	15.36
Pipefitters	476	15.30	-	-	30	14.57	-	-	-	-	315	15.42
Men	-	-	-	-	28	14.55	-	-	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Welders, hand	231	15.32	-	-	-	-	-	-	-	-	140	15.41
Men	-	-	-	-	-	-	-	-	-	-	-	-
Processing												
Assistant operators	4,099	15.19	252	\$14.53	303	14.35	172	14.80	158	14.81	1,541	14.97
Men	-	-	-	-	289	14.36	162	14.78	149	14.80	-	-
Women	-	-	-	-	-	-	10	15.20	9	14.98	-	-
Chief operators	2,317	16.50	97	15.75	195	15.39	114	15.80	119	15.71	656	15.85
Men	-	-	-	-	184	15.39	111	15.80	118	15.71	-	-
Chief operator's helpers	521	14.59	61	12.05	80	13.43	-	-	47	13.22	216	14.08
Men	-	-	-	-	80	13.43	-	-	41	13.49	172	14.21
Women	-	-	-	-	-	-	-	-	-	-	-	-
Compounders ⁴	33	15.58	-	-	-	-	-	-	-	-	-	-
Laborers	-	-	-	-	-	-	-	-	20	9.98	34	11.99
Men	-	-	-	-	-	-	-	-	17	10.17	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 4. Occupational averages: By type of area—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas				Rocky Mountain				West Coast	
	Metropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas	
	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
Loaders, tank cars or trucks	96	\$15.31	-	-	31	\$13.67	-	-	6	\$14.11	38	\$14.93
Men	94	15.30	-	-	31	13.67	-	-	6	14.11	37	14.96
Women	-	-	-	-	-	-	-	-	-	-	-	-
Package fillers, machine	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Pumpers	299	15.39	35	\$13.97	31	14.47	-	-	28	15.33	164	14.95
Men	-	-	-	-	29	14.45	-	-	28	15.33	83	15.10
Pumper's helpers	-	-	-	-	-	-	-	-	-	-	105	14.62
Men	-	-	-	-	-	-	-	-	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Treaters, oils	-	-	-	-	19	14.13	-	-	-	-	-	-
Men	-	-	-	-	19	14.13	-	-	-	-	-	-
Inspecting and testing												
Routine testers, laboratory	737	15.08	63	14.16	60	14.04	33	\$14.53	26	13.56	123	13.49
Men	-	-	-	-	50	14.07	18	14.59	22	13.53	-	-
Women	-	-	-	-	-	-	15	14.46	-	-	-	-
Recording and control												
Stock clerks	149	15.10	-	-	35	14.28	-	-	6	11.77	60	14.38
Men	-	-	-	-	34	14.29	-	-	-	-	58	14.37
Material movement												
Truckdrivers	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Light truck	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Heavy truck	-	-	-	-	-	-	-	-	-	-	14	14.02
Tractor-trailer	-	-	-	-	-	-	-	-	-	-	-	-
Power-truck operators	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 4. Occupational averages: By type of area—Continued(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana- Arkansas				Rocky Mountain				West Coast	
	Metropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas	
	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
Custodial												
Guards	133	\$13.66	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Guards I	133	13.66	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Guards II	-	-	-	-	-	-	-	-	-	-	-	-
Janitors, porters, or cleaners	-	-	-	-	-	-	-	-	-	-	19	\$9.97
Men	-	-	-	-	-	-	-	-	-	-	16	9.62

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² For definitions of regions, see appendix A, table A-1, footnote 1.³ Metropolitan Statistical Areas as defined by the U.S. Office of Management and Budget through October 1984.⁴ Virtually all workers were men.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria. Overall occupation may include data for sub-classifications not shown separately.

Table 5. Occupational averages: By size of establishment

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions					
					East Coast		Western Pennsylvania-West Virginia		Midwest I	
	100-249 workers		250 workers or more		250 workers or more		250 workers or more		250 workers or more	
	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
Maintenance										
Boilermakers	-	-	539	\$15.35	33	\$15.52	-	-	-	-
Carpenters	27	\$14.65	328	15.23	36	15.52	7	\$13.47	48	\$15.11
Men	27	14.65	-	-	-	-	7	13.47	47	15.11
Electricians	83	15.16	1,020	15.38	121	15.57	20	13.98	112	15.36
Men	79	15.13	-	-	-	-	20	13.98	-	-
Helpers, maintenance trades	58	13.17	536	13.67	-	-	-	-	-	-
Men	56	13.15	-	-	-	-	-	-	-	-
Instrument repairers	134	15.12	1,149	15.39	130	15.69	12	14.30	144	15.26
Men	131	15.16	-	-	-	-	12	14.30	126	15.25
Machinists	52	14.98	1,512	15.35	224	15.50	-	-	199	15.41
Men	52	14.98	-	-	-	-	-	-	164	15.25
Mechanics, general	745	14.89	4,084	15.35	159	15.72	52	13.77	889	15.32
Men	737	14.89	3,374	15.30	159	15.72	52	13.77	784	15.27
Women	8	15.19	-	-	-	-	-	-	-	-
Mechanics, machinery	129	14.88	780	15.21	-	-	15	13.56	-	-
Men	129	14.88	-	-	-	-	15	13.56	-	-
Mechanics, motor vehicle	-	-	104	15.06	12	15.31	-	-	29	14.84
Men	-	-	-	-	12	15.31	-	-	29	14.84
Pipefitters	135	14.75	1,359	15.21	101	15.55	27	14.16	355	15.07
Men	132	14.78	-	-	-	-	27	14.16	344	15.07
Women	-	-	-	-	-	-	-	-	11	14.99
Welders, hand	94	14.89	622	15.24	102	15.56	20	14.01	63	15.07
Men	94	14.89	-	-	-	-	20	14.01	53	15.02
Processing										
Assistant operators	1,426	14.75	8,999	15.13	682	15.70	32	14.01	1,646	15.28
Men	1,345	14.76	-	-	-	-	32	14.01	-	-
Women	81	14.67	-	-	-	-	-	-	-	-
Chief operators	626	15.41	4,516	16.18	480	16.30	83	14.73	570	16.02
Men	621	15.42	-	-	-	-	79	14.74	-	-
Chief operator's helpers	341	13.38	1,323	14.31	-	-	55	13.75	-	-
Men	309	13.45	1,046	14.30	-	-	55	13.75	-	-
Women	32	12.66	-	-	-	-	-	-	-	-
Compounders ³	38	14.79	95	14.92	-	-	20	13.85	-	-
Laborers	53	11.59	662	12.31	-	-	-	-	313	12.55
Men	50	11.75	568	12.36	-	-	-	-	272	12.52
Women	-	-	-	-	-	-	-	-	41	12.70

See footnotes at end of table.

Table 5. Occupational averages: By size of establishment—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions					
					East Coast		Western Pennsylvania—West Virginia		Midwest I	
	100-249 workers		250 workers or more		250 workers or more		250 workers or more		250 workers or more	
	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
Loaders, tank cars or trucks	93	\$13.25	276	\$14.62	-	-	-	-	35	\$14.95
Men	75	13.64	251	14.66	-	-	-	-	-	-
Women	-	-	21	14.44	-	-	-	-	-	-
Package fillers, machine	-	-	67	14.17	-	-	-	-	-	-
Men	-	-	58	14.13	-	-	-	-	-	-
Pumpers	231	14.53	763	15.16	59	\$15.90	24	\$14.03	131	15.44
Men	223	14.55	567	15.19	55	15.91	23	14.01	107	15.29
Women	8	13.97	-	-	-	-	-	-	-	-
Pumper's helpers	72	14.73	329	14.50	-	-	-	-	66	14.55
Men	69	14.72	-	-	-	-	-	-	66	14.55
Treaters, oils	40	13.22	91	14.84	-	-	-	-	-	-
Men	40	13.22	84	14.84	-	-	-	-	-	-
Women	-	-	7	14.91	-	-	-	-	-	-
Inspecting and testing										
Routine testers, laboratory	325	14.08	1,416	14.82	187	15.24	-	-	224	14.65
Men	226	14.09	-	-	-	-	-	-	148	14.69
Women	99	14.05	-	-	-	-	-	-	-	-
Recording and control										
Stock clerks	53	13.35	404	14.72	52	14.88	-	-	76	14.52
Men	50	13.40	-	-	-	-	-	-	61	14.48
Material movement										
Truckdrivers	88	12.86	297	14.41	-	-	18	13.74	83	15.01
Men	88	12.86	-	-	-	-	18	13.74	-	-
Light truck	-	-	19	13.77	-	-	-	-	-	-
Medium truck	-	-	7	14.23	-	-	-	-	-	-
Heavy truck	-	-	61	15.01	-	-	-	-	-	-
Tractor-trailer	68	12.84	69	14.01	-	-	-	-	-	-
Men	68	12.84	-	-	-	-	-	-	-	-
Power-truck operators	-	-	52	14.26	-	-	-	-	-	-
Men	-	-	50	14.26	-	-	-	-	-	-
Forklift	-	-	35	14.04	-	-	-	-	-	-
Men	-	-	33	14.03	-	-	-	-	-	-

See footnotes at end of table.

Table 5. Occupational averages: By size of establishment—Continued(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions					
	100-249 workers		250 workers or more		East Coast		Western Pennsylvania- West Virginia		Midwest I	
	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
Custodial										
Guards	-	-	203	\$13.59	41	\$13.73	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-
Guards I	-	-	183	13.53	37	13.57	-	-	-	-
Guards II	-	-	16	14.58	-	-	-	-	-	-
Janitors, porters, or cleaners	18	\$10.74	52	12.06	-	-	-	-	-	-
Men	15	10.61	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 5. Occupational averages: By size of establishment—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Midwest II				Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	100-249 workers		250 workers or more		250 workers or more		250 workers or more		100-249 workers		250 workers or more	
	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
Maintenance												
Boilermakers	-	-	-	-	231	\$15.27	-	-	-	-	-	-
Carpenters	-	-	-	-	118	15.29	13	\$14.58	-	-	92	\$15.35
Men	-	-	-	-	-	-	11	14.53	-	-	83	15.35
Electricians	-	-	41	\$15.06	459	15.46	61	14.66	15	\$15.31	206	15.50
Men	-	-	41	15.06	-	-	61	14.66	15	15.31	-	-
Helpers, maintenance trades	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Instrument repairers	28	\$15.40	50	14.98	562	15.46	45	14.87	31	15.20	206	15.37
Men	28	15.40	49	14.98	-	-	42	14.86	31	15.20	171	15.36
Machinists	-	-	47	14.96	621	15.32	-	-	41	15.22	397	15.38
Men	-	-	45	14.96	-	-	-	-	41	15.22	-	-
Mechanics, general	225	14.78	152	14.88	2,464	15.42	36	14.58	311	15.01	-	-
Men	225	14.78	148	14.87	-	-	36	14.58	303	15.01	-	-
Women	-	-	-	-	-	-	-	-	8	15.19	-	-
Mechanics, machinery	-	-	75	15.01	352	15.28	126	14.83	-	-	-	-
Men	-	-	72	15.01	-	-	-	-	-	-	-	-
Mechanics, motor vehicle	-	-	-	-	-	-	-	-	-	-	13	15.36
Men	-	-	-	-	-	-	-	-	-	-	13	15.36
Pipefitters	-	-	83	14.91	440	15.27	34	14.57	-	-	319	15.40
Men	-	-	78	14.91	-	-	32	14.55	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Welders, hand	28	15.01	40	15.12	219	15.30	-	-	-	-	136	15.37
Men	28	15.01	38	15.11	-	-	-	-	-	-	-	-
Processing												
Assistant operators	447	14.33	714	14.75	3,915	15.19	409	14.43	330	14.80	1,601	14.95
Men	430	14.31	656	14.73	-	-	328	14.39	311	14.79	-	-
Women	17	14.68	-	-	-	-	-	-	19	15.09	-	-
Chief operators	110	14.96	177	15.40	2,261	16.51	239	15.40	233	15.75	706	15.81
Men	110	14.96	176	15.40	-	-	200	15.36	229	15.75	-	-
Chief operator's helpers	-	-	-	-	504	14.64	84	13.47	56	13.48	376	13.87
Men	-	-	-	-	-	-	82	13.45	50	13.73	320	13.92
Women	-	-	-	-	-	-	-	-	-	-	-	-
Compounders ³	-	-	12	15.15	33	15.58	-	-	-	-	-	-
Laborers	-	-	58	11.80	-	-	170	11.79	24	10.56	34	11.99
Men	-	-	51	11.83	-	-	156	11.83	21	10.79	-	-
Women	-	-	-	-	-	-	14	11.39	-	-	-	-

See footnotes at end of table.

Table 5. Occupational averages: By size of establishment—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Midwest II				Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	100-249 workers		250 workers or more		250 workers or more		250 workers or more		100-249 workers		250 workers or more	
	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
Loaders, tank cars or trucks	28	\$13.87	62	\$14.13	84	\$15.30	50	\$13.75	8	\$14.09	38	\$14.93
Men	28	13.87	52	14.06	82	15.29	41	13.76	8	14.09	37	14.96
Women	-	-	-	-	-	-	-	-	-	-	-	-
Package fillers, machine	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Pumpers	38	14.49	78	14.78	271	15.35	44	14.54	39	15.37	-	-
Men	36	14.47	76	14.80	-	-	29	14.45	38	15.39	75	14.90
Women	-	-	-	-	-	-	-	-	-	-	-	-
Pumper's helpers	-	-	-	-	-	-	-	-	-	-	109	14.33
Men	-	-	-	-	-	-	-	-	-	-	-	-
Treaters, oils	-	-	24	14.49	-	-	19	14.13	-	-	-	-
Men	-	-	21	14.49	-	-	19	14.13	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Inspecting and testing												
Routine testers, laboratory	67	14.40	89	14.33	709	15.09	80	14.22	59	14.10	117	13.68
Men	48	14.36	66	14.32	-	-	56	14.12	40	14.01	-	-
Women	-	-	23	14.37	-	-	-	-	19	14.31	-	-
Recording and control												
Stock clerks	-	-	29	14.32	149	15.10	39	14.26	8	12.61	50	14.40
Men	-	-	28	14.33	-	-	38	14.29	7	12.93	48	14.39
Material movement												
Truckdrivers	-	-	18	13.83	-	-	-	-	-	-	-	-
Men	-	-	18	13.83	-	-	-	-	-	-	-	-
Light truck	-	-	-	-	-	-	-	-	-	-	-	-
Medium truck	-	-	-	-	-	-	-	-	-	-	-	-
Heavy truck	-	-	-	-	-	-	-	-	-	-	14	14.02
Tractor-trailer	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Power-truck operators	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 5. Occupational averages: By size of establishment—Continued(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions											
	Midwest II				Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	100-249 workers		250 workers or more		250 workers or more		250 workers or more		100-249 workers		250 workers or more	
	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
Custodial												
Guards	-	-	9	\$12.80	133	\$13.66	-	-	-	-	-	-
Men	-	-	8	12.82	-	-	-	-	-	-	-	-
Guards I	-	-	-	-	133	13.66	-	-	-	-	-	-
Guards II	-	-	-	-	-	-	-	-	-	-	-	-
Janitors, porters, or cleaners	7	\$11.22	10	12.38	-	-	-	-	-	-	-	-
Men	7	11.22	10	12.38	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² For definitions of regions, see appendix A, table A-1, footnote 1.³ Virtually all workers were men.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria. Overall occupation may include data for subclassifications not shown separately.

Table 6. Occupational averages: By labor-management contract coverage

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions							
					East Coast		Western Pennsylvania-West Virginia		Midwest I			
	Majority of workers covered		None or minority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		None or minority of workers covered	
	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
Maintenance												
Boilermakers	537	\$15.35	-	-	33	\$15.52	-	-	-	-	-	-
Carpenters	342	15.20	-	-	36	15.52	10	\$13.28	49	\$15.11	-	-
Men	-	-	-	-	-	-	10	13.28	48	15.11	-	-
Electricians	1,024	15.34	79	\$15.59	121	15.57	24	13.76	87	15.18	36	\$15.70
Men	-	-	-	-	-	-	24	13.76	87	15.18	-	-
Helpers, maintenance trades	586	13.69	8	9.03	-	-	-	-	30	14.05	-	-
Men	-	-	8	9.03	-	-	-	-	28	14.05	-	-
Instrument repairers	1,158	15.35	125	15.49	130	15.69	17	13.74	114	15.04	43	15.75
Men	-	-	108	15.57	-	-	17	13.74	109	15.03	-	-
Machinists	1,517	15.32	-	-	224	15.50	9	13.86	167	15.25	-	-
Men	-	-	-	-	-	-	9	13.86	164	15.25	-	-
Mechanics, general	4,167	15.26	662	15.41	150	15.60	59	13.77	812	15.26	125	15.53
Men	3,743	15.24	-	-	150	15.60	59	13.77	790	15.26	-	-
Women	-	-	-	-	-	-	-	-	22	15.23	-	-
Mechanics, machinery	667	15.03	242	15.53	-	-	29	13.25	-	-	-	-
Men	-	-	-	-	-	-	29	13.25	-	-	-	-
Mechanics, motor vehicle	106	15.01	-	-	12	15.31	-	-	29	14.84	-	-
Men	-	-	-	-	12	15.31	-	-	29	14.84	-	-
Pipefitters	1,431	15.19	63	14.64	101	15.55	41	13.85	359	15.07	-	-
Men	-	-	58	14.69	-	-	41	13.85	348	15.07	-	-
Women	-	-	-	-	-	-	-	-	11	14.99	-	-
Welders, hand	652	15.20	64	15.19	102	15.56	31	13.65	61	15.02	-	-
Men	-	-	53	15.16	-	-	31	13.65	61	15.02	-	-
Processing												
Assistant operators	9,305	15.08	1,120	15.05	700	15.54	36	14.01	1,377	15.23	335	15.43
Men	-	-	-	-	-	-	36	14.01	1,172	15.27	-	-
Women	-	-	-	-	-	-	-	-	-	-	-	-
Chief operators	4,757	16.09	385	16.02	440	16.25	173	14.22	533	15.93	61	16.72
Men	-	-	-	-	-	-	168	14.22	-	-	-	-
Chief operator's helpers	1,279	14.14	385	14.05	-	-	114	13.47	45	14.95	-	-
Men	1,012	14.09	343	14.15	-	-	113	13.47	31	14.81	-	-
Women	-	-	42	13.27	-	-	-	-	-	-	-	-
Compounders ³	114	14.77	-	-	-	-	32	13.71	-	-	-	-
Laborers	715	12.26	-	-	-	-	27	10.72	313	12.55	-	-
Men	618	12.31	-	-	-	-	27	10.72	272	12.52	-	-
Women	-	-	-	-	-	-	-	-	41	12.70	-	-

See footnotes at end of table.

Table 6. Occupational averages: By labor-management contract coverage—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions							
					East Coast		Western Pennsylvania-West Virginia		Midwest I			
	Majority of workers covered		None or minority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		None or minority of workers covered	
	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
Loaders, tank cars or trucks	309	\$14.56	60	\$12.81	-	-	14	\$13.53	40	\$14.84	-	-
Men	294	14.58	32	12.96	-	-	14	13.53	37	14.88	-	-
Package fillers, machine	59	13.88	-	-	-	-	43	13.70	-	-	-	-
Men	56	13.85	-	-	-	-	41	13.69	-	-	-	-
Pumpers	844	15.06	150	14.77	-	-	44	13.74	115	15.28	-	-
Men	664	15.10	126	14.55	-	-	42	13.73	111	15.28	-	-
Pumper's helpers	356	14.47	-	-	-	-	-	-	70	14.54	-	-
Men	-	-	-	-	-	-	-	-	70	14.54	-	-
Treaters, oils	108	14.67	-	-	-	-	-	-	-	-	-	-
Men	101	14.65	-	-	-	-	-	-	-	-	-	-
Women	7	14.91	-	-	-	-	-	-	-	-	-	-
Inspecting and testing												
Routine testers, laboratory	1,497	14.74	244	14.31	181	\$15.16	-	-	212	14.57	27	\$15.12
Men	-	-	160	14.16	-	-	-	-	154	14.68	-	-
Women	-	-	-	-	-	-	-	-	58	14.26	-	-
Recording and control												
Stock clerks	398	14.74	59	13.35	52	14.88	14	13.67	69	14.48	-	-
Men	-	-	-	-	-	-	14	13.67	63	14.48	-	-
Women	-	-	-	-	-	-	-	-	6	14.50	-	-
Material movement												
Truckdrivers	290	14.07	95	14.01	-	-	33	13.24	53	14.29	-	-
Men	-	-	-	-	-	-	33	13.24	47	14.31	-	-
Light truck	22	13.79	-	-	-	-	-	-	-	-	-	-
Medium truck	7	14.23	-	-	-	-	-	-	-	-	-	-
Heavy truck	32	13.79	-	-	-	-	-	-	-	-	-	-
Tractor-trailer	72	13.85	-	-	-	-	-	-	-	-	-	-
Power-truck operators	72	13.96	-	-	-	-	36	13.46	-	-	-	-
Men	68	13.97	-	-	-	-	34	13.48	-	-	-	-
Forklift	55	13.72	-	-	-	-	36	13.46	-	-	-	-
Men	51	13.73	-	-	-	-	34	13.48	-	-	-	-

See footnotes at end of table.

Table 6. Occupational averages: By labor-management contract coverage—Continued(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	United States				Regions							
					East Coast		Western Pennsylvania- West Virginia		Midwest I			
	Majority of workers covered		None or minority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		None or minority of workers covered	
	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
Custodial												
Guards	205	\$13.37	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Guards I	185	13.28	-	-	32	\$13.62	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-
Guards II	16	14.58	-	-	-	-	-	-	-	-	-	-
Janitors, porters, or cleaners	61	12.29	9	\$7.92	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 6. Occupational averages: By labor-management contract coverage—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions									
	Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered	
	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
Maintenance										
Boilermakers	-	-	231	\$15.27	-	-	-	-	-	-
Carpenters	20	\$14.81	121	15.30	13	\$14.58	-	-	92	\$15.35
Men	20	14.81	-	-	11	14.53	-	-	83	15.35
Electricians	42	14.87	468	15.46	61	14.66	15	\$15.31	206	15.50
Men	42	14.87	-	-	61	14.66	15	15.31	-	-
Helpers, maintenance trades	-	-	431	13.87	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-
Instrument repairers	65	15.14	550	15.44	45	14.87	31	15.20	206	15.37
Men	65	15.14	-	-	42	14.86	31	15.20	171	15.36
Machinists	45	14.89	612	15.31	-	-	41	15.22	397	15.38
Men	43	14.88	-	-	-	-	41	15.22	-	-
Mechanics, general	317	14.98	2,147	15.36	64	14.08	234	15.09	384	15.34
Men	317	14.98	1,819	15.33	64	14.08	227	15.08	-	-
Women	-	-	-	-	-	-	7	15.24	-	-
Mechanics, machinery	75	14.86	289	15.27	126	14.83	-	-	-	-
Men	75	14.86	-	-	-	-	-	-	-	-
Mechanics, motor vehicle	-	-	-	-	-	-	-	-	13	15.36
Men	-	-	-	-	-	-	-	-	13	15.36
Pipefitters	84	14.73	476	15.30	34	14.57	-	-	319	15.40
Men	81	14.74	-	-	32	14.55	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-
Welders, hand	55	15.07	225	15.31	-	-	-	-	136	15.37
Men	54	15.06	-	-	-	-	-	-	-	-
Processing										
Assistant operators	937	14.58	3,811	15.20	456	14.39	275	14.93	1,713	15.00
Men	899	14.57	-	-	371	14.36	257	14.92	-	-
Women	38	14.84	-	-	-	-	18	15.13	-	-
Chief operators	271	15.36	2,172	16.53	253	15.41	193	15.90	722	15.81
Men	270	15.36	-	-	214	15.37	189	15.90	-	-
Chief operator's helpers	-	-	324	14.51	117	13.04	-	-	376	13.87
Men	-	-	-	-	114	13.04	-	-	320	13.92
Women	-	-	-	-	-	-	-	-	-	-
Compounders ³	-	-	-	-	-	-	-	-	-	-
Laborers	76	12.30	-	-	170	11.79	24	10.56	34	11.99
Men	69	12.37	-	-	156	11.83	21	10.79	-	-
Women	-	-	-	-	14	11.39	-	-	-	-

See footnotes at end of table.

Table 6. Occupational averages: By labor-management contract coverage—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions									
	Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered	
	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
Loaders, tank cars or trucks	66	\$13.96	96	\$15.31	50	\$13.75	-	-	38	\$14.93
Men	66	13.96	94	15.30	41	13.76	-	-	37	14.96
Package fillers, machine	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-
Pumpers	100	14.68	295	15.40	54	14.40	39	\$15.37	-	-
Men	96	14.69	-	-	38	14.30	38	15.39	75	14.90
Pumper's helpers	24	13.76	-	-	-	-	-	-	109	14.33
Men	24	13.76	-	-	-	-	-	-	-	-
Treaters, oils	27	14.37	-	-	19	14.13	-	-	-	-
Men	24	14.36	-	-	19	14.13	-	-	-	-
Women	-	-	-	-	-	-	-	-	-	-
Inspecting and testing										
Routine testers, laboratory	129	14.32	649	15.18	87	14.12	52	14.45	133	13.81
Men	95	14.32	-	-	60	14.07	34	14.43	-	-
Women	34	14.29	-	-	-	-	18	14.50	-	-
Recording and control										
Stock clerks	25	14.32	128	15.38	39	14.28	-	-	66	14.37
Men	25	14.32	-	-	38	14.29	-	-	64	14.36
Women	-	-	-	-	-	-	-	-	-	-
Material movement										
Truckdrivers	19	13.82	-	-	-	-	-	-	-	-
Men	19	13.82	-	-	-	-	-	-	-	-
Light truck	-	-	-	-	-	-	-	-	-	-
Medium truck	-	-	-	-	-	-	-	-	-	-
Heavy truck	-	-	-	-	-	-	-	-	14	14.02
Tractor-trailer	-	-	-	-	-	-	-	-	-	-
Power-truck operators	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-
Men	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 6. Occupational averages: By labor-management contract coverage—Continued

(Number of production workers and average straight-time hourly earnings¹ in selected occupations, petroleum refineries, United States and regions,² September 1988)

Department, occupation, and sex	Regions									
	Midwest II		Texas-Louisiana Gulf Coast		Texas Inland-North Louisiana-Arkansas		Rocky Mountain		West Coast	
	Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered		Majority of workers covered	
	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
Custodial										
Guards	11	\$11.61	133	\$13.66	-	-	-	-	-	-
Men	10	11.51	-	-	-	-	-	-	-	-
Guards I	7	11.01	133	13.66	-	-	-	-	-	-
Men	7	11.01	-	-	-	-	-	-	-	-
Guards II	-	-	-	-	-	-	-	-	-	-
Janitors, porters, or cleaners	15	12.79	-	-	-	-	-	-	-	-
Men	15	12.79	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ Virtually all workers were men.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria. Overall occupation may include data for subclassifications not shown separately.

Table 7. Occupational earnings: United States

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																										
			Under 10.50	10.50 and under 10.75	10.75-11.00	11.00-11.25	11.25-11.50	11.50-11.75	11.75-12.00	12.00-12.25	12.25-12.50	12.50-12.75	12.75-13.00	13.00-13.25	13.25-13.50	13.50-13.75	13.75-14.00	14.00-14.25	14.25-14.50	14.50-14.75	14.75-15.00	15.00-15.25	15.25-15.50	15.50-15.75	15.75-16.00	16.00-16.50	16.50-17.00	17.00 and over	
Maintenance																													
Boilermakers	546	\$15.35	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	3	41	32	2	20	-	-	-	-	
Carpenters	355	15.19	-	-	-	-	(?)	-	-	-	-	-	1	2	2	1	3	1	5	31	43	6	6	-	-	-	-	-	
Electricians	1,103	15.36	-	-	-	(?)	-	-	-	-	-	-	-	1	1	1	2	1	3	9	49	19	10	2	-	-	-	-	
Helpers, maintenance trades	594	13.62	1	-	1	3	(?)	-	-	-	-	1	3	5	7	71	2	4	1	-	-	-	-	-	-	-	-	-	
Instrument repairers	1,283	15.36	-	-	-	(?)	-	-	-	-	-	-	-	(?)	(?)	(?)	(?)	4	1	3	12	48	15	11	3	-	-	1	
Machinists	1,564	15.34	-	-	-	-	(?)	-	-	-	-	-	-	(?)	(?)	(?)	(?)	4	1	2	18	53	14	6	2	-	-	-	
Mechanics, general	4,829	15.28	-	-	-	(?)	-	-	-	-	(?)	(?)	-	1	(?)	1	2	1	1	(?)	6	18	53	11	4	2	-	-	
Men	4,111	15.22	-	-	-	(?)	-	-	-	-	(?)	(?)	-	1	(?)	1	2	1	1	(?)	8	20	51	13	-	2	-	-	
Mechanics, machinery	909	15.16	-	-	-	-	1	-	-	-	-	-	2	-	1	1	2	10	2	10	23	33	3	6	7	-	-	-	
Mechanics, motor vehicle	121	14.82	-	-	-	-	-	-	-	-	2	-	10	2	-	1	2	11	2	2	47	20	1	2	-	-	-	-	
Pipefitters	1,494	15.17	-	-	-	(?)	(?)	-	-	-	-	-	-	1	-	3	1	4	2	5	35	35	8	5	-	-	-	-	
Welders, hand	716	15.20	-	-	-	-	1	-	-	-	-	-	-	(?)	-	4	1	4	3	2	30	37	9	9	-	-	-	-	
Processing																													
Assistant operators	10,425	15.08	1	-	-	(?)	(?)	(?)	(?)	1	(?)	1	(?)	(?)	1	(?)	3	3	4	9	32	27	10	4	3	(?)	-	-	
Chief operators	5,142	16.09	-	-	-	-	-	-	-	-	1	(?)	(?)	-	-	(?)	1	3	(?)	2	1	20	10	26	31	2	-	-	4
Chief operator's helpers	1,664	14.12	1	(?)	1	1	-	3	1	(?)	-	1	2	5	3	3	6	14	20	18	14	(?)	1	6	-	-	-	-	-
Men	1,355	14.11	1	1	1	1	-	2	1	1	-	-	3	6	4	3	7	13	17	16	15	(?)	1	7	-	-	-	-	-
Compounders ³	133	14.88	-	-	-	-	1	-	-	-	-	-	-	1	17	2	9	1	2	2	18	21	26	1	26	1	-	-	-
Laborers	715	12.26	18	2	-	3	(?)	(?)	6	2	1	18	2	7	27	3	8	2	-	1	(?)	-	(?)	-	(?)	-	-	-	-
Men	618	12.31	16	2	-	4	(?)	(?)	6	2	1	19	2	7	26	4	7	1	-	1	(?)	-	(?)	-	(?)	-	-	-	-
Loaders, tank cars or trucks	369	14.27	-	-	(?)	-	-	9	-	1	(?)	-	(?)	(?)	3	9	9	15	5	12	4	(?)	18	10	3	1	-	-	-
Men	326	14.42	-	-	(?)	-	-	5	-	1	-	-	(?)	-	4	9	10	16	4	11	5	(?)	21	11	3	1	-	-	-
Women	39	13.13	-	-	-	-	-	46	-	-	-	-	-	-	-	3	13	8	26	-	-	-	5	-	-	-	-	-	-
Package fillers, machine	81	14.05	-	-	-	-	-	-	1	1	1	1	2	10	17	1	25	-	30	-	-	10	-	-	-	-	-	-	-
Men	72	13.99	-	-	-	-	-	-	1	1	1	1	3	11	19	1	25	-	25	-	-	10	-	-	-	-	-	-	-
Pumpers	994	15.01	-	-	-	-	-	-	(?)	(?)	-	-	2	2	1	4	4	8	20	4	8	24	10	4	10	(?)	-	-	-
Men	790	15.01	-	-	-	-	-	-	(?)	(?)	1	-	3	2	1	5	5	9	9	4	10	29	9	4	9	(?)	-	-	-
Pumper's helpers	401	14.54	-	-	-	-	-	-	-	(?)	-	(?)	6	7	(?)	10	9	17	4	-	20	24	-	1	-	-	-	-	-
Men	326	14.56	-	-	-	-	-	-	-	(?)	-	(?)	1	7	7	5	9	21	5	-	24	20	-	1	-	-	-	-	-
Treaters, oils	131	14.35	-	-	-	-	-	-	13	-	-	-	-	2	2	8	16	12	8	-	-	34	3	1	-	1	-	-	-
Men	124	14.31	-	-	-	-	-	-	14	-	-	-	-	2	2	9	16	13	6	-	-	32	3	1	-	1	-	-	-
Women	7	14.91	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	29	-	-	-	57	-	-	-	-	-	-	-
Inspecting and testing																													
Routine testers, laboratory	1,741	14.68	1	3	(?)	(?)	(?)	1	(?)	(?)	(?)	(?)	1	1	2	5	5	5	6	6	7	10	28	11	4	3	-	-	-
Recording and control																													
Stock clerks	457	14.56	1	-	-	-	(?)	1	-	-	-	-	1	1	4	6	3	9	19	16	7	6	17	7	4	-	-	-	-

See footnotes at end of table.

Table 7. Occupational earnings: United States—Continued

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988)

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																									
			Under 10.50	10.50 and under 10.75	10.75-11.00	11.00-11.25	11.25-11.50	11.50-11.75	11.75-12.00	12.00-12.25	12.25-12.50	12.50-12.75	12.75-13.00	13.00-13.25	13.25-13.50	13.50-13.75	13.75-14.00	14.00-14.25	14.25-14.50	14.50-14.75	14.75-15.00	15.00-15.25	15.25-15.50	15.50-15.75	15.75-16.00	16.00-16.50	16.50-17.00	17.00 and over
Material movement																												
Truckdrivers	385	\$14.06	1	-	-	-	1	1	-	-	10	-	-	-	15	5	26	14	1	5	1	12	2	-	-	8	-	-
Light truck	22	13.79	-	-	-	-	-	-	-	-	-	-	-	-	32	23	27	9	-	-	9	-	-	-	-	-	-	-
Medium truck	7	14.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	14	-	-	29	-	-	-	-	-	-	-
Heavy truck	62	14.99	-	-	-	-	3	-	-	-	-	-	-	-	-	15	27	-	-	6	-	-	-	-	-	48	-	-
Tractor-trailer	137	13.43	2	-	-	-	-	-	-	20	-	-	-	-	28	-	37	12	-	-	-	-	-	-	-	-	-	-
Power-truck operators	74	13.96	-	-	-	-	3	-	-	-	-	-	-	31	8	3	30	-	-	-	26	-	-	-	-	-	-	-
Men	70	13.97	-	-	-	-	3	-	-	-	-	-	-	30	9	3	29	-	-	-	27	-	-	-	-	-	-	-
Forklift	57	13.73	-	-	-	-	-	-	-	-	-	-	-	40	11	4	39	-	-	-	7	-	-	-	-	-	-	-
Men	53	13.74	-	-	-	-	-	-	-	-	-	-	-	40	11	4	38	-	-	-	8	-	-	-	-	-	-	-
Custodial																												
Guards	226	12.91	⁵ 12	3	-	-	-	-	5	-	2	2	-	-	9	23	9	15	9	6	-	5	-	-	-	-	-	-
Guards I	206	12.79	13	3	-	-	-	-	6	-	1	-	-	-	10	25	10	15	10	7	-	-	-	-	-	-	-	-
Guards II	16	14.58	-	-	-	-	-	-	-	-	13	-	-	-	6	-	-	13	-	-	69	-	-	-	-	-	-	-
Janitors, porters, or cleaners	70	11.72	⁶ 27	-	-	-	1	4	-	-	6	1	29	4	11	3	7	6	-	-	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.
² Less than 0.5 percent.
³ Virtually all workers were men.
⁴ Workers were distributed as follows: 1 percent at \$10.25 and under \$10.50; 4 percent at \$10 and under \$10.25; 1 percent at \$9.75 and under \$10; 5 percent at \$9.25 and under \$9.50; 3 percent at \$9 and under \$9.25; and 4 percent at under \$9.
⁵ Workers were distributed as follows: 1 percent at \$9.75 and under \$10; 7 percent at \$7 and under \$7.25; and

3 percent at under \$7.
⁶ Workers were distributed as follows: 1 percent at \$10 and under \$10.25; 7 percent at \$9.50 and under \$9.75; 3 percent at \$9.25 and under \$9.50; 3 percent at \$8.75 and under \$9; 1 percent at \$8.25 and under \$8.50; 1 percent at \$8 and under \$8.25; 6 percent at \$6.50 and under \$6.75; and 4 percent at under \$6.50.
 NOTE: Because of rounding, sums of individual items may not equal 100. Dashes indicate that no data were reported.

Table 8. Occupational earnings: East Coast(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988)

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—															
			Under 13.00	13.00 and under 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 - 15.25	15.25 - 15.50	15.50 - 15.75	15.75 - 16.00	16.00 - 16.25	16.25 - 16.50	16.50 - 16.75	16.75 - 17.00
Maintenance																		
Boilermakers	33	\$15.52	-	-	-	-	-	-	-	-	-	33	-	27	39	-	-	-
Carpenters	36	15.52	-	-	-	-	-	-	-	-	-	39	-	8	53	-	-	-
Electricians	121	15.57	-	-	-	-	-	-	-	-	-	16	13	33	38	-	-	-
Instrument repairers	130	15.69	-	-	-	-	-	-	-	-	-	-	9	35	56	-	-	-
Machinists	224	15.50	-	-	-	-	-	-	-	-	-	25	15	40	21	-	-	-
Mechanics, general ²	199	15.72	-	-	-	-	-	-	-	-	-	-	-	75	-	25	-	-
Mechanics, motor vehicle ²	12	15.31	-	-	-	-	-	-	-	-	-	50	42	8	-	-	-	-
Pipefitters	101	15.55	-	-	-	-	-	-	-	-	-	25	-	38	38	-	-	-
Welders, hand	102	15.56	-	-	-	-	-	-	-	-	-	28	-	24	48	-	-	-
Processing																		
Assistant operators	755	15.58	2	-	-	-	-	-	-	-	3	13	12	34	21	7	8	-
Chief operators	480	16.30	-	-	-	-	-	-	-	-	-	-	-	-	30	8	41	-
Pumpers	59	15.90	-	-	-	-	-	-	-	-	-	3	41	3	-	22	24	-
Men	55	15.91	-	-	-	-	-	-	-	-	-	-	44	4	-	22	25	-
Inspecting and testing																		
Routine testers, laboratory	194	15.15	5	1	-	1	1	-	3	2	13	19	31	9	1	1	13	-
Recording and control																		
Stock clerks	52	14.88	-	-	-	-	-	2	37	25	8	-	-	-	29	-	-	-
Custodial																		
Guards	41	13.73	³ 12	-	-	-	44	-	24	10	-	10	-	-	-	-	-	-
Guards I	37	13.57	14	-	-	-	49	-	27	11	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Virtually all workers were men.³ Workers were distributed as follows: 10 percent at \$10.50 and under \$10.75;

and 2 percent at \$8.25 and under \$8.50.

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

Table 9. Occupational earnings: Western Pennsylvania-West Virginia(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988)

Department, occupation, and sex ²	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																	
			Under 11.00	11.00 and under 11.25	11.25 - 11.50	11.50 - 11.75	11.75 - 12.00	12.00 - 12.25	12.25 - 12.50	12.50 - 12.75	12.75 - 13.00	13.00 - 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 and over
Maintenance																				
Carpenters	10	\$13.28	-	-	10	-	-	-	-	-	-	20	-	60	10	-	-	-	-	-
Electricians	24	13.76	-	-	8	-	-	-	-	-	-	-	-	33	33	-	-	-	25	-
Instrument repairers	17	13.74	-	-	18	-	-	-	-	-	-	-	-	12	6	29	6	29	-	-
Machinists	9	13.86	-	-	-	-	-	-	-	-	-	-	-	-	89	11	-	-	-	-
Mechanics, general	59	13.77	-	-	-	-	-	-	-	-	-	-	7	58	17	5	3	10	-	-
Mechanics, machinery	29	13.25	-	-	17	-	-	-	-	-	-	28	-	41	-	-	-	14	-	-
Pipefitters	41	13.85	-	-	7	-	-	-	-	-	-	-	7	-	56	-	-	29	-	-
Welders, hand	31	13.65	-	-	13	-	-	-	-	-	-	-	-	-	77	-	-	10	-	-
Processing																				
Assistant operators	36	14.01	-	-	-	-	-	-	-	-	-	-	-	33	-	56	8	3	-	-
Chief operators	173	14.22	-	-	-	-	-	-	16	-	-	-	-	-	-	18	39	-	16	³ 11
Chief operator's helpers	114	13.47	⁴ 11	-	-	-	-	-	-	-	4	1	39	32	7	7	-	-	-	-
Compounders	32	13.71	-	-	3	-	-	-	-	-	-	-	-	69	9	13	-	6	-	-
Men	30	13.72	-	-	3	-	-	-	-	-	-	-	-	67	10	13	-	7	-	-
Laborers	27	10.72	⁵ 52	-	-	-	-	-	-	-	15	26	7	-	-	-	-	-	-	-
Loaders, tank cars or trucks	14	13.53	-	-	-	-	-	-	-	-	-	-	43	43	14	-	-	-	-	-
Package fillers, machine	43	13.70	-	-	-	-	-	-	-	-	2	5	16	30	-	47	-	-	-	-
Pumpers	44	13.74	-	-	-	-	-	-	9	-	-	-	16	18	27	-	30	-	-	-
Recording and control																				
Stock clerks	14	13.67	-	-	7	-	-	-	-	-	7	21	14	7	43	-	-	-	-	-
Material movement																				
Truckdrivers	33	13.24	-	-	-	-	-	-	33	-	-	-	30	-	36	-	-	-	-	-
Power-truck operators	36	13.46	-	-	-	-	-	-	-	-	-	64	8	-	-	28	-	-	-	-
Men	34	13.48	-	-	-	-	-	-	-	-	-	62	9	-	-	29	-	-	-	-
Forklift	36	13.46	-	-	-	-	-	-	-	-	-	64	8	-	-	28	-	-	-	-
Men	34	13.48	-	-	-	-	-	-	-	-	-	62	9	-	-	29	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Unless otherwise indicated, virtually all workers were men.³ Workers were distributed as follows: 6 percent at \$15 and under \$15.25; and 5 percent at \$15.75 and under \$16.⁴ All workers were at \$10.75 and under \$11.⁵ Workers were distributed as follows: 30 percent at \$9.25 and under \$9.50; 7 percent at \$9 and under \$9.25; 4 percent at \$8.50 and under \$8.75; 11 percent at \$6 and under \$6.25.

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

Table 10. Occupational earnings: Midwest I

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																										
			Under 10.50	10.50 and under 10.75	10.75 - 11.00	11.00 - 11.25	11.25 - 11.50	11.50 - 11.75	11.75 - 12.00	12.00 - 12.25	12.25 - 12.50	12.50 - 12.75	12.75 - 13.00	13.00 - 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 - 15.25	15.25 - 15.50	15.50 - 15.75	15.75 - 16.00	16.00 - 16.25	16.25 - 16.50	16.50 and over	
			Maintenance																										
Carpenters ²	57	\$15.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	14	47	2	23	-	-	-	-	-	
Electricians	123	15.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	8	24	27	17	-	-	-	14	-	
Helpers, maintenance trades	30	14.05	-	-	-	-	-	-	-	-	-	-	-	13	-	33	-	53	-	-	-	-	-	-	-	-	-	-	
Men	28	14.05	-	-	-	-	-	-	-	-	-	-	-	14	-	32	-	54	-	-	-	-	-	-	-	-	-	-	
Instrument repairers	157	15.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	6	15	34	13	-	-	-	
Men	139	15.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	7	16	26	15	-	-	-	16	-	
Machinists	199	15.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	13	13	-	-	-	16	-
Men	164	15.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	25	15	-	-	-	-	-
Mechanics, general	937	15.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	(³)	6	17	68	3	-	-	-	4	-	
Men	832	15.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	(³)	7	18	70	3	-	-	-	-	-	
Mechanics, motor vehicle ²	41	14.27	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	32	-	-	39	-	-	-	-	-	-	-	-
Pipefitters ²	359	15.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	12	-	1	62	11	11	-	-	-	-	-	
Welders, hand	79	15.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	15	11	32	19	-	-	-	-	-	
Men	69	15.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	17	13	22	22	-	-	-	-	-	
Processing																													
Assistant operators	1,712	15.27	(³)	-	-	-	(³)	-	(³)	-	-	1	-	-	1	-	6	(³)	2	1	26	26	17	13	-	-	6	-	
Chief operators	594	16.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	3	19	37	26	4	-	
Chief operator's helpers	95	14.69	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	57	17	-	-	25	-	-	-	-	-	-	
Men	71	14.61	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	62	20	-	-	17	-	-	-	-	-	-	
Women	24	14.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	8	-	-	50	-	-	-	-	-	-	
Laborers	313	12.55	⁴ 12	4	-	7	-	10	4	-	2	-	-	44	5	12	-	-	-	-	1	-	1	-	-	-	-	-	
Men	272	12.52	12	3	-	8	-	10	4	-	2	-	-	43	5	10	-	-	-	-	1	-	1	-	-	-	-	-	
Women	41	12.70	12	5	-	-	-	7	5	-	-	-	-	49	2	20	-	-	-	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks	40	14.84	-	-	3	-	-	-	-	-	-	-	-	-	-	-	18	18	-	23	3	13	-	25	-	-	-	-	
Men	37	14.88	-	-	3	-	-	-	-	-	-	-	-	-	-	-	19	11	-	24	3	14	-	27	-	-	-	-	
Pumpers	143	15.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	6	5	22	20	13	-	14	-	-	
Men	119	15.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	8	6	26	24	13	-	-	-	-	
Pumper's helpers ²	70	14.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	16	16	-	34	-	-	-	-	-	-	-	
Inspecting and testing																													
Routine testers, laboratory	239	14.63	2	-	-	-	4	-	-	-	-	(³)	-	-	-	8	10	18	5	5	23	21	-	1	-	4	-	-	
Men	162	14.65	1	-	-	-	2	-	-	-	-	1	-	-	-	4	12	19	6	1	31	21	-	1	-	-	-	-	
Recording and control																													
Stock clerks	82	14.52	-	-	-	-	-	-	-	-	-	-	-	1	4	-	37	40	11	5	-	2	-	-	-	-	-	-	
Men	67	14.48	-	-	-	-	-	-	-	-	-	-	-	1	4	-	42	43	-	6	-	3	-	-	-	-	-	-	
Material movement																													
Truckdrivers	121	14.47	-	-	-	-	-	-	-	-	-	-	-	31	-	3	25	-	12	-	3	-	-	-	-	-	25	-	

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² Virtually all workers were men.

³ Less than 0.5 percent.

⁴ Workers were distributed as follows: 1 percent at \$10.25 and under \$10.50; 5 percent at \$10 and under

\$10.25; and 6 percent at under \$10.

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

32

Table 11. Occupational earnings: Midwest II

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department, occupation, and sex ²	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																									
			Under 10.00	10.00 and under 10.25	10.25-10.50	10.50-10.75	10.75-11.00	11.00-11.25	11.25-11.50	11.50-11.75	11.75-12.00	12.00-12.25	12.25-12.50	12.50-12.75	12.75-13.00	13.00-13.25	13.25-13.50	13.50-13.75	13.75-14.00	14.00-14.25	14.25-14.50	14.50-14.75	14.75-15.00	15.00-15.25	15.25-15.50	15.50-15.75	15.75-16.00	16.00 and over
Maintenance																												
Boilermakers	28	\$14.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	57	32	-	-	-	-
Carpenters	20	14.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	10	10	15	-	45	-	-	-	
Electricians	53	14.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	8	19	34	17	-	-	-	
Instrument repairers	78	15.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	10	18	36	-	-	-	3 10	
Machinists	51	14.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	4	76	12	-	-	-	-	
Mechanics, general	377	14.82	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	15	6	3	-	17	49	2	7	-	-	
Mechanics, machinery	91	14.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	18	2	31	46	-	-	-	-	
Pipefitters	102	14.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	3	16	-	56	18	-	-	-	-	
Welders, hand	68	15.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	9	-	19	40	15	-	-	
Processing																												
Assistant operators	1,161	14.59	-	-	3	-	-	-	-	-	3	-	-	1	-	2	1	1	7	15	9	11	45	1	2	-	-	
Men	1,086	14.57	-	-	3	-	-	-	-	-	3	-	-	1	-	2	1	1	7	15	9	11	44	1	2	-	-	
Women	75	14.89	-	-	-	-	-	-	-	-	3	-	-	-	-	1	-	3	4	8	12	69	-	-	-	-	-	
Chief operators	287	15.23	-	-	-	-	-	-	-	-	-	-	6	-	-	-	2	-	-	-	-	17	1	49	15	10	-	
Compounders	22	15.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	14	27	45	9	-	-	
Laborers	76	12.30	⁴ 16	1	-	-	3	-	3	1	-	7	-	17	24	-	5	24	-	-	-	-	-	-	-	-	-	
Men	69	12.37	14	1	-	-	3	-	3	1	-	7	-	13	25	-	6	26	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks	90	14.05	-	-	-	-	-	-	-	-	2	-	-	-	-	-	12	27	23	9	24	2	-	-	-	-	-	
Men	80	13.99	-	-	-	-	-	-	-	-	3	-	-	-	-	-	14	30	26	10	15	3	-	-	-	-	-	
Pumpers	116	14.69	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	15	14	16	22	28	3	-	-	-	-	
Pumper's helpers	24	13.76	-	-	-	-	-	-	-	-	-	-	-	21	-	4	50	25	-	-	-	-	-	-	-	-	-	
Treaters, oils	44	13.48	-	-	-	-	-	-	-	-	39	-	-	-	7	-	-	5	27	23	-	-	-	-	-	-	-	
Men	41	13.40	-	-	-	-	-	-	-	-	41	-	-	-	7	-	-	2	29	20	-	-	-	-	-	-	-	
Inspecting and testing																												
Routine testers, laboratory	156	14.36	-	-	-	-	-	-	-	-	-	-	1	5	3	2	1	19	18	12	5	12	20	4	-	-	-	
Men	114	14.33	-	-	-	-	-	-	-	-	-	-	1	7	4	-	1	19	19	7	7	11	21	4	-	-	-	
Women	42	14.43	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	19	14	24	-	14	17	5	-	-	-	
Recording and control																												
Stock clerks	34	13.92	6	-	-	-	-	-	-	-	-	-	-	-	-	9	9	26	24	12	12	3	-	-	-	-	-	
Material movement																												
Truckdrivers	19	13.82	-	-	-	-	-	-	-	-	-	-	-	-	-	16	16	47	16	-	-	5	-	-	-	-	-	
Custodial																												
Guards	11	11.61	⁵ 18	9	-	-	-	-	-	-	-	-	-	36	-	-	-	36	-	-	-	-	-	-	-	-	-	
Men	10	11.51	20	10	-	-	-	-	-	-	-	-	-	30	-	-	-	40	-	-	-	-	-	-	-	-	-	
Guards I	7	11.01	29	14	-	-	-	-	-	-	-	-	-	-	-	-	-	57	-	-	-	-	-	-	-	-	-	
Janitors, porters, or cleaners	17	11.91	⁶ 18	-	-	-	-	-	-	-	-	-	-	24	-	29	-	6	24	-	-	-	-	-	-	-	-	

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² Unless otherwise indicated, virtually all workers were men.

³ All workers were at \$17.75 and under \$18.

⁴ All workers were at \$8 and under \$8.25.

⁵ All workers were at \$6.25 and under \$6.50.

⁶ Workers were distributed as follows: 6 percent at \$8 and under \$8.25; and 12 percent at \$5.25 and under \$5.50.

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

Table 12. Occupational earnings: Texas-Louisiana Gulf Coast

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department and occupation	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																				
			Under 12.00	12.00 and under 12.25	12.25	12.50	12.75	13.00	13.25	13.50	13.75	14.00	14.25	14.50	14.75	15.00	15.25	15.50	15.75	16.00	16.25	16.50	16.50 and over
Maintenance																							
Boilermakers	231	\$15.27	-	-	-	-	-	-	-	-	-	-	-	-	-	59	41	-	-	-	-	-	-
Carpenters	123	15.27	-	-	-	-	-	-	-	-	2	-	-	-	-	55	41	2	-	-	-	-	-
Electricians	483	15.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	20	6	-	-	-	-
Helpers, maintenance trades	433	13.87	-	-	-	-	-	1	1	6	92	-	-	-	-	-	-	-	-	-	-	-	-
Instrument repairers	589	15.47	-	-	-	-	-	-	-	-	-	-	-	-	9	61	17	10	3	1	-	-	-
Mechinists	621	15.32	-	-	-	-	-	-	-	-	-	-	-	9	10	56	17	8	-	-	-	-	-
Mechanics, general	2,498	15.40	-	-	(?)	-	(?)	-	-	1	-	(?)	(?)	(?)	19	58	13	8	1	(?)	-	-	-
Mechanics, machinery	398	15.24	-	-	-	-	2	-	-	-	-	10	-	-	26	51	8	4	-	-	-	-	-
Pipefitters	476	15.30	-	-	-	-	-	-	-	-	-	-	-	-	52	41	8	-	-	-	-	-	-
Welders, hand	231	15.32	-	-	-	-	-	-	-	-	-	-	-	-	58	33	8	1	-	-	-	-	-
Processing																							
Assistant operators	4,123	15.19	1	(?)	-	1	-	1	-	-	-	(?)	1	1	(?)	39	46	11	-	-	-	-	-
Chief operators	2,333	16.49	-	-	-	-	-	-	-	-	-	-	-	-	-	27	2	36	22	6	7	-	-
Chief operator's helpers	575	14.48	-	-	-	-	-	7	-	-	10	5	11	28	39	-	-	-	-	-	-	-	-
Compounders ³	33	15.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	3	-	-	-	-	-
Loaders, tank cars or trucks ³	96	15.31	-	-	-	-	-	-	-	-	-	-	-	13	4	-	45	39	-	-	-	-	-
Pumpers	355	15.11	-	-	-	-	-	7	-	-	5	1	5	10	-	1	50	12	2	7	-	-	-
Inspecting and testing																							
Routine testers, laboratory	763	15.03	3	1	-	-	1	-	6	1	2	2	1	6	4	45	19	9	-	-	-	-	-
Recording and control																							
Stock clerks	153	15.06	-	-	-	-	2	1	-	12	1	-	-	-	14	51	18	-	-	-	-	-	-
Custodial																							
Guards	133	13.66	6	-	2	-	-	-	15	36	2	23	8	8	-	-	-	-	-	-	-	-	-
Guards I	133	13.66	6	-	2	-	-	-	15	36	2	23	8	8	-	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² Less than 0.5 percent.

³ Virtually all workers were men.

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

Table 13. Occupational earnings: Texas inland-North Louisiana-Arkansas

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																				
			Under 11.50	11.50 and under 11.75	11.75 - 12.00	12.00 - 12.25	12.25 - 12.50	12.50 - 12.75	12.75 - 13.00	13.00 - 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 - 15.25	15.25 - 15.50	15.50 - 15.75	15.75 - 16.00	16.00 - 16.25	
Maintenance																							
Carpenters	16	\$14.80	-	-	-	-	-	-	-	-	-	-	-	19	-	13	-	38	13	-	-	19	-
Men	14	14.79	-	-	-	-	-	-	-	-	-	-	-	21	-	14	-	29	14	-	-	21	-
Electricians ²	70	14.75	-	-	-	-	-	-	-	-	-	-	6	23	-	9	17	37	-	-	9	-	-
Instrument repairers	63	14.62	-	5	-	-	-	-	-	-	10	-	8	-	-	8	16	44	-	-	10	-	-
Men	57	14.67	-	5	-	-	-	-	-	-	5	-	9	-	-	7	18	46	-	-	11	-	-
Women	6	14.13	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	33	-	-	-	-	-
Mechanics, general ²	64	14.08	-	-	-	-	-	-	-	-	-	33	-	-	-	33	-	23	11	-	-	-	-
Mechanics, machinery	141	14.88	-	-	-	-	-	-	-	-	-	-	4	8	-	9	42	31	-	-	-	6	-
Mechanics, motor vehicle	8	14.61	-	-	-	-	-	-	-	25	-	-	-	13	-	25	-	-	-	-	-	38	-
Men	7	14.81	-	-	-	-	-	-	-	14	-	-	-	14	-	29	-	-	-	-	-	43	-
Pipefitters	67	14.27	-	4	-	-	-	-	-	-	-	18	-	13	-	28	24	7	-	-	-	4	-
Men	62	14.29	-	5	-	-	-	-	-	-	-	15	-	15	-	31	23	8	-	-	-	5	-
Welders, hand ²	57	14.71	-	-	-	-	-	-	-	-	5	-	9	11	-	19	-	51	-	-	-	5	-
Processing																							
Assistant operators	555	14.43	-	-	-	-	-	-	-	-	5	-	9	14	26	31	3	12	-	-	-	-	-
Men	449	14.41	-	-	-	-	-	-	-	-	5	-	10	16	30	23	3	13	-	-	-	-	-
Chief operators	292	15.51	-	-	-	-	-	-	-	-	-	-	-	2	-	5	-	5	23	44	6	13	-
Men	253	15.50	-	-	-	-	-	-	-	-	-	-	-	3	-	6	-	6	26	36	7	15	-
Chief operator's helpers	141	12.83	2	26	-	-	-	10	15	29	-	-	13	6	-	-	-	-	-	-	-	-	-
Men	126	12.95	2	19	-	-	-	11	17	33	-	-	14	5	-	-	-	-	-	-	-	-	-
Laborers	170	11.79	³ 21	-	7	-	-	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men	156	11.83	21	-	8	-	-	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Women	14	11.39	29	-	-	-	-	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks	83	12.90	-	40	-	-	1	-	1	7	17	-	33	-	-	-	-	-	-	-	-	-	-
Men	56	13.19	-	27	-	-	-	2	-	11	21	-	39	-	-	-	-	-	-	-	-	-	-
Pumpers	66	14.20	-	-	-	-	-	-	-	18	-	14	26	2	26	-	15	-	-	-	-	-	-
Men	47	14.11	-	-	-	-	-	-	-	19	-	17	36	2	6	-	19	-	-	-	-	-	-
Treaters, oils ²	19	14.13	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-
Inspecting and testing																							
Routine testers, laboratory	123	14.10	-	-	-	-	3	-	-	-	19	11	7	9	7	33	-	11	-	-	-	-	-
Men	78	14.00	-	-	-	-	1	-	-	-	26	15	5	9	12	27	-	5	-	-	-	-	-
Recording and control																							
Stock clerks ²	48	14.00	-	6	-	-	-	-	-	19	-	-	29	8	33	4	-	-	-	-	-	-	-
Material movement																							
Truckdrivers ²	54	12.80	6	4	-	-	50	-	-	-	7	7	26	-	-	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² Virtually all workers were men.

³ Workers were distributed as follows: 1 percent at \$11.25 and under \$11.50; 1 percent at \$10.50 and under \$10.75; 7 percent at \$10 and under \$10.25; 8 percent at \$9 and under \$9.25;

and 5 percent at under \$9.

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

Table 14. Occupational earnings: Rocky Mountain

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988

Department, occupation, and sex ²	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																								
			Under 11.00	11.00 and under 11.25	11.25 - 11.50	11.50 - 11.75	11.75 - 12.00	12.00 - 12.25	12.25 - 12.50	12.50 - 12.75	12.75 - 13.00	13.00 - 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 - 15.25	15.25 - 15.50	15.50 - 15.75	15.75 - 16.00	16.00 - 16.25	16.25 - 16.50	16.50 - 16.75	
Maintenance																											
Electricians	15	\$15.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	-	33	-	-	-	-	-	-
Instrument repairers	31	15.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	13	-	-	-	-	-	-	-
Machinists	41	15.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	24	-	-	-	-	-	-	-
Mechanics, general	311	15.01	-	-	-	-	-	-	1	-	-	1	-	-	(³)	1	(³)	-	54	13	24	5	-	-	-	-	-
Processing																											
Assistant operators	330	14.80	-	1	-	-	1	-	1	1	-	-	1	-	(³)	13	2	17	15	17	30	1	(³)	-	-	-	-
Men	311	14.79	-	1	-	-	1	-	1	1	-	-	1	-	(³)	14	2	18	14	16	30	1	(³)	-	-	-	-
Women	19	15.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	26	37	32	-	-	-	-	-	-
Chief operators	233	15.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	7	49	3	19	-	-	12	
Chief operator's helpers	56	13.48	⁴ 13	-	-	7	-	-	-	-	-	-	4	-	-	45	7	9	14	2	-	-	-	-	-	-	-
Men	50	13.73	8	-	-	6	-	-	-	-	-	-	4	-	-	46	8	10	16	2	-	-	-	-	-	-	-
Laborers	24	10.56	⁵ 71	-	-	-	-	-	-	-	-	-	17	13	-	-	-	-	-	-	-	-	-	-	-	-	-
Men	21	10.79	67	-	-	-	-	-	-	-	-	-	19	14	-	-	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks	8	14.09	-	-	-	13	-	-	-	-	-	-	-	-	13	-	25	25	-	-	25	-	-	-	-	-	-
Pumpers	39	15.37	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	23	-	-	-	51	-	-	21	-	-
Inspecting and testing																											
Routine testers, laboratory	59	14.10	⁶ 10	-	-	2	-	-	-	2	-	-	2	5	10	7	-	14	15	19	14	-	2	-	-	-	-
Men	40	14.01	10	-	-	-	-	-	-	3	-	-	3	8	15	8	-	13	13	13	15	-	3	-	-	-	-
Women	19	14.31	11	-	-	5	-	-	-	-	-	-	-	-	5	-	16	21	32	11	-	-	-	-	-	-	-
Recording and control																											
Stock clerks	8	12.61	⁷ 38	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-
Men	7	12.93	29	-	-	-	-	-	-	14	-	-	-	-	29	-	-	-	-	29	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² Unless otherwise indicated, virtually all workers were men.

³ Less than 0.5 percent.

⁴ Workers were distributed as follows: 5 percent at \$9.75 and under \$10; and 7 percent at \$8.50 and under \$8.75.

⁵ Workers were distributed as follows: 38 percent at \$9.75 and under \$10; 21 percent at \$9.25 and under \$9.50; and 13 percent \$7.25 and under \$7.50.

⁶ Workers were distributed as follows: 2 percent at \$10.75 and under \$11; 3 percent at \$10.50 and under \$10.75; 2 percent at \$10.25 and under \$10.50; and 3 percent at under \$10.25.

⁷ Workers were distributed as follows: 25 percent at \$10.25 and under \$10.50; and 13 percent at \$9.50 and under \$9.75.

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

Table 15. Occupational earnings: West Coast

(Percent distribution of workers in selected occupations by straight-time hourly earnings,¹ September 1988)

Department, occupation, and sex	Number of workers	Average (mean) hourly earnings	Percent of workers receiving straight-time hourly earnings (in dollars) of—																										
			Under 10.50	10.50 and under 10.75	10.75 - 11.00	11.00 - 11.25	11.25 - 11.50	11.50 - 11.75	11.75 - 12.00	12.00 - 12.25	12.25 - 12.50	12.50 - 12.75	12.75 - 13.00	13.00 - 13.25	13.25 - 13.50	13.50 - 13.75	13.75 - 14.00	14.00 - 14.25	14.25 - 14.50	14.50 - 14.75	14.75 - 15.00	15.00 - 15.25	15.25 - 15.50	15.50 - 15.75	15.75 - 16.00	16.00 - 16.25	16.25 - 16.50	16.50 - 16.75	
Maintenance																													
Carpenters	92	\$15.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Men	83	15.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Electricians	214	15.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Helpers, maintenance trades	36	11.25	² 11	-	-	56	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Instrument repairers	218	15.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Men	183	15.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Machinists	397	15.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mechanics, general	384	15.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mechanics, motor vehicle ³	13	15.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pipefitters	331	15.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Welders, hand	148	15.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Processing																													
Assistant operators	1,753	15.00	-	-	-	-	-	-	-	-	3	-	-	-	(*)	1	1	-	-	37	29	18	3	4	4	-	-	1	
Chief operators	750	15.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	19	20	12	26	-	-	
Chief operator's helpers	376	13.87	-	-	-	3	-	2	5	2	-	2	7	-	4	-	-	15	49	13	-	-	-	-	-	-	-	-	
Men	320	13.92	-	-	-	3	-	-	5	2	-	-	8	-	4	-	-	14	52	13	-	-	-	-	-	-	-	-	
Laborers	34	11.99	⁵ 44	-	-	-	-	-	-	-	-	-	-	12	-	-	-	32	-	12	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks ³	38	14.93	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	29	-	-	45	-	-	5	5	-	-	
Pumpers	172	14.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	1	17	-	2	5	-	9	-	-	
Men	91	15.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	1	29	-	9	-	18	-	-	-	
Pumper's helpers	141	14.51	-	-	-	-	-	-	-	-	-	1	-	16	-	3	-	36	-	-	23	21	-	-	-	-	-	-	
Inspecting and testing																													
Routine testers, laboratory	153	13.90	-	24	-	1	-	1	-	1	-	1	-	1	1	1	-	-	5	18	12	1	5	25	-	-	5	-	
Recording and control																													
Stock clerks ³	66	14.37	-	-	-	-	-	-	-	-	-	-	-	6	-	5	18	39	12	17	-	-	-	3	-	-	-	-	
Material movement																													
Truckdrivers:																													
Heavy truck	14	14.02	-	-	-	-	-	-	-	-	-	-	-	-	57	21	-	-	-	21	-	-	-	-	-	-	-	-	-
Custodial																													
Janitors, porters, or cleaners	19	9.97	⁶ 68	-	-	-	-	-	-	-	-	-	16	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men	16	9.62	75	-	-	-	-	-	-	-	-	-	6	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

² All workers were at \$6.50 and under \$6.75.

³ Virtually all workers were men.

⁴ Less than 0.5 percent.

⁵ All workers were at \$9.25 and under \$9.50.

⁶ Workers were distributed as follows: 26 percent at \$9.50 and under \$9.75; 11 percent at \$9.25 and under

\$9.50; 5 percent at \$8.75 and under \$9; 5 percent at \$8.25 and under \$8.50; and 21 percent at \$6.50 and under \$6.75.

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

Table 16. Method of wage payment(Percent of production workers in petroleum refineries by method of wage payment,¹ United States and regions,² September 1988)

Method	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Time-rated workers	99	100	100	100	100	100	93	100	100
Formal plans	99	100	100	100	100	100	92	100	100
Single rate	80	95	82	62	83	82	76	68	90
Range of rates	19	5	18	38	17	18	16	32	10
Length of service	15	4	18	22	17	17	16	25	7
Combination	4	1	-	16	(³)	1	-	7	3
Individual rate	(³)	-	-	-	-	-	1	-	-
Incentive workers	(³)	-	-	-	-	-	7	-	-
Individual piecework	(³)	-	-	-	-	-	7	-	-

¹ For definition of method of wage payment, see appendix A.² For definitions of regions, see appendix A, table A-1, footnote 1.³ Less than 0.5 percent.

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

38

Table 17. Scheduled weekly hours(Percent of production workers in petroleum refineries by scheduled weekly hours,¹ United States and regions,² September 1988)

Weekly hours	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Under 40 hours	1	-	-	5	-	-	-	-	-
40 hours	74	58	89	93	69	79	70	89	53
Cyclical workweek	25	42	11	2	31	21	30	11	47
40, 40, 40, and 48	6	16	11	-	7	3	7	-	11

¹ Data relate to the predominant schedule for full-time workers in each establishment.² For definitions of regions, see appendix A, table A-1, footnote 1.

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

Table 18. Shift differential practices

(Percent of production workers assigned to rotating shifts by amount of differential, petroleum refineries, United States and regions,¹ September 1988)

Shift differential	United States			East Coast			Western Pennsylvania-West Virginia			Midwest I			Midwest II			Texas-Louisiana Gulf Coast			Texas Inland-North Louisiana-Arkansas			Rocky Mountain			West Coast		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Workers assigned to rotating shifts	18.1	15.0	14.8	18.5	15.3	15.3	17.9	17.7	17.5	18.2	16.3	16.6	19.8	15.5	15.5	20.1	15.3	15.3	16.6	14.7	14.6	21.2	15.0	15.0	12.1	12.0	10.7
Receiving differential .....	.1	15.0	14.8	-	15.3	15.3	-	17.7	17.5	.7	16.3	16.6	-	15.5	15.5	-	15.3	15.3	-	14.7	14.6	-	15.0	15.0	-	12.0	10.7
Uniform cents per hour .....	.1	15.0	14.8	-	15.3	15.3	-	17.7	17.5	.7	16.3	16.6	-	15.5	15.5	-	15.3	15.3	-	14.7	14.6	-	15.0	15.0	-	12.0	10.7
50 cents .....	.1	14.7	-	-	15.3	-	-	17.7	-	.7	16.3	-	-	14.4	-	-	15.3	-	-	14.7	-	-	15.0	-	-	10.7	-
53 cents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75 cents	-	.1	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-
\$1.00	-	.2	14.7	-	-	15.3	-	-	17.5	-	-	16.6	-	-	14.4	-	15.3	-	-	14.6	-	-	15.0	-	-	1.3	10.7
\$1.25	-	-	.1	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-

¹ For definitions of regions, see appendix A, table A-1, footnote 1.

ported. Approximately 7 percent of the workers were in establishments operating other types of shifts or combinations of rotating and alternating shifts; shift differential information for these workers were not collected.

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

39

Table 19. Paid holidays

(Percent of production workers in petroleum refineries with formal provisions for paid holidays, United States and regions,¹ September 1988)

Number of paid holidays	United States	East Coast	Western Pennsylvania-West Virginia	Midwest I	Midwest II	Texas-Louisiana Gulf Coast	Texas Inland-North Louisiana-Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Workers in establishments providing paid holidays	100	100	100	100	100	100	100	100	100
8 days	1	-	7	-	-	-	7	-	-
9 days	3	8	-	8	6	-	16	-	-
10 days	89	61	50	83	94	100	77	100	90
10 days plus 1 half day	(²)	-	13	-	-	-	-	-	-
11 days	6	31	30	8	-	-	-	-	10

¹ For definitions of regions, see appendix A, table A-1, footnote 1.

² 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 20. Paid vacations

(Percent of production workers in petroleum refineries with formal provisions for paid vacations after selected periods of service, United States and regions,¹ September 1988)

Vacation policy	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana- Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Method of payment									
Workers in establishments providing paid vacations	100	100	100	100	100	100	100	100	100
Length-of-time payment	100	100	100	100	100	100	100	100	100
Amount of vacation pay²									
After 6 months of service:									
1 week	35	35	13	15	-	48	23	10	52
Over 1 and under 2 weeks	1	-	13	5	-	-	-	-	-
2 weeks	1	-	-	7	-	-	-	-	-
After 1 year of service:									
1 week	2	-	48	-	6	-	7	-	-
2 weeks	97	100	39	100	94	100	93	100	100
Over 2 and under 3 weeks	(³)	-	13	-	-	-	-	-	-
After 2 years of service:									
1 week	1	-	22	-	-	-	-	-	-
2 weeks	98	100	66	100	92	100	100	100	100
Over 2 and under 3 weeks	1	-	13	-	8	-	-	-	-
After 3 years of service:									
1 week	(³)	-	7	-	-	-	-	-	-
2 weeks	97	100	80	88	92	100	100	100	100
Over 2 and under 3 weeks	1	-	13	-	8	-	-	-	-
3 weeks	2	-	-	12	-	-	-	-	-
After 4 years of service:									
1 week	(³)	-	7	-	-	-	-	-	-
2 weeks	94	100	80	88	85	98	100	100	89
Over 2 and under 3 weeks	1	-	13	-	8	-	-	-	-
3 weeks	5	-	-	12	7	2	-	-	11
After 5 years of service:									
2 weeks	2	-	7	8	-	-	-	-	-
3 weeks	98	100	80	92	100	100	100	100	100
Over 3 and under 4 weeks	(³)	-	13	-	-	-	-	-	-
After 8 years of service:									
2 weeks	1	-	7	3	-	-	-	-	-
3 weeks	99	100	80	97	100	100	100	100	100
Over 3 and under 4 weeks	(³)	-	13	-	-	-	-	-	-

See footnotes at end of table.

Table 20. Paid vacations—Continued

(Percent of production workers in petroleum refineries with formal provisions for paid vacations after selected periods of service, United States and regions,¹ September 1988)

Vacation policy	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana- Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
Amount of vacation pay²—Continued									
After 10 years of service:									
3 weeks	5	8	22	8	8	-	23	-	-
4 weeks	95	92	66	92	92	100	77	100	100
Over 4 and under 5 weeks	(³)	-	13	-	-	-	-	-	-
After 12 years of service:									
3 weeks	4	8	22	8	-	-	23	-	-
Over 3 and under 4 weeks	1	-	-	-	8	-	-	-	-
4 weeks	95	92	66	92	92	100	77	100	100
Over 4 and under 5 weeks	(³)	-	13	-	-	-	-	-	-
After 15 years of service:									
3 weeks	1	-	7	3	-	-	7	-	-
4 weeks	98	100	80	91	100	100	93	100	100
Over 4 and under 5 weeks	(³)	-	13	-	-	-	-	-	-
5 weeks	1	-	-	6	-	-	-	-	-
After 20 years of service:									
3 weeks	1	-	7	-	-	-	7	-	-
4 weeks	2	8	-	3	4	-	16	-	-
5 weeks	95	92	80	91	88	100	77	100	100
Over 5 and under 6 weeks	1	-	13	-	8	-	-	-	-
6 weeks	1	-	-	6	-	-	-	-	-
After 25 years of service:									
3 weeks	1	-	7	-	-	-	7	-	-
4 weeks	2	-	-	3	4	-	16	-	-
5 weeks	94	100	80	91	88	100	71	68	100
Over 5 and under 6 weeks	1	-	13	-	8	-	-	-	-
6 weeks	2	-	-	6	-	-	7	32	-
After 30 years of service:⁴									
3 weeks	1	-	7	-	-	-	7	-	-
4 weeks	2	-	-	3	4	-	16	-	-
5 weeks	8	16	15	5	14	6	-	16	5
Over 5 and under 6 weeks	1	-	-	-	8	-	-	-	-
6 weeks	89	84	78	92	74	94	77	84	95

¹ For definitions of regions, see appendix A, table A-1, footnote 1.

² 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. The incidence of vacation bonus plans also was studied, but no refineries reported these plans in 1988.

³ Less than 0.5 percent.

⁴ 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 21. Health, insurance, and retirement plans

(Percent of production workers in petroleum refineries with specified health, insurance, and retirement plans,¹ United States and regions,² September 1988)

Type of plan	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana- Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Workers in establishments offering:									
Life insurance	100	100	100	100	100	100	100	100	100
Noncontributory plans	79	84	100	64	62	84	77	74	83
Accidental death and dismemberment insurance	81	64	100	79	71	86	100	56	77
Noncontributory plans	58	48	84	48	33	66	77	36	56
Sickness and accident insurance or sick leave or both ³	100	100	100	100	100	100	100	100	100
Sickness and accident insurance	33	43	100	51	13	21	26	20	43
Noncontributory plans	31	43	100	49	13	21	7	10	43
Sick leave (full pay, no waiting period)	78	100	-	72	79	76	86	73	91
Sick leave (partial pay or waiting period)	17	-	30	12	21	24	14	27	9
Long-term disability insurance	56	84	55	44	53	55	50	68	59
Noncontributory plans	36	64	24	10	26	40	30	21	53
Hospitalization, surgical, and medical insurance	99	100	100	100	100	100	100	100	96
Noncontributory plans	27	35	59	21	-	29	14	20	38
Health maintenance organizations	59	79	-	88	64	50	7	33	78
Noncontributory plans	10	15	-	8	-	8	-	-	27
Dental care	98	100	85	95	94	100	93	100	100
Noncontributory plans	26	35	46	8	-	34	7	36	32
Vision care	33	28	14	29	22	28	7	42	69
Noncontributory plans	17	12	-	8	-	21	7	36	27
Alcohol and drug abuse treatment	96	100	69	100	86	100	77	95	100
Noncontributory plans	29	35	28	26	-	29	14	31	48
Hearing care	27	27	-	5	8	36	13	27	46
Noncontributory plans	22	27	-	-	-	36	7	20	27
Retirement plans ⁴	99	100	100	100	100	100	100	100	95
Pensions	98	100	100	100	96	98	93	95	95
Noncontributory plans	97	100	100	100	88	98	93	95	95
Lump sum	26	4	-	53	15	27	7	35	25
Noncontributory plans	7	-	-	19	4	2	7	16	11
Other retirement	7	-	15	13	-	11	-	-	-

¹ For definitions of items, see appendix A. 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.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ Unduplicated total of workers receiving sickness and accident insurance and sick leave shown separately.

⁴ Unduplicated total of workers covered by pension plans and severance pay shown separately.

NOTE: Dashes indicate that no data were reported.

Table 22. Health plan participation

(Percent of production workers in petroleum refineries participating in specified health plans,¹ United States and regions,² September 1988)

Type of plan	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
All workers	100	100	100	100	100	100	100	100	100
Hospitalization, surgical, and medical insurance	79	72	99	72	71	88	92	89	55
Noncontributory plans	23	35	59	12	-	27	14	20	27
Health maintenance organization	19	24	-	27	25	10	4	9	43
Noncontributory plans	2	⁽³⁾	-	-	-	1	-	-	11
Dental care	93	95	84	91	92	94	89	98	98
Noncontributory plans	26	35	45	8	-	34	7	35	32
Vision care	24	16	14	17	14	22	7	39	54
Noncontributory plans	17	12	-	8	-	21	7	35	27
Alcohol and drug abuse treatment	94	95	69	99	84	98	74	93	94
Noncontributory plans	29	35	28	26	-	29	14	30	48
Hearing care	25	27	-	5	8	36	13	26	39
Noncontributory plans	22	27	-	-	-	36	7	20	27

¹ For definitions of items, see appendix A. Includes those plans for which the employer pays at least part of the cost. "Noncontributory plans" include only those financed entirely by the employer.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ 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 23. Other selected benefits

(Percent of production workers in petroleum refineries with formal provisions for selected benefits,¹ United States and regions,² September 1988)

Benefit	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II	Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
Workers in establishments with provisions for:									
Funeral leave	100	100	100	100	100	100	100	100	100
Jury-duty leave	100	100	100	100	100	100	100	100	100
Technological severance pay	73	35	41	71	71	80	87	54	79
Cost-of-living adjustments	7	-	-	-	-	17	-	-	-
Based on BLS Consumer Price Index	7	-	-	-	-	17	-	-	-
Work clothing allowance ³	89	100	84	92	96	90	35	94	93
Clothing provided	83	100	84	81	89	84	35	94	83
Monetary allowance given	1	-	-	6	-	-	-	-	-
Combination clothing and monetary allowance	5	-	-	5	6	6	-	-	10
Maintenance craft consolidation plans ⁴	52	65	33	54	79	55	34	91	25
All crafts represented	24	40	18	25	15	22	27	51	21
Selected crafts represented	28	25	15	28	64	33	7	40	5
Thrift or savings plans	86	100	15	92	80	96	67	79	74
Percent of eligible workers participating:									
100 percent	8	16	-	13	4	11	-	-	-
95-99	23	34	-	32	26	28	13	27	4
75-94	29	37	15	39	49	26	23	42	15
50-74	24	12	-	8	-	32	31	10	39
25-49	3	-	-	-	-	-	-	-	15

¹ For definitions of items, see appendix A.

² For definitions of regions, see appendix A, table A-1, footnote 1.

³ Includes data for establishments primarily providing protective garments or a monetary allowance for them to a majority of production employees who are required to wear protective clothing. Protective garments include coveralls, overalls, coats, smocks, and acid-resistant clothing, and exclude boots, glasses, hats, and gloves.

⁴ Includes data for refineries that have abolished rigid lines of craft duties and have established the team approach in their maintenance departments. The team method provides for training maintenance workers to do a variety of jobs.

NOTE: Dashes indicate that no data were reported.

Appendix A. Scope and Method of Survey

Scope of survey

The survey included establishments engaged primarily in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, and other products from crude petroleum and its fractionation products, through straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking, or other processes (SIC 2911 as defined in the 1972 edition of the *Standard Industrial Classification Manual*, prepared by the U.S. Office of Management and Budget). Separate auxiliary units, such as central offices, were excluded.

Establishments 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 establishments within the scope of the survey. To obtain appropriate accuracy at minimum cost, a greater proportion of large than of small establishments was studied. In combining the data, each establishment was given an appropriate weight. All estimates are presented, therefore, as relating to all establishments in the industry, excluding only those below the minimum size at the time of reference of the universe data.

Establishment definition

An establishment, for purposes of this study, is a single physical location where industrial/manufacturing operations are performed. An establishment is not necessarily identical with a company, which may consist of one establishment or more. The terms "establishment," "refinery," and "facility" are 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 composition of the industry's labor force, rather than as precise measures of employment.

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 property, 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 and salary administration and in collective bargaining; and appropriate representation of the entire wage structure in the industry. Working supervisors, apprentices, learners, beginners, trainees, and part-time, handicapped, 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 are performance bonuses and lump-sum payments, as well as profit-sharing payments, attendance bonuses, Christmas or yearend bonuses, and other nonproduction bonuses.

Average (mean) hourly rates or earnings for each occupation were calculated by weighting each rate (or hourly earn-

ings) by the number of workers receiving the rate, totaling, and dividing by the number of individuals. The hourly earnings of salaried workers, if any, were obtained by dividing straight-time salary by the normal (or standard) hours to which the salary corresponds.

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

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 the Metropolitan Statistical Areas (MSA'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. In New England, where the city and town are administratively more important than the county, they are the units used in defining MSA's.

Labor-management agreements

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

Method of wage payment

Tabulations by method of wage payment relate to the number of workers paid under various time and incentive wage systems. Formal rate structures for time-rated workers provide single rates or a range of rates for individual job categories. In the absence of a formal rate structure, pay rates are determined primarily by the qualifications of the individual worker. A single-rate structure is one in which the same rate is paid to all experienced workers in the same job classification. Learners, apprentices, or probationary workers may be paid according to rate schedules which start below the single rate and permit the workers to achieve the full job rate over a period of time. An experienced worker occasionally may be paid above or below the single rate for special reasons, but such payments are exceptions. Range-of-rate plans are those in which the minimum, maximum, or both of these rates paid experienced workers for the same job

are specified. Specific rates of individual workers within the range may be determined by merit, length of service, or a combination of these. Incentive workers are classified under piecework or bonus plans. Piecework is work for which a predetermined rate is paid for each unit of output.

Scheduled weekly hours

Data on weekly hours refer to the predominant work schedule for full-time production workers employed on the day shift. Cyclical workweeks are those where no predominant schedule prevailed in the employing establishment.

Shift practices

Data relate to workers employed under the conditions specified. Workers assigned to rotating shifts work successively on day, evening, and night shifts. Workers assigned to fixed shifts regularly work either a day, evening, or night schedule.

Employee benefits

Employee benefits in an establishment were considered applicable to production workers if they applied to half or more of such workers 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 summaries of vacation plans are limited to formal arrangements and exclude informal plans whereby time off with pay is granted at the discretion of the employer or supervisor. Payments 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.

Health-care, insurance, and retirement plans. Data are presented for health-care, insurance, and retirement plans for which the employer pays all or a part of the cost, excluding programs required by law such as worker's compensation and Social Security.¹ Among plans included are those underwritten by a commercial insurance company and those paid directly by the employer from current operating funds or from a fund set aside for this purpose.

Death benefits are included as a form of life insurance. 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 plans² which provide full pay or a portion 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 benefits. Payments may be at full or partial pay, but are almost always reduced by Social Security, workers' compensation, and private pension benefits payable to the disabled employee.

Hospitalization, surgical, and medical insurance refers to plans providing for complete or partial payment for hospital room charges, inpatient surgery and doctors' fees. These plans typically cover other expenses, such as outpatient surgery and prescription drugs, and may be underwritten by a commercial insurance company or a nonprofit organization, or they may be a form of self-insurance.

A health maintenance organization (HMO) provides comprehensive health care services to its members for fixed periodic payments rather than indemnification or reimbursement for medical, surgical, and hospital expenses.

Dental insurance covers routine dental work, such as fillings, extractions, and X-rays. Excluded are plans which cover only oral surgery or accidental injury.

¹ Temporary disability insurance, which provides benefits to covered workers disabled by injury or illness which is not work-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 the survey 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; 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.

² An establishment is considered as having a formal plan if it specifies at least the minimum amount 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.

Vision care covers routine eye examinations and eyeglasses. Excluded are plans which cover only certain kinds of surgery or care required as a result of an accident.

Hearing care plans provide at least partial payments 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. Data are presented separately for lump-sum retirement pay (one payment or several over a specified period of time) made to employees upon retirement. Establishments providing both lump-sum retirement payments and retirement pensions to employees were considered as having both retirement pensions and lump-sum retirement plans; however, establishments having optional plans providing employees a choice of either lump-sum retirement payments or pensions were considered as having only retirement 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.*³ Data relate to formal plans that provide at least partial payment for time lost as a result of attending funerals of specified family members or serving as a juror.

Cost-of-living adjustments. Data relate to formal plans that adjust wages in keeping with changes in the BLS Consumer Price Index or some other measure.

Technological severance pay. Data relate to formal plans that provide payments to employees permanently separated from the company because of a technological change, work force reduction, or facility closing.

Thrift or savings plan. Data relate to formal provisions for thrift or savings plans to which the employer makes monetary contributions beyond administrative costs.

Clothing allowance. Data relate to formal company provisions for supplying protective garments or a monetary allowance to a majority of production workers who are required to wear such clothing.

³ When 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.

Table A-1. Estimated number of establishments and employees within scope of study and number studied, petroleum refining, September 1988

Region ¹	Number of establishments ²		Workers in establishments		Actually studied ³
	Within scope of study	Actually studied	Within scope of study		
			Total ⁴	Production workers	
United States	126	95	66,304	43,958	54,755
East Coast	9	9	5,112	3,361	5,112
Western Pennsylvania-West Virginia	8	8	2,285	1,438	2,285
Midwest I	17	13	10,043	6,735	8,674
Midwest II	16	12	5,263	3,641	4,450
Texas-Louisiana Gulf Coast	29	18	26,169	17,727	19,417
Texas Inland-North Louisiana-Arkansas	12	9	3,922	2,586	3,174
Rocky Mountain	11	11	2,029	1,363	2,029
West Coast	24	15	11,481	7,107	9,614

¹ The regions as defined for this study: *East Coast*—Connecticut, Delaware, District of Columbia, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, South Carolina, Vermont, Virginia, and the following counties in Pennsylvania: Bradford, Columbia, Dauphin, Montour, Northumberland, Sullivan, York, and all counties east thereof; *Western Pennsylvania-West Virginia*—West Virginia and those counties in Pennsylvania not included in the East Coast region; *Midwest I*—Indiana, Illinois, Kentucky, Michigan, Ohio, and Tennessee; *Midwest II*—Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, and Wisconsin; *Texas-Louisiana Gulf Coast*—the following counties in Texas: Aransas, Brazoria, Calhoun, Cameron, Chambers, Fort Bend, Galveston, Hardin, Harris, Jackson, Jasper, Jefferson, Kenedy, Kleburg, Liberty, Matagorda, Montgomery, Newton, Nueces, Orange, Polk, Refugio, San Jacinto, San Patricio, Tyler, Victoria, Waller, Wharton, and Willacy; the following parishes in Louisiana: Avoyelles, East Feliciana, Pointe Coupee, Rapides, St.

Helena, Tangipahoa, Vernon, Washington, West Feliciana, and all parishes south thereof; the following counties in Mississippi: George, Hancock, Harrison, Jackson, Pearl River, and Stone; and the following counties in Alabama: Baldwin and Mobile; *Texas Inland-North Louisiana-Arkansas*—Arkansas, New Mexico, and those parts of the States of Alabama, Louisiana, Mississippi, and Texas not included in the Texas-Louisiana Gulf Coast; *Rocky Mountain*—Colorado, Idaho, Montana, Utah, and Wyoming; *West Coast*—Arizona, California, Nevada, Oregon, and Washington. Alaska and Hawaii were not included in the survey.

² Includes only establishments with 100 workers or more at the time of reference of the universe data.

³ Data relate to total employment in establishments actually visited.

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

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 are instructed to exclude supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers.

The titles and codes below the job titles in this appendix are 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, 5 of the 11 maintenance occupations studied separately in petroleum refineries had the same SOC code (613—Industrial machinery repairers). Therefore, in comparing the results of this survey with other sources, differences in occupational definitions should be taken into consideration.

Maintenance

Boilermaker

(6814: Boilermaker)

Assembles and repairs boilers, tanks, and pressure vessels. Work involves most of the following: Interpreting written instructions, specifications, and blueprints; planning and laying out work; using a variety of hand and power tools and applying knowledge of the working properties of metals; and positioning, aligning, fitting, and joining together parts (by bolting, welding, or other means) in assembly and repair work. In general, the boilermaker's work normally requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Carpenter

(6422: Carpenter)

Performs the carpentry duties necessary to construct and maintain in good repair building woodwork and equipment such as bins, cribs, counters, benches, partitions, doors, floors, stairs, casings, and trim made of wood. Work involves most of the following: Planning and laying out of work from blueprints, drawings, models, or verbal instructions; using a variety of carpenter's handtools, portable power tools, and standard measuring instruments; making standard shop computations relating to dimensions of work; and selecting materials necessary for the work. In general, the work of the maintenance carpenter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Electrician

(615: Electrical and electronic equipment repairer)

(6432: Electrician)

Performs a variety of electrical trade functions such as the installation, maintenance, or repair of equipment for the generation, distribution, or utilization of electric energy. Work involves most of the following: Installing or repairing any of a variety of electrical equipment such as generators, transformers, switchboards, controllers, circuit breakers, motors, heating units, conduit systems, or other transmission equipment; working from blueprints, drawings, layouts, or other specifications; locating and diagnosing trouble in the electrical system or equipment; working standard computations relating to load requirements of wiring or electrical equipment; and using a variety of electrician's handtools and measuring and testing instruments. In general, the work of the maintenance electrician requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Helper, maintenance trades

(863: Helper, mechanic and repairer)

Assists one or more workers in the skilled maintenance trades by performing specific or general duties of lesser skill, such as keeping a worker supplied with materials and tools;

cleaning working area, machine, and equipment; assisting journeyman by holding materials or tools; and performing other unskilled tasks as directed by journeyman. The kind of work the helper is permitted to perform varies from trade to trade: In some trades, the helper is confined to supplying, lifting, and holding materials and tools, and cleaning working areas; and in others, the helper is permitted to perform specialized machine operations, or parts of a trade that are also performed by workers on a full-time basis.

Instrument repairer

(613: Industrial machinery repairer)

Installs, maintains, adjusts, and repairs manual, pneumatic, electric, and/or electronic measuring, recording, and regulating instruments in a refinery. Work involves most of the following: Inspecting, testing, and adjusting instruments periodically, determining cause of trouble in instruments not functioning properly and making necessary repairs or adjustments; disconnecting inaccurate or damaged instruments and replacing them; examining mechanism and cleaning parts; replacing worn or broken parts; assembling instruments and installing them on testing apparatus; and calibrating instruments to established standard.

Machinist

(613: Industrial machinery repairer)

Produces replacement parts and new parts in making repairs of metal parts of mechanical equipment operated. Work involves most of the following: Interpreting written instructions and specifications; planning and laying out of work; using a variety of machinist's handtools and precision measuring instruments; setting up and operating standard machine tools; shaping of metal parts to close tolerances; making standard shop computations relating to dimensions of work, tooling, feeds and speeds of machining; knowledge of the working properties of the common metals; selecting standard materials, parts, and equipment required for this work; and fitting and assembling parts into mechanical equipment. In general the machinist's work normally requires a rounded training in machine shop practice usually acquired through a formal apprenticeship or equivalent training and experience.

Mechanic, general

(613: Industrial machinery repairer)

Performs the work of two or more skilled maintenance trades rather than specializing in one trade or one type of maintenance work. This classification includes workers regularly performing at least two types of skilled maintenance work, such as pipefitting, boilermaking, painting, insulating, welding, machining, machine and equipment repairing, carpentry, and electrical work, among others. In general, the work of a general mechanic requires rounded training and experience usually acquired through a formal appren-

ticeship or equivalent training and experience. Exclude workers who only make minor repairs or adjustments.

Mechanic, machinery

(613: Industrial machinery repairer)

Repairs machinery or mechanical equipment. Work involves most of the following: Examining machines and mechanical equipment to diagnose source of trouble; dismantling or partly dismantling machines and performing repairs that mainly involve the use of handtools in scraping and fitting parts; replacing broken or defective parts with items obtained from stock; ordering the production of a replacement part by a machine shop or sending the machine to a machine shop for major repairs; preparing written specifications for major repairs or for the production of parts ordered from machine shops; reassembling machines; and making all necessary adjustments for operation. In general, the work of a machinery maintenance mechanic requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience. Excluded from this classification are workers whose primary duties involve setting up or adjusting machines.

Mechanic, motor vehicle

(611: Vehicle and mobile equipment mechanic and repairer)

Repairs, rebuilds, or overhauls major assemblies of internal combustion automobiles, buses, trucks, or tractors. Work involves most of the following: Diagnosing the source of trouble and determining the extent of repairs required; replacing worn or broken parts such as piston rings, bearings, or other engine parts; grinding and adjusting valves; rebuilding carburetors; overhauling transmissions; and repairing fuel injection, lighting, and ignition systems. In general, the work of the motor vehicle mechanic requires rounded training and experience usually acquired through formal apprenticeship or equivalent training and experience.

This classification does not include mechanics who repair customers' vehicles or who only perform minor repair and tuneup of motor vehicles. It does, however, include fully qualified journeymen mechanics even though most of their time may be spent on minor repairs and tuneups.

Pipefitter

(645: Plumber, pipefitter, and steamfitter)

Installs or repairs water, steam, gas, or other types of pipe and pipefittings. Work involves most of the following: Laying out work and measuring to locate position of pipe from drawings or other written specifications; cutting various sizes of pipe to correct lengths with chisel and hammer or oxyacetylene torch or pipe-cutting machine; threading pipe with stocks and dies; bending pipe by hand-driven or power-driven machines; assembling pipe with couplings and fastening pipe

to hangers; making standard shop computations relating to pressures, flow, and size of pipe required; and making standard tests to determine whether finished pipes meet specifications. In general, the work of the maintenance pipefitter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience. Workers primarily engaged in installing and repairing building sanitation or heating systems are excluded.

Welder, hand

(613: Industrial machinery repairer)

Performs the welding duties necessary to maintain plant machinery and equipment in good repair, by fusing (welding) metal objects together in the fabrication of metal shapes and in repairing broken or cracked metal objects. Work involves most of the following: Planning and laying out work from written or oral instructions and specifications; knowledge of welding properties of a variety of metals and alloys; setting up of work and determining operation sequence; welding a variety of items as necessary; and ability to weld with gas and arc apparatus. In general, the work of the maintenance welder requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Processing

Assistant operator

(695: Petroleum plant operator)

(First helper)

Helps chief operator maintain operation of stills, (*e.g.*, straight-run, combination units, and hydro, catalytic, and other cracking stills) in which crude or other oil is heated and separated into its various components. Work involves most of the following: Patrolling unit or instrument panel regularly to check on operations; observing instrument indications of pressures, temperatures, liquid levels, etc.; and recording readings on log or other operational records; maintaining desired liquid levels in equipment and controlling temperatures; adjusting or regulating manual or automatic controls to maintain operations within specified tolerances; drawing periodic samples and/or running tests such as specific gravity, viscosity, etc., reporting frequently to chief operator as to operating condition of unit; and lubricating and cleaning equipment. May check operation and adjust speed of pumps which circulate products through unit; and may make minor repairs to equipment.

Chief operator

(695: Petroleum plant operator)

(First operator; process operator)

Is responsible for the operation of one or a battery of stills (*e.g.*, straight-run, combination units, and hydro, catalytic, and other cracking stills) in which crude or other oil is heated and separated into its various components. Work involves

most of the following: Directing and coordinating the activities of the various crew members on the still; interpreting instructions and operational requirements; keeping informed of operating conditions by patrolling entire unit periodically to check on operating conditions; observing instrument indications and chart records of rates, pressures, temperatures, liquid levels, etc.; directing the drawing of periodic samples; interpreting results of tests; making or directing operation and control changes as necessary to maintain operations within specified tolerances; maintaining or directing the preparation of daily operational log or other records; and preparing equipment for maintenance work and directing repairs. May be required to use computer data in certain phases of work. Operators on one-man operations are excluded.

Chief operator's helper

(695: Petroleum plant operator)

Tends operation of burners to maintain required temperature in furnace of a petroleum products still. Work involves most of the following: Following instructions received from chief operator or chief operator's helper of previous shift specifying temperature to be maintained; reading temperature, pressure, and flow gauges to determine operation of still, and adjusting valves controlling flow of fuel to burners; observing color of burner flames or gas issuing from stack, and regulating supply of air to obtain correct combustion; recording gauge and meter readings and/or other pertinent information on log sheet or other records; and reporting irregularities of still operation to chief operator. May clean burners and/or remove and replace plates covering openings that provide access to interior of still for cleaning.

Compounder

(7664: Mixing and blending-machine operator and tender)
(Blender)

Blends or compounds various lubricating oils and/or greases according to specifications. Work involves most of the following: Ascertaining location of various oils to be compounded and pumping or arranging for pumper to transfer oils to proper lines; regulating valves to admit specified quantities of various ingredients to mixing tank, following prescribed formulas; setting air and heat controls on kettles and tanks as necessary; and maintaining record of composition, quantities of components used, density, and/or other pertinent information. May make simple control tests to determine whether products are meeting specifications. In addition, may also blend new mixtures of oils and submit them to laboratory analysis.

Laborer

(8769: Manual occupations, not elsewhere classified)

Performs miscellaneous laboring tasks in plants or out-

side work areas, that require no formal training or previous experience. Generally, learning how to do the work is limited to gaining a familiarity with work areas, with acceptable ways of doing specific tasks, and with safety regulations. Average standards of performance can usually be attained after a brief period of service. Specific assignments among laboring tasks include: Loading and unloading, stacking, moving of materials, cleaning work areas and equipment, digging and shoveling. Tools such as crowbars, picks, shovels, wheelbarrows, handtrucks, and other lifting and excavating devices may be employed on specific assignments.

Loader, tank cars or trucks

(8319: Miscellaneous material moving equipment operator)
(Tank-car loader; truck loader)

Loads gasoline, kerosene, and/or various oils into tank cars or trucks according to specifications. Work involves: Connecting or assisting in connecting hose to coupling, or swinging loading spout over dome; opening valves to allow liquid to flow into tank, or starting or notifying pumper to start pumps; and filling tank to proper level. May perform a variety of other tasks relating to shipment of product. May also gauge or sample shipping tanks.

Package filler, machine

(7662: Packaging and filling-machine operator and tender)

Tends the operation of an automatic or semiautomatic machine which fills containers with specified weight or amount of commodity being packaged. Work involves one or more of the following: Feeding empty containers to machine; making minor adjustments to weighing or dispensing devices in order to maintain proper operation; and removing filled containers from machine. Workers who tend filling machines that also cap or close filled containers are included.

Pumper

(695: Petroleum plant operator)
(Transfer pumper; water pumper)

Is responsible for operating one or more power-driven pumps to produce forced circulation of petroleum products and water through units during processing, or to effect the movement of water, chemical solutions, or petroleum products from one tank or processing unit to another, or between tanks and processing units, to points of loading or unloading trucks, tank cars, or boats. Work involves most of the following: Interpreting specifications to determine which lines should be used for individual liquids; connecting lines from pumps to storage tanks or processing units; regulating pipeline valves so that liquids are pumped according to written specifications or oral instructions; checking measuring instruments or gauging contents of storage tanks; and maintaining operational records or log. May draw samples from tanks or pipelines for laboratory analysis, or

may make specific gravity, visual color, or other tests to determine whether products are meeting specifications. Exclude gaugers whose primary duties involve measuring quantity and temperature of oil in storage tanks and controlling flow of oil into pipelines.

Pumper's helper

(695: Petroleum plant operator)

Opens and closes pipeline valves at direction of pumper to divert flow of liquids to proper location. May assist in starting or stopping pumps. May gauge contents of tanks, draw samples of products through bleeder valves on pipelines for laboratory analysis, or make specific gravity and visual color tests.

Treater, oils

(695: Petroleum plant operator)
(Treater, first class)

Is responsible for the treating of gasoline, kerosene, distilled oils, light oils, naphthas, wax, and other petroleum products with chemicals, steam, water, or air to remove sulphur and/or other impurities. Work involves most of the following: Interpreting instructions and operational requirements; making frequent inspections of units to check on operations; observing and recording readings of temperature, pressure, flow gauges and meters; making or directing operation and control changes as necessary to maintain operations; maintaining daily log or other operational records; preparing equipment for maintenance work; and testing equipment after repairs have been made. May direct activities of one or more helpers and may also operate pumps to circulate liquids through the units.

Inspecting and Testing

Routine tester, laboratory

(3833: Petroleum technologist and tester)

Performs various standard laboratory tests on different petroleum products to determine certain chemical and/or physical properties of the product. Test results, submitted to chemists or to operators of the various departments, are used to monitor and control the distillation and treating of the products. Work involves: Making various tests, such as viscosity, specific gravity, flash and fire points, color, pour, water and sediment, melting point, penetration, doctor solution, distillation and corrosion; and submitting results to chemist or to heads of processing units. May interpret results of tests. Chemists and laboratory laborers (bottle washers, *etc.*) are excluded.

Recording and Control

Stock clerk

(4754: Stock and inventory clerk)

Receives, stores, and issues equipment, material, merchandise, or tools in a stockroom or storeroom. Work involves a combination of the following: Checking incoming orders; storing supplies; applying identifications to articles; issuing supplies; taking periodic inventory or keeping perpetual inventory; making up necessary reports; and requesting or ordering supplies when needed. Stockroom laborers, tool crib attendants, and employees who supervise stock clerks and laborers are excluded.

Material Movement

Power-truck operator

(8318: Industrial truck and tractor equipment operator)

Operates a manually controlled gasoline- or electric-powered truck or tractor to transport goods and materials of all kinds about a warehouse, manufacturing plant, or other establishment.

For wage study purposes, workers are classified by type of truck, as follows:

Forklift

Other than forklift

Truckdriver

(821: Motor vehicle operator)

Drives a truck within a city or industrial area to transport materials, merchandise, equipment, or workers between various types of establishments such as: Manufacturing plants, freight depots, warehouses, wholesale and retail establishments or between retail establishments and customers' houses or places of business. May also load or unload truck with or without helpers, make minor mechanical repairs, and keep truck in good working order. Sales-route and over-the-road drivers are excluded.

For wage study purposes, truckdrivers are classified by type and rated capacity of truck, as follows:

Truckdriver, light truck

(straight truck, under 1 1/2 tons,
usually 4 wheels)

Truckdriver, medium truck

(straight truck, 1 1/2 to 4 tons, inclusive,
usually 6 wheels)

Truckdriver, heavy truck

(straight truck, over 4 tons,
usually 10 wheels)

Truckdriver, tractor-trailer

Truckdriver, not classifiable by category

(Truckdrivers in positions with work characteristics as described should be reported under this category when the information needed to classify them according to category

is not available or they are not assigned to a particular category of truck.)

Custodial

Guard

(5144: Guards and police, except public service)

Protects property from theft or damage, or persons from hazards or interference. Duties involve serving at a fixed post, making rounds on foot or by motor vehicle, or escorting persons or property. May be deputized to make arrests. May also help visitors and customers by answering questions and giving directions. Guards employed by establishments which provide protective services on a contract basis are included in this occupation.

For wage study purposes, guards are classified as follows:

Guard I

Carries out instructions primarily oriented toward insuring that emergencies and security violations are readily discovered and reported to appropriate authority. Intervenes directly only in situations which require minimal action to safeguard property or persons. Duties require minimal training. Commonly, the guard is not required to demonstrate physical fitness. May be armed, but generally is not required to demonstrate proficiency in the use of firearms or special weapons.

Guard II

Enforces regulations designed to prevent breaches of security. Exercises judgment and uses discretion in dealing with emergencies and security violations encountered. Determines whether first response should be to intervene directly (asking for assistance when deemed necessary and time allows), to keep situation under surveillance, or to report situation so that it can be handled by appropriate authority. Duties require specialized training in methods and techniques of protecting security areas. Commonly, the guard is required to demonstrate continuing physical fitness and proficiency with firearms or other special weapons.

Not classifiable by level

Workers in positions with work characteristics as described, and within the range of defined levels, should be reported under this classification when the information needed to classify them according to the level definitions is not available.

Janitor, porter, or cleaner

(5244: Janitors and cleaners)

Cleans and keeps in an orderly condition factory working areas and washrooms, or premises of an office, or other

establishment. Duties involve a combination of the following: Sweeping, mopping, or scrubbing, and polishing floors; removing chips, trash, and other refuse; dusting equipment, furniture, or fixtures; polishing metal fixtures or trimmings;

and providing supplies and minor maintenance services; cleaning lavatories, showers, and restrooms. Workers who specialize in window washing are excluded.

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 Center, P.O. Box 2145, Chicago, Ill. 60690. Order by title and GPO Stock Number. Bulletins marked with an asterisk (*) are available only from the Chicago address. Bulletins that are out of print are available for reference at leading public, college, or university libraries or at the Bureau's Washington or regional offices.

Manufacturing

Basic Iron and Steel, 1983. BLS Bulletin 2221. \$2.25*
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 2343.
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.
\$2. GPO Stock No. 029-001-02965-9
Structural Clay Products, 1986. BLS Bulletin 2288. \$3.25*
Synthetic Fibers, 1985. BLS Bulletin 2268. \$1.50*
Textile Dyeing and Finishing, 1985. BLS Bulletin 2260. \$3.25*
Textile Mills, 1985, BLS Bulletin 2265. \$5.50*
Wood Household Furniture, 1986. BLS Bulletin 2283. \$5.50*

Nonmanufacturing

Auto Dealer Repair Shops, 1988. BLS Bulletin 2337.
\$3.25. GPO Stock No. 029-001-03004-5
Banking, 1985. BLS Bulletin 2269. \$4*
Bituminous Coal Mining, 1988. BLS Bulletin 2342.
Certificated Air Carriers, 1984. BLS Bulletin 2241. \$2*
Computer and Data Processing Services, 1987. BLS Bulletin
2318. \$3.50. GPO Stock No. 029-001-02988-8
Contract Cleaning Services, 1986. BLS Bulletin 2299.
\$3. GPO Stock No. 029-001-02970-5
Department Stores, 1986. BLS Bulletin 2311. \$4.75*
Electric and Gas Utilities, 1988. BLS Bulletin 2338. \$4.75*
Hospitals, 1985. BLS Bulletin 2273. \$12*
Hotels and Motels, 1988. BLS Bulletin 2335. \$3.75.
GPO Stock No. 029-001-03006-1
Life and Health Insurance Carriers, 1986. BLS Bulletin 2293.
\$5*
Nursing and Personal Care Facilities, 1985.
BLS Bulletin 2275. \$5. GPO Stock No. 029-001-02921-7
Oil and Gas Extraction, 1988. BLS Bulletin 2334.
Temporary Help Supply, 1987. BLS Bulletin 2313.
\$5. GPO Stock No. 029-001-02982-9

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