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Industry  
Wage Survey  
**Petroleum Refining,**  
**April 1971**

Bulletin 1741

U.S. DEPARTMENT OF LABOR  
Bureau of Labor Statistics  
1972

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**U.S. DEPARTMENT OF LABOR  
J. D. Hodgson, Secretary  
BUREAU OF LABOR STATISTICS  
Geoffrey H. Moore, Commissioner  
1972**



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## Preface

This bulletin summarizes the results of a Bureau of Labor Statistics survey of wages and related benefits in petroleum refineries in April 1971. A similar study was conducted by the Bureau in December 1965.

A summary tabulation, providing national and regional information, was issued in February 1972. Copies are available from the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. 20212, or any of its regional offices.

This study was conducted in the Bureau's Office of Wages and Industrial Relations. The analysis was prepared by Edward J. Caramela in the Division of Occupational Wage Structures. Field work for the survey was directed by the Assistant Regional Directors for Operations.

Other reports available from the Bureau's program of industry wage studies, as well as the addresses of the Bureau's regional offices, are listed at the end of this bulletin.



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# Petroleum Refining

## Summary

Straight-time earnings of production and related workers in petroleum refineries averaged \$4.59 an hour in April 1971.<sup>1</sup> Workers in the Texas–Louisiana Gulf Coast region, the major one in terms of employment, averaged \$4.63 an hour. Average hourly earnings in other sections of the country ranged from \$4.77 in the East Coast region to \$3.74 in Western Pennsylvania–West Virginia.<sup>2</sup>

All but 3 percent of the 69,831 workers (virtually all men) covered by the Bureau of Labor Statistics survey had earnings ranging from \$3.50 to \$5.50 an hour; the middle half of the workers earned from \$4.27 to \$4.93.

Among the jobs selected to represent the various skill levels of plant workers, average hourly earnings ranged from less than \$4 for janitors (\$3.66), laborers (\$3.69), and watchmen (\$3.83) to \$5.17 for stillmen—the latter responsible for one or a battery of stills in which oil is heated and separated into its various components. Assistant stillmen, the largest occupational group, averaged \$4.79 an hour. Earnings for the nine skilled maintenance jobs studied separately averaged from \$4.83 to \$4.96.<sup>3</sup>

All plant workers were in establishments providing paid holidays, paid vacations, and at least part of the cost of retirement pension plans and various health insurance benefits. Refineries usually provided 9 paid holidays annually and from 2 to 5 weeks of vacation pay after qualifying periods of service.

## Industry characteristics

The 185 petroleum refineries within scope of the survey employed 69,831 production and related workers in April 1971—down 5 percent from the 73,318 workers recorded in a similar study in December 1965.<sup>4</sup> Although the total number of refineries covered by the two studies was virtually unchanged, a median employment decline of 13 percent was noted for three-fifths of the 73 refineries common to both survey samples, compared with a 10 percent (median) increase in the remaining matched sample establishments.

The industry's output and productivity (output per production worker man-hour) both increased by about

20 percent during the 5-year period between the two studies.<sup>5</sup> In contrast with the employment decline, man-hours of production workers remained relatively unchanged because average weekly overtime hours increased from 2.1 in 1965 to 3.1 for 1970.<sup>6</sup> Computer control, improved instrumentation, and new and better processing techniques (particularly among the larger producing refineries), are among the factors contributing to the industry's increased productivity.

*Products and processes.* Gasoline (including naphtha) was the major product of refineries employing slightly more than nine-tenths of the workers within scope of the survey. Other important products include distillate fuel oil, residual fuel oil, asphalt, kerosene, and petrochemical feedstocks<sup>7</sup> (excluding ethane and liquefied gases). At the time of the survey, one-third of the refineries visited were operating equipment for processing petrochemicals (chemical products derived from hydrocarbon sources such as petroleum or natural gas). In two regions only, (each accounting for less than 5 percent of the industry's work force) were significant proportions of workers employed in refineries primarily manufacturing products other than gasoline. These were Western Pennsylvania–West Virginia, where about three-fifths of the workers were in establishments primarily producing distillate fuel oil or lube oil; and the Texas Inland–North Louisiana–Arkansas region, where one-fourth were in refineries primarily producing asphalt.

Petroleum refining is a relatively large-scale manufacturing operation in which fluids and gas, almost exclusively, are processed. From the receipt of crude oil to

<sup>1</sup> See appendix A for scope and method of survey. Wage data exclude premium pay for overtime and for work on weekends, holidays, and late shifts.

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

<sup>3</sup> See appendix B for job descriptions.

<sup>4</sup> See *Industry Wage Survey: Petroleum Refining, December 1965* (BLS Bulletin 1526, 1966).

<sup>5</sup> *Indexes of Output Per Man-Hour, Selected Industries, 1939 and 1947-70* (BLS Bulletin 1692, 1971). Data for 1970 are preliminary.

<sup>6</sup> *Employment and Earnings, United States, 1909-70* (BLS Bulletin 1312-7), and *Employment and Earnings, Vol. 17, No. 9, March 1971*.

<sup>7</sup> Used as inputs in petrochemical operations for the manufacture of chemical and petrochemical products.

the shipment of the finished products, the flow of production is virtually continuous in closely interrelated refining units. These factors have influenced the high degree of diversification of product and automatic process control in the industry.

*Location.* The Texas–Louisiana Gulf Coast region, largest in terms of employment, accounted for 35 percent of the work force. The Midwest I, East Coast, and West Coast regions each had about 15 percent of the production workers. None of the other four regions had as many as 10 percent.

Refineries in metropolitan areas<sup>8</sup> employed slightly more than four-fifths of the industry's work force. The proportions of workers in such areas were nine-tenths or more in the regions of the East Coast, Midwest I, Texas–Louisiana Gulf Coast, and West Coast, nearly two-thirds in the Rocky Mountain States, and less than one-third in each of the remaining three regions.

*Size of establishment.* Refineries with 1,000 workers or more employed one-half of the industry's workers. The proportions of workers in the smaller refineries (100-999 employees) amounted to one-fourth in the Texas–Louisiana Gulf Coast region, about one-third on the East Coast, one-half on the West Coast, two-thirds in the Midwest I region, and nearly nine-tenths or more in each of the other sections of the country.

*Unionization.* Establishments operating under the terms of collective bargaining agreements employed more than nine-tenths of the industry's workers. Regionally, there was relatively little variation in the proportions of workers in such establishments. Refineries with collective bargaining agreements accounted for slightly higher proportions of the workers in metropolitan areas than in the smaller communities (94 and 87 percent, respectively), and in establishments with 1,000 workers or more (97 percent) than in smaller refineries (88 percent). The Oil, Chemical, and Atomic Workers International Union (AFL-CIO) was the major union in the industry in all regions except the East Coast, where refineries employing a majority of the workers had contracts with independent unions.

*Maintenance craft consolidation plans.* Information was obtained on the incidence and major features of maintenance craft consolidation plans. (These combine two or more crafts into a single job classification, eliminating the rigid lines of craft duties.) Such plans were reported in 29 of the 109 refineries actually visited, about double the number found in the 1965 study.<sup>9</sup> Details of the various plans reported ranged from provisions embracing

all maintenance crafts (reported by 10 refineries) to those limited to specific crafts.

In some instances, workers were brought under the plan through the helper (or other noncraft) classifications, and were placed in training until they qualified for the craftsman level. Other plans accepted only workers already having journeyman skill in at least one craft, then provided training in additional crafts.

Most of the maintenance craft consolidation plans reported had formally established single-rate structures for workers covered by the plans; these rates usually were slightly higher than those applying to workers in the single crafts.

*Method of wage payment.* Virtually all workers covered by the study were paid time rates. Typically, this took place under a formal system providing single rates for specific occupations. (See table 15.) In a number of refineries, the same single rate applied to several occupations, e.g., one rate for most journeyman maintenance jobs. However, formal plans providing for ranges of rates, most commonly found in the Texas–Louisiana Gulf Coast region, covered one-fifth of the workers.

#### Average hourly earnings

Earnings of the 69,831 production and related workers in petroleum refineries covered by the study averaged \$4.59 an hour in April 1971.<sup>10</sup> Wage levels were highest in the East Coast region (\$4.77 an hour) and lowest in Western Pennsylvania–West Virginia (\$3.74). In all other sections of the country, average hourly earnings ranged from \$4.21 to \$4.70 an hour. In the Texas–Louisiana Gulf Coast region, where 35 percent of the workers were employed, the average was \$4.63. (See table 1.)

<sup>8</sup> Standard Metropolitan Statistical Areas as defined by the U.S. Office of Management and Budget through January 1968.

<sup>9</sup> BLS Bulletin 1526, op. cit.

<sup>10</sup> The straight-time average hourly earnings in this bulletin differ in concept from the gross average hourly earnings in the Bureau's monthly hours and earnings series (\$4.82 in April 1971).

Unlike the latter, the estimates presented in this bulletin exclude premium pay for overtime and for work on weekends, holidays, and late shifts. Average (mean) earnings were calculated by summing individual hourly earnings and dividing by the number of individual workers. In the monthly series, by contrast, the sum of the man-hour totals reported by establishments in the industry was divided into the reported payroll totals.

The estimated number of production workers within scope of the study is intended only as a general guide to the size and composition of the labor force included in the survey. It differs from those published in the monthly series (88,500 in April 1971) by excluding establishments employing less than 100 workers. The advance planning necessary to make the survey required use of lists of establishments assembled considerably in advance of data collection. Thus, omitted are: (1) Establishments new to the industry, (2) establishments originally classified in the petroleum refining industry but found to be in other industries at the time of the survey, and (3) refineries classified incorrectly in other industries at the time the lists were compiled.

The level of earnings for production workers in April 1971 (\$4.59 an hour) was 33 percent above the average recorded in December 1965 (\$3.45),<sup>11</sup> and resulted largely from general wage adjustments granted under collective bargaining agreements. During this period, wage levels increased at average annual rates of 5.3 to 5.8 percent in 6 of the 8 regions. In Western Pennsylvania—West Virginia, by contrast, the annual rate of increase averaged 7.0 percent and in the Texas Inland—North Louisiana—Arkansas region, 4.9 percent.

Nationwide, workers in metropolitan areas averaged \$4.66 an hour, compared with \$4.28 in the smaller communities, in April 1971. In the Midwest II region, the only one where the comparison was possible, corresponding averages were \$4.50 and \$4.32.

The nationwide average for workers in refineries employing 1,000 workers or more was \$4.66 an hour, 14 cents more than in smaller establishments (\$4.52). This relationship, however, was reversed in 3 of the 4 regions permitting comparisons (East Coast, Midwest I, and West Coast)—where workers in the smaller refineries averaged 5, 7, and 9 cents per hour, respectively, more than those in the larger plants.

The survey did not isolate and measure the exact influence of any one characteristic as a determinant of wage levels or earnings relationships. The interrelationship of such factors as size of community, size of establishment, and unionization was noted in the discussion of industry characteristics.

Earnings of all but 3 percent of the workers were within a range of \$3.50 to \$5.50 an hour. (See table 2.) Employees in the middle half of the array earned from \$4.27 to \$4.93 an hour. The relative dispersion of earnings (computed by dividing the middle range of earnings by the median) was 14 percent; thus, the wage rates of one-half of the workers were within 7 percent of the median rate in April 1971. This is one of the lowest dispersion factors found among the industries studied by the Bureau over the past decade. The compactness of wages in the industry is discussed further in the occupational earnings section which follows.

### Occupational earnings

Occupations selected to represent various wage levels for production and related workers in the industry covered a wide range of skills and accounted for seven-tenths of the work force in April 1971. (See table 3.) Among these jobs, average hourly earnings ranged from less than \$4 an hour for janitors (\$3.66), laborers (\$3.69), and watchmen (\$3.83) to \$5.17 for stillmen (chief operators of the various types of processing equipment). Assistant stillmen, the largest group, averaged \$4.79 an hour—38 cents less than stillmen, but 39 cents more

than stillmen's helpers. In the nine journeyman maintenance jobs studied, wage levels were closely grouped, ranging from \$4.83 for maintenance mechanics and pipefitters to \$4.96 for general mechanics (those skilled in more than one maintenance trade).<sup>12</sup>

Occupational averages usually were highest in the East Coast region and lowest in Western Pennsylvania—West Virginia, in the latter they commonly fell 12 to 20 percent below their nationwide levels. (These regional pay relationships are illustrated in text table 1.)

Pay relationships among jobs also varied somewhat within regions. For example, average earnings for pumpmen exceeded those for compounders by 1 to 3 percent in the East Coast, Midwest I, Rocky Mountain, and West Coast regions, whereas in the remaining four regions, compounders averaged more than pumpmen. Also, averages for pipefitters, a numerically important maintenance job, exceeded those for janitors by 24 to 42 percent among the regions.

Data on occupational earnings were also tabulated by size of community and size of establishment. (See tables 4-5.) Nationwide, averages were higher in metropolitan areas than in nonmetropolitan areas and, in nearly all cases, higher in refineries employing 1,000 workers or more than in smaller refineries.

Individual earnings of workers in the selected occupations were generally concentrated within comparatively narrow limits (particularly in the higher skilled jobs), even on a nationwide basis. (See table 6.) For example, nearly 60 percent of the stillmen (chief operators) earned between \$5.10 and \$5.40 an hour and about 80 to 90 percent of the boilermakers, carpenters, machinists, and pipefitters had earnings within a 20-cent range (\$4.80 to \$5 an hour). In 6 of the 8 regions, the concentrations were even more apparent. Earnings of a majority of the workers in two-thirds of the jobs for which data are shown were clustered within ranges of 20 cents an hour or less. (See tables 7-14.) Such narrow wage bands resulted largely from the widespread use of single-rate wage systems, mentioned previously, and a high degree of unionization that involves much company-wide bargaining in multi-plant companies.

### Establishment practices and supplementary wage provisions

Data were also obtained on certain establishment practices and supplementary wage benefits for production workers, including work schedules, shift differentials,

<sup>11</sup> BLS Bulletin 1526, op. cit.

<sup>12</sup> The 2,015 general mechanics classified in the survey usually were employed in refineries having maintenance craft consolidation plans.

**Text table 1. Regional wage levels for 14 selected occupations expressed as percents of nationwide averages**

(U.S. averages=100)

Occupation	East Coast	Western Pennsylvania—West Virginia	Midwest I	Midwest II	Texas—Louisiana Gulf Coast	Texas Inland—North Louisiana—Arkansas	Rocky Mountain	West Coast
<b>Maintenance:</b>								
Boilermakers . . . . .	102	-	99	96	100	95	96	101
Electricians . . . . .	104	83	98	97	102	94	96	102
Helpers, trades . . . . .	102	88	104	99	100	91	99	100
Instrument repairmen . . . . .	106	80	99	96	100	92	96	100
Maintenance mechanics . . . . .	103	82	101	96	102	93	100	-
Pipefitters . . . . .	103	82	100	97	101	-	98	102
<b>Processing:</b>								
Laborers . . . . .	101	91	103	101	100	91	99	101
Pumpmen . . . . .	105	82	105	94	101	88	100	97
Stillmen . . . . .	105	-	101	94	101	93	98	102
Assistant stillmen . . . . .	104	83	103	95	100	94	99	99
Stillmen's helpers . . . . .	106	-	102	96	100	94	106	97
<b>Other:</b>								
Routine testers, laboratory . . . . .	105	82	99	93	106	89	93	100
Truckdrivers . . . . .	102	85	104	99	97	94	101	103
Janitors . . . . .	105	87	102	96	99	-	91	104

NOTE: Dashes indicate data not reported, or data that do not meet publication criteria.

paid holidays, paid vacations, and specified health, insurance, and retirement plans.

*Scheduled weekly hours and shift practices.* Virtually all production workers were in refineries scheduling most of their day-shift workers 40 hours a week. The only notable exception was in the Midwest I region where a weekly work schedule of 42 hours applied to 6 percent of the workers. (See table 16.)

Nearly one-half of the industry's production workers were assigned to rotating shifts, typically under arrangements whereby individuals worked day, evening, and night schedules during successive weeks. With few exceptions, workers on evening schedules received 15 cents an hour above day rates and those on night schedules received 30 cents. Provisions varied somewhat in Western Pennsylvania—West Virginia. (See table 17.) Workers on fixed extra shifts accounted for less than 3 percent of the work force.

*Paid holidays.* All production workers were provided paid holidays, typically 9 days annually except in Western Pennsylvania—West Virginia. In that region, the proportions of workers receiving 8 or 9 days were nearly the same—slightly less than one-half in each case. The most liberal provisions found in the industry

were for 11 days, applying to one-fourth of the East Coast workers, and for 10½ days, applying to two-fifths on the West Coast. (See table 18.)

*Paid vacations.* Paid vacations (after qualifying periods of service) were provided to all production workers. In all but one region, vacation provisions typically amounted to 2 weeks pay after 1 year of service, 3 weeks' after 5 years, 4 weeks' after 10 years, and 5 weeks' pay after 20 years of service or more. Provisions were somewhat less liberal in Western Pennsylvania—West Virginia. (See table 19.)

*Health, insurance, and retirement plans.* Virtually all production workers covered by the survey were provided life, hospitalization, surgical, medical, and major medical insurance, for which employers paid at least part of the cost. (See table 20.) These health benefits, with the exception of life insurance, almost always covered both the employee and his dependents. In addition, all refineries provided their production workers with either sickness and accident insurance, or paid sick leave plans, or both. Nearly three-fifths of the workers were covered also by accidental death and dismemberment insurance, but the incidence among regions varied from about one-half to slightly more than nine-tenths of the workers.

Retirement pension plans (other than social security), providing regular payments for the remainder of the retiree's life, were provided by all establishments in the survey. In addition to pension plans, one-eighth of the workers were also covered by provisions for lump-sum payments (severance pay) on retirement.

*Other selected benefits.* Virtually all production workers were in refineries having formal provisions for jury duty pay and pay during absences to attend funerals of specified relatives. Technological severance pay, to

eligible employees permanently separated from employment because of plant closings or force reductions, was available to nearly two-thirds of the work force, nationally, and to about one-half or more of the workers in all regions except the West Coast. (See table 21.)

Plants employing nearly seven-eighths of the workers provided thrift or savings plans to which the employer made contributions beyond administrative costs. In most instances, three-fourths or more of the eligible workers subscribed to such plans.



**Table 2. Earnings distribution: All establishments**

(Percent distribution of production workers in petroleum refineries by straight-time hourly earnings,<sup>1</sup> United States and regions, April 1971)

Hourly earnings <sup>1</sup>	United States <sup>1</sup>	East Coast	Western Pennsylvania-- West Virginia	Midwest I	Midwest II	Texas-- Louisiana Gulf Coast	Texas Inland-- North Louisiana-- Arkansas	Rocky Mountain	West Coast
Under \$ 3.00 -----	0.3	-	0.8	0.2	0.2	0.3	1.6	0.3	-
\$ 3.00 and under \$ 3.10 -----	.1	-	.1	.2	.2	( <sup>2</sup> )	.1	.1	-
\$ 3.10 and under \$ 3.20 -----	.2	-	1.1	-	-	.3	1.9	-	-
\$ 3.20 and under \$ 3.30 -----	.2	0.1	2.9	( <sup>2</sup> )	.2	.1	.7	.2	-
\$ 3.30 and under \$ 3.40 -----	.6	( <sup>2</sup> )	6.7	.1	( <sup>2</sup> )	1.0	1.2	.4	-
\$ 3.40 and under \$ 3.50 -----	.6	.1	11.6	.1	.4	.2	2.3	.2	-
\$ 3.50 and under \$ 3.60 -----	1.8	.1	15.7	.3	1.5	2.9	1.7	2.3	( <sup>2</sup> )
\$ 3.60 and under \$ 3.70 -----	2.3	1.7	15.5	1.1	2.0	2.0	5.3	.9	1.6
\$ 3.70 and under \$ 3.80 -----	2.5	3.1	6.9	.9	4.8	2.1	4.4	3.6	1.2
\$ 3.80 and under \$ 3.90 -----	2.6	.3	10.7	4.8	6.6	1.2	5.2	3.2	.6
\$ 3.90 and under \$ 4.00 -----	2.5	2.5	8.2	1.1	4.6	1.0	4.9	.2	4.9
\$ 4.00 and under \$ 4.10 -----	4.0	3.2	4.6	2.5	5.2	4.2	7.5	7.2	3.3
\$ 4.10 and under \$ 4.20 -----	3.5	4.0	7.7	2.7	6.1	2.2	8.0	1.6	3.3
\$ 4.20 and under \$ 4.30 -----	5.8	4.1	3.8	5.5	10.1	5.5	15.3	4.0	3.2
\$ 4.30 and under \$ 4.40 -----	4.0	4.1	.1	4.0	7.2	2.7	5.2	1.4	5.8
\$ 4.40 and under \$ 4.50 -----	6.3	4.4	.7	4.8	8.6	8.4	2.6	7.2	5.7
\$ 4.50 and under \$ 4.60 -----	5.5	5.6	-	3.0	9.6	4.6	11.5	13.8	6.0
\$ 4.60 and under \$ 4.70 -----	5.4	5.0	.1	4.2	6.9	2.1	2.4	11.4	15.1
\$ 4.70 and under \$ 4.80 -----	3.6	4.8	.4	.9	8.6	1.9	5.6	5.8	5.7
\$ 4.80 and under \$ 4.90 -----	19.5	4.4	1.7	33.0	6.9	31.3	4.9	22.8	7.4
\$ 4.90 and under \$ 5.00 -----	13.4	18.8	.1	8.4	6.5	15.4	5.1	3.4	20.6
\$ 5.00 and under \$ 5.10 -----	3.7	7.7	.2	6.4	1.6	1.1	.1	4.7	6.1
\$ 5.10 and under \$ 5.20 -----	4.8	11.4	-	7.0	1.4	3.5	1.5	3.4	2.8
\$ 5.20 and under \$ 5.30 -----	3.0	3.2	-	4.0	.4	4.1	.9	.5	2.4
\$ 5.30 and under \$ 5.40 -----	2.3	5.2	( <sup>2</sup> )	3.3	.2	.9	( <sup>2</sup> )	1.8	4.3
\$ 5.40 and under \$ 5.50 -----	.7	3.6	-	.5	-	.1	( <sup>2</sup> )	-	-
\$ 5.50 and over -----	.9	2.8	.2	.8	.2	.9	-	-	.2
<b>Total -----</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number of workers -----	69,831	10,602	2,131	11,568	6,428	24,187	3,330	1,770	9,815
Average hourly earnings <sup>1</sup> -----	\$4.59	\$4.77	\$3.74	\$4.70	\$4.37	\$4.63	\$4.21	\$4.55	\$4.65

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

<sup>2</sup> Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

**Table 3. Occupational averages: All establishments**

(Number and average straight-time hourly earnings<sup>1</sup> of workers in selected occupations in petroleum refineries, United States and regions, April 1971)

Department and occupation	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	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Maintenance:</b>																		
Boilermakers -----	1,235	\$ 4.88	142	\$ 4.97	-	-	195	\$ 4.85	30	\$ 4.67	663	\$ 4.88	8	\$ 4.64	17	\$ 4.69	180	\$ 4.93
Carpenters -----	759	4.84	88	4.95	10	\$ 4.07	146	4.85	36	4.59	319	4.88	26	4.36	24	4.68	110	4.92
Electricians -----	1,232	4.85	149	5.04	25	4.01	289	4.76	96	4.69	460	4.94	54	4.54	31	4.65	128	4.97
Helpers, trades -----	1,509	4.06	217	4.16	83	3.56	360	4.23	182	4.03	414	4.05	92	3.70	31	4.02	130	4.05
Instrument repairmen -----	1,519	4.93	204	5.25	13	3.96	316	4.88	107	4.71	588	4.95	46	4.56	58	4.75	187	4.93
Machinists -----	1,746	4.87	193	4.99	14	4.14	351	4.85	78	4.79	656	4.88	35	4.61	63	4.66	356	4.92
Mechanics, general -----	2,015	4.96	937	5.13	18	3.75	170	4.88	72	4.68	-	-	-	-	-	-	-	-
Mechanics, maintenance -----	1,005	4.83	163	4.98	28	3.98	101	4.90	114	4.63	459	4.91	80	4.47	12	4.85	-	-
Pipefitters -----	3,063	4.83	214	4.99	52	3.97	750	4.85	196	4.67	1,253	4.89	-	-	61	4.75	431	4.92
Welders, hand -----	1,383	4.85	153	5.10	28	4.03	258	4.89	173	4.71	532	4.90	67	4.38	41	4.72	131	4.92
<b>Processing:</b>																		
Compounders -----	310	4.70	54	4.93	53	4.23	65	4.92	20	4.55	45	5.05	19	4.23	7	4.61	47	4.56
Laborers -----	4,070	3.69	507	3.74	304	3.36	736	3.81	463	3.71	1,663	3.70	189	3.37	119	3.66	89	3.73
Loaders, tank cars or trucks -----	993	4.24	61	4.38	27	3.72	216	4.51	227	4.16	153	4.46	-	-	61	4.38	64	4.14
Package fillers, machine -----	429	4.03	108	4.16	67	3.61	-	-	45	4.15	-	-	-	-	-	-	30	4.04
Pumpmen -----	2,195	4.78	356	5.00	54	3.92	377	5.04	212	4.47	777	4.82	105	4.19	87	4.76	227	4.62
Pumpmen's helpers -----	654	4.58	75	4.51	-	-	134	4.60	32	4.54	304	4.69	14	4.12	23	4.78	72	4.24
Stillmen (chief operators) -----	5,561	5.17	703	5.44	-	-	920	5.23	601	4.85	1,961	5.24	392	4.79	154	5.06	711	5.26
Stillmen, assistant (assistant operators) -----	9,489	4.79	1,153	4.99	52	3.97	1,921	4.92	869	4.55	3,296	4.79	509	4.48	216	4.73	1,473	4.74
Stillmen's helpers (operators' helpers) -----	3,802	4.40	510	4.68	-	-	663	4.48	401	4.23	1,354	4.40	363	4.14	105	4.65	362	4.27
Treaters, oils -----	647	4.64	44	5.05	36	3.62	57	4.86	69	4.49	280	4.78	74	4.18	-	-	81	4.79
Treaters' helpers, oils -----	244	4.57	25	4.44	-	-	-	-	-	-	138	4.71	-	-	-	-	41	4.48
<b>Inspecting and testing:</b>																		
Routine testers, laboratory -----	2,906	4.62	461	4.87	107	3.79	535	4.57	332	4.29	922	4.90	235	4.10	82	4.30	232	4.61
<b>Recording and control:</b>																		
Stock clerks -----	727	4.48	123	4.44	10	3.56	151	4.50	47	4.23	303	4.65	28	3.88	14	4.11	51	4.29
<b>Material movement:</b>																		
Truckdrivers -----	1,032	4.15	176	4.23	26	3.51	198	4.33	73	4.10	296	4.01	56	3.91	33	4.21	174	4.27
Truckers, power, forklift -----	282	4.08	47	4.09	33	3.69	18	4.23	38	4.01	-	-	-	-	-	-	38	3.97
Truckers, power, other than forklift -----	94	4.38	-	-	-	-	31	4.63	12	4.29	36	4.22	-	-	-	-	-	-
<b>Custodial:</b>																		
Guards -----	582	4.06	138	4.08	-	-	107	4.19	32	4.00	217	4.11	40	3.56	-	-	44	4.03
Janitors -----	644	3.66	82	3.84	11	3.20	94	3.74	65	3.50	303	3.64	-	-	13	3.34	58	3.81
Watchmen -----	77	3.83	-	-	29	3.52	19	3.93	-	-	-	-	-	-	-	-	-	-

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

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



**Table 4. Occupational averages: By size of community**

(Number and average straight-time hourly earnings<sup>1</sup> of workers in selected occupations in petroleum refineries in metropolitan and nonmetropolitan areas, United States and regions, April 1971)

Department and occupation	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	
	Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan areas		Nonmetropolitan areas		Metropolitan 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	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
<b>Maintenance:</b>																						
Boilermakers .....	1,198	\$4.89	37	\$4.77	134	\$4.96	-	-	195	\$4.85	16	\$4.72	14	\$4.61	663	\$4.88	8	\$4.64	-	-	180	\$4.93
Carpenters .....	689	4.88	70	4.46	86	4.95	-	-	146	4.85	-	-	27	4.54	319	4.88	22	4.40	-	-	110	4.92
Electricians .....	1,079	4.90	153	4.53	142	5.03	19	\$3.82	271	4.76	46	4.85	50	4.54	460	4.94	49	4.57	21	\$4.62	128	4.97
Helpers, trades .....	1,035	4.09	474	3.98	184	4.17	75	3.57	206	4.18	51	4.23	131	3.95	414	4.05	80	3.71	30	4.03	130	4.05
Instrument repairmen .....	1,330	4.96	189	4.67	194	5.25	11	3.98	288	4.89	29	4.81	78	4.67	588	4.95	42	4.59	38	4.74	187	4.93
Machinists .....	1,608	4.89	138	4.66	179	4.97	10	3.86	343	4.85	-	-	44	4.72	656	4.88	32	4.64	33	4.67	356	4.92
Mechanics, general .....	1,754	4.98	261	4.86	845	5.12	18	3.75	84	4.91	-	-	31	4.64	-	-	-	-	-	-	-	-
Mechanics, maintenance .....	776	4.91	229	4.54	163	4.98	-	-	63	4.95	-	-	91	4.57	459	4.91	75	4.49	-	-	-	-
Pipefitters .....	2,774	4.87	289	4.46	179	4.96	38	3.80	742	4.85	89	4.73	107	4.62	1,253	4.89	-	-	55	4.73	431	4.92
Welders, hand .....	1,144	4.91	239	4.56	140	5.10	20	3.86	230	4.91	58	4.86	115	4.63	532	4.90	58	4.41	36	4.74	131	4.92
<b>Processing:</b>																						
Compounders .....	243	4.82	67	4.24	54	4.93	19	3.77	49	5.08	-	-	-	-	45	5.05	15	4.24	-	-	47	4.56
Laborers .....	3,209	3.73	861	3.52	441	3.75	278	3.35	728	3.81	131	3.79	332	3.68	1,663	3.70	150	3.35	92	3.67	89	3.73
Loaders, tank cars or trucks .....	601	4.38	392	4.02	61	4.38	17	3.65	200	4.53	56	4.30	171	4.11	153	4.46	-	-	31	4.41	64	4.14
Package fillers, machine .....	329	4.12	100	3.72	108	4.16	53	3.63	-	-	-	-	22	4.10	-	-	-	-	-	-	30	4.04
Pumpmen .....	1,845	4.84	350	4.42	331	5.02	30	3.81	341	5.06	72	4.56	140	4.42	777	4.82	81	4.22	49	4.81	227	4.62
Pumpmen's helpers .....	578	4.62	76	4.35	75	4.51	-	-	98	4.70	-	-	22	4.44	304	4.69	14	4.12	19	4.76	72	4.24
Stillmen (chief operators) .....	4,346	5.26	1,215	4.84	625	5.43	-	-	808	5.25	130	5.02	471	4.80	1,961	5.24	358	4.50	69	5.11	711	5.26
Stillmen assistant (assistant operators) .....	8,153	4.83	1,336	4.55	1,065	5.01	44	3.96	1,771	4.92	349	4.65	520	4.48	3,296	4.79	474	4.50	156	4.71	1,473	4.74
Stillmen's helpers (operators' helpers) .....	2,783	4.44	1,019	4.28	375	4.74	-	-	489	4.53	-	-	339	4.22	1,354	4.40	259	4.19	-	-	362	4.27
Treaters oils .....	476	4.81	171	4.18	44	5.05	36	3.62	57	4.86	-	-	65	4.49	280	4.78	70	4.18	-	-	81	4.79
Treaters' helpers, oils .....	224	4.75	20	4.14	25	4.44	-	-	-	-	-	-	-	-	128	4.71	-	-	-	-	41	4.48
<b>Inspecting and testing:</b>																						
Routine testers, laboratory .....	2,257	4.75	649	4.16	415	4.90	85	3.69	495	4.57	99	4.40	322	4.24	922	4.90	208	4.11	45	4.44	232	4.61
<b>Recording and control:</b>																						
Stock clerks .....	630	4.52	97	4.18	114	4.46	8	3.60	131	4.45	18	4.30	29	4.19	303	4.65	24	3.89	7	4.14	51	4.29
<b>Material movement:</b>																						
Truckdrivers .....	874	4.18	158	3.98	176	4.23	24	3.50	172	4.31	29	4.32	44	3.95	296	4.01	50	3.93	19	4.23	174	4.27
Truckers, power, forklift .....	260	4.09	22	3.97	47	4.09	-	-	18	4.23	-	-	-	-	-	-	-	-	-	-	38	3.97
Truckers, power, other than forklift .....	82	4.39	12	4.29	-	-	-	-	31	4.63	-	-	12	4.29	36	4.22	-	-	-	-	-	-
<b>Custodial:</b>																						
Guards .....	509	4.09	73	3.87	129	4.08	-	-	97	4.19	-	-	23	3.92	217	4.11	-	-	-	-	44	4.03
Janitors .....	536	3.72	108	3.34	79	3.84	9	3.15	58	3.93	-	-	37	3.37	303	3.64	-	-	8	3.69	58	3.81
Watchmen .....	46	4.05	31	3.50	-	-	23	3.53	19	3.93	-	-	-	-	-	-	-	-	-	-	-	-

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

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

**Table 5. Occupational averages: By size of establishment**

(Number and average straight-time hourly earnings<sup>1</sup> of workers in selected occupations in petroleum refineries by size of establishment, United States and regions, April 1971)

Department and occupation	United States				East Coast				Western Pennsylvania—West Virginia		Midwest I			
	Establishments with—													
	100-999 workers		1,000 workers or more		100-999 workers		1,000 workers or more		100-999 workers		100-999 workers		1,000 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	Number of workers	Average hourly earnings
Maintenance:														
Boilermakers .....	320	\$4.88	915	\$4.88	-	-	122	\$4.95	-	-	72	\$4.94	123	\$4.80
Carpenters .....	250	4.75	509	4.88	-	-	78	4.94	10	\$4.07	67	4.91	79	4.80
Electricians .....	480	4.78	740	4.90	-	-	110	5.03	25	4.01	136	4.91	145	4.62
Helpers, trades .....	1,028	4.03	469	4.13	79	\$4.22	-	-	83	3.56	325	4.23	-	-
Instrument repairmen .....	713	4.84	798	5.00	-	-	158	5.30	13	3.96	225	4.92	87	4.80
Machinists .....	685	4.84	1,041	4.89	62	5.04	131	4.96	14	4.14	148	4.92	195	4.80
Mechanics, general .....	956	4.89	1,047	5.03	408	5.14	529	5.11	18	3.75	168	4.89	-	-
Mechanics, maintenance .....	371	4.66	618	4.93	-	-	151	5.02	28	3.98	92	4.92	-	-
Pipefitters .....	1,237	4.77	1,818	4.88	-	-	111	4.95	52	3.97	314	4.91	428	4.80
Welders, hand .....	684	4.77	683	4.93	-	-	122	5.11	28	4.03	195	4.90	-	-
Processing:														
Compounders .....	156	4.48	138	4.97	27	4.82	27	5.04	53	4.23	12	5.10	37	5.07
Laborers .....	1,999	3.67	2,051	3.70	133	3.87	374	3.70	304	3.36	477	3.83	251	3.78
Loaders, tank cars or trucks .....	763	4.19	202	4.45	-	-	57	4.38	27	3.72	175	4.53	-	-
Package fillers, machine .....	209	3.92	220	4.13	-	-	68	4.10	67	3.61	-	-	-	-
Pumpmen .....	1,130	4.69	1,057	4.88	95	4.87	261	5.05	54	3.92	269	5.00	-	-
Pumpmen's helpers .....	337	4.47	317	4.70	-	-	-	-	-	-	102	4.56	-	-
Stillmen (chief operators) .....	3,136	5.06	2,353	5.31	347	5.39	356	5.49	-	-	769	5.26	-	-
Stillmen, assistant (assistant operators) .....	5,138	4.77	4,291	4.81	707	4.94	446	5.08	52	3.97	1,241	4.99	664	4.80
Stillmen's helpers (operators' helpers) .....	2,306	4.31	1,432	4.53	-	-	328	4.77	-	-	450	4.50	213	4.45
Treaters, oils .....	381	4.48	230	5.00	-	-	33	5.05	36	3.62	26	4.55	31	5.11
Treaters' helpers, oils .....	110	4.44	134	4.68	-	-	-	-	-	-	-	-	-	-
Inspecting and testing:														
Routine testers, laboratory .....	1,739	4.47	1,111	4.86	226	4.81	235	4.93	107	3.79	380	4.59	-	-
Recording and control:														
Stock clerks .....	322	4.35	401	4.58	35	4.34	88	4.48	10	3.56	129	4.53	-	-
Material movement:														
Truckdrivers .....	541	4.05	491	4.25	-	-	80	4.31	26	3.51	95	4.34	103	4.31
Truckers, power, fork-lift .....	104	3.90	178	4.18	-	-	47	4.09	33	3.69	-	-	-	-
Truckers, power, other than forklift .....	29	4.37	65	4.38	-	-	-	-	-	-	-	-	-	-
Custodial:														
Guards .....	216	3.94	366	4.14	-	-	105	4.09	-	-	74	4.16	-	-
Janitors .....	223	3.55	421	3.71	8	3.92	74	3.83	11	3.20	76	3.70	-	-
Watchmen .....	61	3.69	-	-	-	-	-	-	29	3.52	19	3.93	-	-

See footnote at end of table.

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

(Number and average straight-time hourly earnings<sup>1</sup> of workers in selected occupations in petroleum refineries by size of establishments, United States and regions, April 1971)

Department and occupation	Midwest II		Texas—Louisiana Gulf Coast				Texas Inland—North Louisiana—Arkansas		Rocky Mountain		West Coast	
	Establishments with—											
	100-999 workers		100-999 workers		1,000 workers or more		100-999 workers		100-999 workers		100-999 workers	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
Maintenance:												
Boilermakers .....	28	\$4.65	105	\$4.91	558	\$4.88	8	\$4.64	17	\$4.69	70	\$4.91
Carpenters .....	28	4.51	37	4.87	282	4.88	26	4.36	24	4.68	48	4.91
Electricians .....	84	4.66	74	4.94	386	4.94	50	4.50	31	4.65	41	4.95
Helpers, trades .....	163	3.94	168	3.98	246	4.10	88	3.70	31	4.02	91	4.09
Instrument repairmen .....	92	4.68	118	4.92	470	4.95	42	4.52	58	4.75	119	4.92
Machinists .....	69	4.78	141	4.86	515	4.89	23	4.41	63	4.66	165	4.90
Mechanics, general .....	72	4.68	-	-	-	-	-	-	-	-	-	-
Mechanics, maintenance .....	81	4.53	58	4.96	401	4.91	72	4.45	12	4.85	-	-
Pipefitters .....	173	4.64	211	4.89	1,042	4.89	-	-	61	4.75	217	4.91
Welders, hand .....	144	4.67	117	4.90	415	4.89	60	4.40	41	4.72	68	4.90
Processing:												
Compounders .....	13	4.37	-	-	45	5.05	19	4.23	7	4.61	25	4.53
Laborers .....	364	3.68	368	3.74	1,295	3.69	159	3.49	119	3.66	75	3.74
Loaders, tank cars or trucks .....	224	4.15	77	4.30	76	4.62	-	-	61	4.38	23	4.14
Package fillers, machine .....	40	4.11	-	-	-	-	-	-	-	-	17	4.13
Pumpmen .....	196	4.43	211	4.91	-	-	105	4.19	87	4.76	113	4.59
Pumpmen's helpers .....	24	4.50	87	4.53	217	4.75	14	4.12	23	4.78	67	4.26
Stillmen (chief operators) .....	548	4.83	495	5.11	1,466	5.29	356	4.79	154	5.06	348	5.19
Stillmen, assistant (assistant operators) .....	818	4.53	793	4.75	2,503	4.80	465	4.43	216	4.73	846	4.79
Stillmen's helpers (operators' helpers) .....	353	4.21	531	4.28	823	4.48	287	4.08	105	4.65	354	4.27
Treaters, oil .....	65	4.47	-	-	123	5.06	38	4.19	-	-	42	4.91
Treaters' helpers, oils .....	-	-	-	-	-	-	-	-	-	-	-	-
Inspecting and testing:												
Routine testers, laboratory .....	299	4.29	268	4.66	654	4.99	183	4.11	82	4.30	194	4.66
Recording and control:												
Stock clerks .....	44	4.22	50	4.47	253	4.69	28	3.88	14	4.11	12	4.37
Material movement:												
Truckdrivers .....	67	4.09	74	3.61	222	4.14	56	3.91	33	4.21	94	4.15
Truckers, power, fork-lift .....	34	4.00	-	-	-	-	-	-	-	-	-	-
Truckers, power, other than forklift .....	-	-	8	4.31	-	-	-	-	-	-	-	-
Custodial:												
Guards .....	26	4.00	39	3.82	178	4.17	40	3.56	-	-	-	-
Janitors .....	53	3.43	31	3.45	272	3.66	-	-	13	3.34	-	-
Watchmen .....	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Table 6. Occupational earnings: United States

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																											
			Under \$3.10	\$3.10 and under \$3.20	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30	\$5.40	\$5.50 and over		
All production workers	69,831	\$4.59	239	158	127	436	434	1,263	1,601	1,724	1,814	1,745	2,769	2,446	4,029	2,759	4,391	3,874	3,742	2,494	3,636	9,369	2,611	3,342	2,094	1,623	477	634		
Maintenance:																														
Boilermakers	1,235	\$4.88	-	-	-	-	-	-	-	-	-	-	-	1	3	3	11	5	26	732	414	29	11	-	-	-	-	-		
Carpenters	759	4.84	-	-	-	-	-	2	2	2	6	2	12	5	6	20	3	6	22	393	246	32	2	-	-	-	-	-		
Electricians	1,232	4.85	2	-	-	-	4	2	2	4	-	12	42	12	14	13	22	16	31	326	563	124	35	-	-	8	-	-		
Helpers, trades	1,509	4.06	-	-	1	5	70	22	114	96	59	105	369	227	189	91	86	15	49	-	11	-	-	-	-	-	-	-		
Instrument repairmen	1,519	4.93	-	-	-	-	-	-	-	-	5	1	12	2	6	19	18	9	34	56	511	531	121	16	118	15	1	44		
Machinists	1,746	4.87	-	-	-	-	-	1	2	-	3	2	8	8	1	5	36	14	17	33	914	608	69	25	-	-	-	-		
Mechanics, general	2,015	4.96	-	-	-	-	10	-	-	9	-	-	5	-	5	-	122	66	17	88	197	505	185	806	-	-	-	-		
Mechanics, maintenance	1,005	4.83	1	-	-	-	-	1	-	-	13	9	2	22	21	20	23	33	28	33	363	297	73	66	-	-	-	-		
Pipefitters	3,063	4.83	-	-	-	6	6	-	-	2	40	7	7	37	26	8	41	37	40	116	1,654	897	104	35	-	-	-	-		
Welders, hand	1,383	4.85	-	-	-	-	-	5	3	6	4	12	19	14	32	34	40	20	47	577	397	105	22	-	46	-	-	-		
Processing:																														
Compounders	310	4.70	1	-	-	-	6	-	2	11	20	-	1	15	14	47	7	26	5	31	19	36	41	22	2	-	4	-		
Laborers	4,070	3.69	84	65	79	292	123	728	651	763	682	143	57	27	372	-	4	-	-	-	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks	993	4.24	-	-	-	-	1	27	56	27	114	29	112	75	81	114	108	89	68	20	27	25	3	17	-	-	-	-		
Package fillers, machine	429	4.03	-	-	-	10	11	30	19	19	5	107	12	56	115	11	20	12	2	-	-	-	-	-	-	-	-	-		
Pumpmen	2,195	4.78	-	-	-	4	1	6	6	43	56	18	21	93	74	92	254	239	65	143	502	67	268	178	65	-	-	-		
Pumpmen's helpers	654	4.58	-	-	-	-	-	12	11	-	16	9	9	65	71	46	51	61	18	229	56	-	-	-	-	-	-	-		
Stillmen (chief operators)	5,561	5.17	-	-	-	-	-	-	16	-	-	-	1	42	72	-	46	178	112	131	558	380	95	1,125	1,189	951	386	279		
Stillmen, assistant (assistant operators)	9,489	4.79	-	-	-	-	-	-	-	8	24	68	-	465	287	434	463	826	778	3,626	1,523	509	231	78	130	-	39	-		
Stillmen's helpers (operators' helpers)	3,802	4.40	-	-	-	12	-	42	56	85	125	285	122	367	428	1,153	489	312	65	25	156	80	-	-	-	-	-	-		
Treaters, oil	647	4.64	-	2	-	-	18	23	-	1	12	-	39	17	102	61	23	69	9	40	63	8	58	94	-	-	-	4		
Treaters' helpers, oil	244	4.57	-	-	-	-	-	4	2	-	-	-	20	-	21	14	37	17	-	59	70	-	-	-	-	-	-	-		
Inspecting and testing:																														
Routine testers, laboratory	2,906	4.62	14	-	2	-	19	7	34	19	92	105	109	149	240	195	177	136	224	85	679	226	90	48	29	40	43	144		
Recording and control:																														
Stock clerks	727	4.48	2	-	7	3	2	18	5	6	25	32	18	81	66	52	209	31	28	60	39	37	3	2	-	1	-	-		
Material movement:																														
Truckdrivers	1,032	4.15	-	40	-	8	3	11	18	7	20	39	132	228	246	185	42	45	-	3	2	3	-	-	-	-	-	-		
Truckers, power, forklift	282	4.08	-	-	-	-	21	1	-	2	16	38	59	53	80	-	-	12	-	-	-	-	-	-	-	-	-	-		
Truckers, power, other than forklift	94	4.38	-	-	-	-	-	-	2	-	-	3	23	5	7	8	10	14	-	6	16	-	-	-	-	-	-	-		
Custodial:																														
Guards	582	4.06	8	-	14	-	-	1	28	10	17	22	197	79	173	20	13	-	-	-	-	-	-	-	-	-	-	-		
Janitors	644	3.66	40	10	8	1	6	178	97	88	124	5	30	8	49	-	-	-	-	-	-	-	-	-	-	-	-	-		
Watchmen	77	3.83	-	-	-	5	14	14	4	4	-	7	8	5	-	16	-	-	-	-	-	-	-	-	-	-	-	-		

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

**Table 7. Occupational earnings: East Coast**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings,<sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																												
			Under \$3.60	and		\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30	\$5.40	\$5.50	\$5.60	\$5.70	\$5.80	\$5.90	\$6.00	and over			
				\$3.60	\$3.70																								\$3.80		
All production workers—	10,602	\$4.77	31	185	329	32	261	340	419	432	430	469	589	531	513	468	1,989	812	1,212	337	548	380	108	99	19	14	18	37			
Maintenance:																															
Boilermakers -----	142	\$4.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	134	-	8	-	-	-	-	-	-	-	-	-	-		
Carpenters -----	88	4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	2	-	-	-	-	-	-	-	-	-	-		
Electricians -----	149	5.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	-	35	-	8	-	-	-	-	-	-	-	-		
Helpers, trades -----	217	4.16	-	-	-	2	-	33	117	25	40	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-		
Instrument repairmen -----	204	5.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	54	36	10	40	6	1	9	1	3	-	15	16		
Machinists -----	193	4.99	-	-	-	-	-	-	-	-	-	-	-	1	1	-	11	54	36	10	40	6	1	9	1	3	-	15	16		
Mechanics, general -----	937	5.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	147	32	14	-	-	-	-	-	-	-	-	-		
Mechanics, maintenance -----	163	4.98	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	2	149	786	-	-	-	-	-	-	-	-	-		
Pipefitters -----	214	4.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	66	-	-	-	-	-	-	-	-	-		
Welders, hand -----	153	5.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	179	35	22	-	-	-	-	-	-	-	-		
Processing:																															
Compounders -----	54	4.93	-	-	-	-	-	-	-	-	-	10	1	-	1	6	10	4	16	6	-	-	-	-	-	-	-	-	-	-	
Laborers -----	507	3.74	8	180	252	-	54	-	9	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks -----	61	4.38	-	-	-	-	-	-	-	-	-	10	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Package fillers, machine -----	108	4.16	-	-	-	1	36	7	14	40	-	14	30	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pumpmen -----	356	5.00	-	-	-	-	-	-	-	-	-	19	-	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pumpmen's helpers -----	75	4.51	-	-	-	-	-	-	-	-	-	28	-	9	38	-	55	12	96	46	31	67	30	-	-	-	-	-	-	-	
Stillmen (chief operators) -----	703	5.44	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	192	333	50	87	-	-	-	-	-	-	
Stillmen, assistant (assistant operators) -----	1,153	4.99	-	-	-	-	-	-	-	-	-	-	-	12	76	265	212	402	65	62	59	-	-	-	-	-	-	-	-	-	
Stillmen's helpers (operators' helpers) -----	510	4.68	-	-	-	-	-	-	-	-	6	141	55	128	8	-	156	16	-	-	-	-	-	-	-	-	-	-	-	-	
Treaters, oil -----	44	5.05	-	-	-	-	-	-	-	-	-	-	-	9	4	-	3	8	-	16	-	-	-	4	-	-	-	-	-	-	
Treaters' helpers, oil -----	25	4.44	-	-	-	-	-	-	-	-	9	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Inspecting and testing:																															
Routine testers, laboratory -----	461	4.87	-	-	6	1	-	3	13	17	8	36	39	15	39	45	134	8	15	12	17	9	16	5	8	7	3	5	-	-	
Recording and control:																															
Stock clerks -----	123	4.44	-	-	-	-	3	-	4	25	15	19	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material movement:																															
Truckdrivers -----	176	4.23	-	-	-	-	-	9	80	16	68	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Truckers, power, forklift -----	47	4.09	-	-	-	-	-	35	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Custodial:																															
Guards -----	138	4.08	-	-	-	2	107	11	12	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Janitors -----	82	3.84	2	2	54	1	2	6	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

**Table 8. Occupational earnings: Western Pennsylvania—West Virginia**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																						
			Under \$3.10	\$3.10 and under \$3.20	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10 and over	
All production workers -----	2, 131	\$ 3. 74	21	23	62	143	247	335	331	148	228	175	98	165	82	2	14	-	2	8	36	2	4	5	
Maintenance:																									
Carpenters -----	10	\$ 4. 07	-	-	-	-	-	-	2	-	2	3	-	-	1	-	-	-	-	-	-	-	-	-	
Electricians -----	25	4. 01	-	-	-	-	-	4	2	2	4	-	7	2	-	-	-	-	-	-	-	4	-	-	
Helpers, trades -----	83	3. 56	-	-	-	5	18	14	40	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Instrument repairmen -----	13	3. 96	-	-	-	-	-	-	-	-	5	1	6	1	-	-	-	-	-	-	-	-	-	-	
Machinists -----	14	4. 14	-	-	-	-	-	1	2	-	-	5	2	-	-	-	-	-	-	-	-	4	-	-	
Mechanics, general -----	18	3. 75	-	-	-	-	10	-	-	-	-	-	5	-	3	-	-	-	-	-	-	-	-	-	
Mechanics, maintenance -----	28	4. 13	-	-	-	-	-	1	-	-	13	9	2	1	-	-	-	-	-	-	-	2	-	-	
Pipefitters -----	52	3. 90	-	-	-	-	6	6	-	2	16	7	7	-	-	-	-	-	-	-	-	8	-	-	
Welders, hand -----	28	4. 03	-	-	-	-	-	-	5	-	6	4	9	-	-	-	-	-	-	-	-	4	-	-	
Processing:																									
Compounders -----	53	4. 41	-	-	-	-	-	6	-	2	11	18	-	-	-	2	-	-	-	-	4	-	2	4	
Laborers -----	304	3. 36	13	21	57	73	49	87	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks -----	27	3. 72	-	-	-	-	1	4	8	1	13	-	-	-	-	-	-	-	-	-	-	-	-	-	
Package fillers, machine -----	67	3. 61	-	-	-	10	10	10	19	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pumpmen -----	54	3. 92	-	-	-	-	4	1	6	-	23	10	-	-	-	-	10	-	-	-	-	-	-	-	
Stillmen, assistant (assistant operators) -----	52	3. 97	-	-	-	-	-	-	-	-	8	24	20	-	-	-	-	-	-	-	-	-	-	-	
Treaters, oil -----	36	3. 62	-	2	-	-	-	-	18	11	-	1	4	-	-	-	-	-	-	-	-	-	-	-	
Inspecting and testing:																									
Routine testers, laboratory -----	107	3. 79	2	-	2	-	19	7	14	-	37	14	-	2	2	-	-	-	2	4	2	-	-	-	
Recording and control:																									
Stock clerks -----	10	3. 56	-	-	-	1	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Material movement:																									
Truckdrivers -----	26	3. 51	-	-	-	8	3	5	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Truckers, power, forklift -----	33	3. 69	-	-	-	-	21	-	-	-	2	-	2	8	-	-	-	-	-	-	-	-	-	-	
Custodial:																									
Janitors -----	11	3. 20	2	-	2	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Watchmen -----	29	3. 52	-	-	-	5	6	14	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

**Table 9. Occupational earnings: Midwest I**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings,<sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings of—																				
			Under \$3.60	\$3.60 and under \$3.70	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30	\$5.40	\$5.50 over
All production workers -----	11,568	\$ 4.70	109	125	102	557	132	292	314	639	457	551	349	489	107	3,820	976	736	809	465	387	60	92
Maintenance:																							
Boilermakes -----	195	\$ 4.85	-	-	-	-	-	-	-	-	-	-	-	-	-	166	-	29	-	-	-	-	-
Carpenters -----	146	4.85	-	-	-	-	-	-	-	-	6	-	-	-	99	12	29	-	-	-	-	-	
Electricians -----	289	4.76	-	-	-	-	-	-	38	-	2	-	-	8	178	24	39	-	-	-	-	-	
Helpers, trades -----	360	4.23	12	-	18	-	-	48	48	131	8	58	8	25	4	-	-	-	-	-	-	-	
Instrument repairmen -----	316	4.88	-	-	-	-	-	-	-	-	4	-	-	4	-	220	24	55	-	-	9	-	
Machinists -----	351	4.85	-	-	-	-	-	-	-	-	2	-	-	8	36	32	-	-	-	-	-	-	
Mechanics, general -----	170	4.88	-	-	-	-	-	-	-	-	-	-	-	2	134	-	34	-	-	-	-	-	
Mechanics, maintenance -----	101	4.90	-	-	-	-	-	-	-	-	4	-	-	8	1	34	-	54	-	-	-	-	
Pipefitters -----	750	4.85	-	-	-	-	-	-	-	-	8	-	-	8	-	582	64	88	-	-	-	-	
Welders, hand -----	258	4.89	-	-	-	-	-	-	-	-	12	-	-	12	-	119	55	60	-	-	-	-	
Processing:																							
Compounders -----	65	4.92	-	-	-	-	-	-	-	-	-	16	-	-	14	3	3	11	16	2	-	-	
Laborers -----	736	3.81	52	97	34	457	24	48	8	16	-	-	-	-	-	-	-	-	-	-	-	-	
Loaders, tank cars or trucks -----	216	4.51	-	-	-	28	-	8	-	16	3	21	34	58	11	8	-	13	16	-	-	-	
Pumpmen -----	377	5.04	-	-	-	-	24	-	-	8	-	-	-	9	-	60	17	168	60	31	-	-	
Pumpmen's helpers -----	134	4.60	-	-	-	-	-	-	2	16	-	34	17	15	-	30	20	-	-	-	-	-	
Stillmen (chief operators) -----	920	5.23	-	-	-	-	-	-	-	-	-	-	24	-	48	-	-	279	284	200	53	32	
Stillmen, assistant (assistant operators) -----	1,921	4.92	-	-	-	-	-	-	-	-	30	-	20	17	17	1,083	457	12	159	16	71	39	
Stillmen's helpers (operators' helpers) -----	663	4.48	-	-	-	-	10	2	6	122	179	60	124	96	-	-	64	-	-	-	-	-	
Treaters, oil -----	57	4.86	-	-	-	-	8	-	-	-	-	-	10	-	9	-	-	12	18	-	-	-	
Inspecting and testing:																							
Routine testing laboratory -----	535	4.57	-	12	-	-	22	44	16	38	24	48	8	79	8	193	18	21	4	-	-	-	
Recording and control:																							
Stock clerk -----	151	4.50	6	-	4	-	-	22	5	15	3	13	24	7	6	16	-	30	-	-	-	-	
Material movement:																							
Truckdrivers -----	198	4.33	-	-	-	-	-	12	14	65	59	38	10	-	-	-	-	-	-	-	-	-	
Truckers, power, forklift -----	18	4.23	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	
Truckers, power, other than forklift -----	31	4.63	-	-	-	-	-	-	-	-	6	-	10	-	15	-	-	-	-	-	-	-	
Custodial:																							
Guards -----	107	4.19	-	-	-	8	-	20	18	53	4	4	-	-	-	-	-	-	-	-	-	-	
Janitors -----	94	3.74	<sup>2</sup> 16	-	-	49	3	24	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
Watchmen -----	19	3.93	-	-	4	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

<sup>2</sup> Workers were distributed as follows: 14 at \$ 2.80 to \$ 2.90; 2 at \$ 3 to \$ 3.10.

**Table 10. Occupational earnings: Midwest II**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																			
			Under \$3.40	\$3.40 and under \$3.50	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20 and over
All production workers -----	6,428	\$4.37	42	23	94	131	309	427	293	337	393	650	462	556	618	446	554	446	418	103	88	38
Maintenance:																						
Boilermakers -----	30	\$4.67	-	-	-	-	-	-	-	-	-	-	3	-	3	2	20	2	-	-	-	-
Carpenters -----	36	4.59	-	-	-	-	-	-	3	-	-	-	1	11	2	10	8	-	1	-	-	-
Electricians -----	96	4.69	2	-	-	-	-	-	-	-	-	6	4	9	3	4	15	42	6	5	-	-
Helpers, trades -----	182	4.03	-	3	-	6	58	34	6	-	-	7	23	8	3	7	12	-	7	-	-	-
Instrument repairmen -----	107	4.71	-	-	-	-	-	-	-	-	-	-	-	3	18	8	8	33	15	12	10	-
Machinists -----	78	4.79	-	-	-	-	-	-	-	-	-	-	-	-	2	9	15	32	6	5	-	-
Mechanics, general -----	72	4.68	-	-	-	-	-	-	-	-	-	-	-	-	-	15	9	57	-	-	-	-
Mechanics, maintenance -----	114	4.63	1	-	-	-	-	-	-	-	-	-	-	2	21	8	12	12	33	-	11	-
Pipefitters -----	196	4.67	-	-	-	-	-	-	-	-	-	-	14	2	8	13	100	23	9	8	-	-
Welders, hand -----	173	4.71	-	-	-	-	-	-	-	-	-	-	20	22	25	6	22	43	12	23	-	-
Processing:																						
Compounders -----	20	4.55	1	-	-	-	-	-	-	-	-	-	-	3	3	-	6	-	7	-	-	-
Laborers -----	463	3.71	24	9	70	88	94	145	14	-	19	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks -----	227	4.16	-	-	3	-	-	30	24	22	27	31	77	7	-	-	4	2	-	-	-	-
Package fillers, machine -----	45	4.15	-	-	-	-	-	-	14	5	17	-	4	5	-	-	-	-	-	-	-	-
Pumpmen -----	212	4.47	-	-	-	-	6	-	22	-	12	51	6	7	12	46	6	8	30	-	4	2
Pumpmen's helpers -----	32	4.54	-	-	-	-	-	-	3	-	-	5	-	1	6	7	10	-	-	-	-	-
Stillmen (chief operators) -----	601	4.85	-	-	-	-	-	-	-	-	-	-	-	-	12	70	112	19	72	221	-	73
Stillmen, assistant (assistant operators) -----	869	4.55	-	-	-	-	-	-	-	-	-	-	128	94	123	245	61	88	57	69	-	4
Stillmen's helpers (operators' helpers) -----	401	4.23	-	-	-	-	-	-	24	83	75	104	30	49	28	8	-	-	-	-	-	-
Treaters, oil -----	69	4.49	-	-	-	-	-	-	-	-	3	4	16	18	8	12	-	-	8	-	-	-
Inspecting and testing:																						
Routine testing, laboratory -----	332	4.29	-	-	-	-	24	20	27	41	87	34	18	28	41	9	-	3	-	-	-	-
Recording and control:																						
Stock clerks -----	47	4.23	-	-	-	-	4	10	-	5	14	1	4	6	3	-	-	-	-	-	-	-
Material movement:																						
Truckdrivers -----	73	4.10	-	-	-	3	18	10	1	22	-	13	-	3	-	3	-	-	-	-	-	-
Truckers, power, forklift -----	38	4.01	-	-	-	-	-	29	4	5	-	-	-	-	-	-	-	-	-	-	-	-
Truckers, power, other than forklift -----	12	4.29	-	-	-	-	-	3	-	5	-	-	-	-	-	-	4	-	-	-	-	-
Custodial:																						
Guards -----	32	4.00	-	-	3	-	5	-	20	-	-	-	-	4	-	-	-	-	-	-	-	-
Janitors -----	65	3.50	<sup>2</sup> 11	-	9	28	-	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

<sup>2</sup> Workers were distributed as follows: 3 at \$ 2.30 to \$ 2.40; 8 at \$ 2.60 to \$ 2.70.



**Table 11. Occupational earnings: Texas—Louisiana Gulf Coast**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings<sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																												
			Under \$3.20	\$3.20 and under \$3.30	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30	\$5.40	\$5.50	\$5.60	and over		
All production workers	24,187	\$4.63	149	17	234	54	696	480	509	284	239	1,004	537	1,331	644	2,028	1,102	516	458	7,575	3,731	275	849	993	223	36	39	184			
Maintenance:																															
Boilermakers	663	\$4.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	548	110	-	3	-	-	-	-	-	-	-	
Carpenters	319	4.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262	51	2	-	-	-	-	-	-	-	-	
Electricians	460	4.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	380	4	-	-	-	-	-	-	-	-	
Helpers, trades	414	4.05	-	-	9	-	52	2	4	3	269	13	-	32	18	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	
Instrument repairmen	588	4.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	216	280	6	-	78	-	-	-	-	-	-	
Machinists	656	4.88	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	496	131	-	11	-	-	-	-	-	-	-	
Mechanic, maintenance	459	4.91	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	283	166	8	-	-	-	-	-	-	-	-	
Pipefitters	1,253	4.89	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	940	287	8	-	-	-	-	-	-	-	-	
Welders, hand	532	4.90	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	361	149	14	-	-	-	-	-	-	-	-	
Processing:																															
Compounders	45	5.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	2	25	14	-	-	-	-	-	-	-	
Laborers	1,663	3.70	44	-	181	16	501	205	262	64	34	-	356	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks	153	4.46	-	-	-	-	8	-	2	-	15	4	-	18	38	39	-	-	14	15	-	-	-	-	-	-	-	-	-	-	
Pumpmen	777	4.82	-	-	-	-	-	-	-	-	-	-	-	28	12	230	-	-	115	295	-	48	49	-	-	-	-	-	-	-	
Pumpmen's helpers	304	4.69	-	-	-	-	12	8	-	-	-	-	24	8	11	19	-	6	180	36	-	-	-	-	-	-	-	-	-	-	
Stillmen (chief operators)	1,961	5.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	333	-	16	527	671	200	-	-	-	-	110	-	
Stillmen, assistant (assistant operators)	3,296	4.79	-	-	-	-	-	-	-	-	-	48	-	148	70	178	64	57	143	1,937	651	-	-	-	-	-	-	-	-	-	
Stillmen's helpers (operators' helpers)	1,354	4.40	-	-	-	-	42	-	56	-	34	-	37	100	842	186	-	57	-	-	-	-	-	-	-	-	-	-	-	-	
Treaters, oil	280	4.78	-	-	-	-	-	-	-	-	-	-	-	81	36	-	4	-	25	52	-	27	55	-	-	-	-	-	-	-	
Treaters, helpers, oil	138	4.71	-	-	-	-	-	-	-	-	-	-	-	-	26	12	-	38	62	-	-	-	-	-	-	-	-	-	-	-	
Inspecting and testing:																															
Routine testing laboratory	922	4.90	-	-	-	-	-	4	-	10	4	10	40	48	53	14	45	-	417	49	37	25	17	15	34	37	63	-	-		
Recording and control:																															
Stock clerks	303	4.65	-	-	-	-	-	-	1	9	3	1	5	20	15	114	21	22	40	39	7	3	2	-	1	-	-	-	-	-	
Material movement:																															
Truckdrivers	296	4.01	<sup>2</sup> 40	-	-	-	-	-	-	-	-	87	47	116	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Truckers, power, other than forklift	36	4.22	-	-	-	-	2	-	-	-	18	-	5	2	4	2	-	2	1	-	-	-	-	-	-	-	-	-	-	-	
Custodial:																															
Guards	217	4.11	8	2	-	-	3	6	4	1	27	50	108	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Janitors	303	3.64	8	-	-	-	161	39	31	34	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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

<sup>2</sup> All workers were at \$3.10 to \$3.20.

**Table 12. Occupational earnings: Texas Inland—North Louisiana—Arkansas**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																									
			Under \$2.80	\$2.80 and under \$2.90	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20 and over
All production workers	3,330	\$4.21	36	16	-	3	63	24	40	78	55	175	148	173	163	251	266	510	174	88	382	79	188	164	170	3	50	31
Maintenance:																												
Boilermakers	8	\$4.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3	4	-	-	-	-	-
Carpenters	26	4.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	3	-	-	3	4	4	-	-	-	-	-
Electricians	54	4.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	8	-	19	4	10	1	4	-	-	
Helpers, trades	92	3.70	-	-	-	-	1	-	28	8	8	12	17	18	-	-	-	-	-	-	-	-	-	-	-	-	-	
Instrument repairmen	46	4.56	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	12	-	-	5	11	7	4	-	-	-	
Machinists	35	4.61	-	-	-	-	-	-	-	-	-	-	-	-	-	8	1	3	-	-	5	6	12	-	-	-	-	
Mechanics, maintenance	80	4.47	-	-	-	-	-	-	-	-	-	-	-	-	-	21	7	-	-	25	8	19	-	-	-	-	-	
Welders, hand	67	4.38	-	-	-	-	-	-	-	-	-	3	-	-	-	19	14	-	-	15	2	9	5	-	-	-	-	
Processing:																												
Compounders	19	4.23	-	-	-	-	-	-	-	-	-	-	-	2	-	1	13	2	-	1	-	-	-	-	-	-	-	
Laborers	189	3.37	<sup>2</sup> 23	-	-	14	5	28	49	-	28	41	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pumpmen	105	4.19	-	-	-	-	-	-	-	-	-	-	20	-	18	9	34	16	-	4	-	-	-	-	-	-	4	
Pumpmen's helpers	14	4.12	-	-	-	-	-	-	-	-	-	-	8	4	-	-	-	-	-	-	-	2	-	-	-	-	-	
Stillmen (chief operators)	392	4.79	-	-	-	-	-	-	-	-	-	12	-	-	4	-	-	-	34	84	-	104	93	-	41	24		
Stillmen, assistant (assistant operators)	509	4.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	184	93	27	88	-	73	44	-	-	-		
Stillmen's helpers (operators' helpers)	363	4.14	-	-	-	-	12	-	-	-	-	9	40	166	4	68	-	64	-	5	-	-	-	-	-	-		
Treaters, oil	74	4.18	-	-	-	-	-	-	-	12	-	12	-	-	36	13	5	-	5	-	-	-	-	-	-	3		
Inspecting and testing:																												
Routine testing laboratory	235	4.10	-	12	-	-	-	-	-	-	8	9	30	39	-	41	41	16	-	5	16	18	-	-	-	-	-	
Recording and control:																												
Stock clerks	28	3.88	-	-	-	-	-	-	-	-	15	-	-	1	-	3	9	-	-	-	-	-	-	-	-	-	-	
Material movement:																												
Truckdrivers	56	3.91	-	-	-	-	-	-	-	6	8	4	2	19	8	7	-	-	-	2	-	-	-	-	-	-	-	
Custodial:																												
Guards	40	3.56	-	-	-	-	12	-	-	-	20	4	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	

<sup>1</sup> Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.  
<sup>2</sup> Workers were distributed as follows: 5 at \$2.40 and under \$2.50; 18 workers at \$2.50 to \$2.60.

**Table 13. Occupational earnings: Rocky Mountain**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																						
			Under \$3.20	\$3.20 and under \$3.30	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30 and over
All production workers -----	1,770	\$4.55	7	3	7	3	40	16	63	56	3	128	29	70	24	128	244	201	102	403	60	84	60	8	31
Maintenance:																									
Boilermakers -----	17	\$4.69	-	-	-	-	-	-	-	-	-	-	-	-	-	1	8	-	2	6	-	-	-	-	-
Carpenters -----	24	4.68	-	-	-	-	-	-	-	-	2	-	-	-	-	5	-	8	9	-	-	-	-	-	-
Electricians -----	31	4.65	-	-	-	-	-	-	-	-	5	-	-	-	4	-	-	6	16	-	-	-	-	-	-
Helpers, trades -----	31	4.02	-	-	-	-	8	-	-	2	1	3	6	8	3	-	-	-	-	-	-	-	-	-	-
Instrument repairmen -----	58	4.75	-	-	-	-	-	-	-	-	6	-	-	-	-	-	8	12	26	-	-	-	6	-	-
Machinists -----	63	4.66	-	-	-	-	-	-	-	-	6	-	-	-	16	-	-	12	29	-	-	-	-	-	-
Mechanics, maintenance -----	12	4.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	11	-	-	-	-	-	-
Pipefitters -----	61	4.75	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	16	28	-	-	-	-	-	-
Welders, hand -----	41	4.72	-	-	-	-	-	-	-	-	3	-	-	-	4	-	-	16	18	-	-	-	-	-	-
Processing:																									
Compounders -----	7	4.61	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-	-	2	-	-	-	-
Laborers -----	119	3.66	-	3	7	-	37	-	56	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks -----	61	4.38	-	-	-	-	-	-	-	-	-	21	-	4	2	12	6	8	4	3	-	-	1	-	-
Pumpmen -----	87	4.76	-	-	-	-	-	-	-	-	-	-	-	-	24	-	30	-	8	4	4	13	-	4	-
Pumpmen's helpers -----	23	4.78	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	19	-	-	-	-	-
Stillmen (chief operators) -----	154	5.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	42	79	16	-	<sup>2</sup> 16	-
Stillmen, assistant (assistant operators) -----	216	4.73	-	-	-	-	-	-	-	-	-	-	-	5	-	30	63	8	107	-	-	3	-	-	-
Stillmen's helpers (operators' helpers) -----	105	4.65	-	-	-	-	-	-	-	-	-	-	6	5	4	8	57	-	25	-	-	-	-	-	-
Inspecting and testing:																									
Routine testing laboratory -----	82	4.30	-	-	-	-	-	-	-	-	-	31	12	3	1	13	12	-	-	10	-	-	-	-	-
Recording and control:																									
Stock clerks -----	14	4.11	2	-	-	-	1	-	-	-	3	-	3	-	1	-	-	-	4	-	-	-	-	-	-
Material movement:																									
Truckdrivers -----	33	4.21	-	-	-	-	-	-	-	-	15	8	4	-	4	-	-	-	2	-	-	-	-	-	-
Custodial:																									
Janitors -----	13	3.34	<sup>3</sup> 5	-	-	3	3	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-

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

<sup>2</sup> All workers were at \$5.30 to \$5.40.

<sup>3</sup> Workers were distributed as follows: 1 at \$2.30 to \$2.40; 1 at \$2.60 to \$2.70; 2 at \$2.80 to \$2.90; and 1 at \$3 to \$3.10.

**Table 14. Occupational earnings: West Coast**

(Distribution of workers in selected occupations in petroleum refineries by straight-time hourly earnings, <sup>1</sup> April 1971)

Department and occupation	Number of workers	Average hourly earnings <sup>1</sup>	Number of workers receiving straight-time hourly earnings <sup>1</sup> of—																	
			\$3.60 and under \$3.70	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30
			\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50	\$4.60	\$4.70	\$4.80	\$4.90	\$5.00	\$5.10	\$5.20	\$5.30	\$5.40
All production workers -----	9,815	\$4.65	<sup>2</sup> 160	116	57	479	319	323	315	566	557	590	1,478	564	724	2,023	594	274	237	<sup>3</sup> 439
Maintenance:																				
Boilermakers -----	180	\$4.93	-	-	-	-	-	-	-	-	-	-	-	-	10	170	-	-	-	-
Carpenters -----	110	4.92	-	-	-	-	-	-	-	-	-	-	-	13	97	-	-	-	-	-
Electricians -----	128	4.97	-	-	-	-	-	-	-	-	-	-	-	9	75	44	-	-	-	-
Helpers, trades -----	130	4.05	-	-	-	77	9	20	17	-	7	-	-	-	-	-	-	-	-	-
Instrument repairmen -----	187	4.93	-	-	-	-	-	-	-	-	-	-	-	16	157	14	-	-	-	-
Machinists -----	356	4.92	-	-	-	-	-	-	-	-	-	-	-	80	276	-	-	-	-	-
Pipefitters -----	431	4.92	-	-	-	-	-	-	-	-	-	-	-	73	358	-	-	-	-	-
Welders, hand -----	131	4.92	-	-	-	-	-	-	-	-	-	-	-	27	104	-	-	-	-	-
Processing:																				
Compounders -----	47	4.56	-	-	-	-	-	2	7	14	-	20	-	4	-	-	-	-	-	-
Laborers -----	89	3.73	49	24	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loaders, tank cars or trucks -----	64	4.14	-	-	-	-	11	44	9	-	-	-	-	-	-	-	-	-	-	-
Package fillers, machine -----	30	4.04	-	-	4	17	-	4	1	-	4	-	-	-	-	-	-	-	-	-
Pumpmen -----	227	4.62	-	-	-	-	-	-	-	24	20	8	154	4	-	17	-	-	-	-
Pumpmen's helpers -----	72	4.24	-	3	-	5	5	7	20	32	-	-	-	-	-	-	-	-	-	-
Stillmen (chief operators) -----	711	5.26	-	-	-	-	-	-	-	-	-	-	-	-	24	-	156	188	343	-
Stillmen's assistant (assistant operators) -----	1,473	4.74	-	-	-	-	-	-	-	106	16	616	373	177	90	95	-	-	-	-
Stillmen's helpers (operators' helpers) -----	362	4.27	-	52	-	31	-	37	30	108	57	24	23	-	-	-	-	-	-	-
Treaters, oil -----	81	4.79	-	-	-	-	-	-	-	7	-	44	5	4	-	-	16	5	-	-
Treaters' helpers, oil -----	41	4.48	-	-	-	-	10	-	5	5	-	-	21	-	-	-	-	-	-	-
Inspecting and testing:																				
Routine testing laboratory -----	232	4.61	-	-	-	-	-	14	12	64	9	30	26	7	12	22	24	4	-	8
Recording and control:																				
Stock clerks -----	51	4.29	-	-	-	2	4	-	10	27	-	8	-	-	-	-	-	-	-	-
Material movement:																				
Truckdrivers -----	174	4.27	-	-	-	10	-	50	45	39	-	30	-	-	-	-	-	-	-	-
Truckers, power, forklift -----	38	3.97	-	-	16	9	12	1	-	-	-	-	-	-	-	-	-	-	-	-
Custodial:																				
Guards -----	44	4.03	-	-	-	19	19	-	-	6	-	-	-	-	-	-	-	-	-	-
Janitors -----	58	3.81	25	2	23	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-

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

<sup>2</sup> Includes 2 workers under \$3.60.

<sup>3</sup> Includes 18 workers at \$5.40 and over.

**Table 15. Method of wage payment**

(Percent of production workers in petroleum refineries by method of wage payment, United States and regions, April 1971)

Method of wage payment <sup>1</sup>	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	99	100	100	100	100	100	100	100
Formal plans -----	99	97	99	100	99	99	100	99	99
Single rate -----	79	89	77	97	86	55	99	99	92
Range of rates -----	20	8	23	3	14	45	1	1	8
Individual rate -----	( <sup>2</sup> )	3	( <sup>2</sup> )	-	( <sup>2</sup> )	( <sup>2</sup> )	-	( <sup>2</sup> )	( <sup>2</sup> )
Incentive workers -----	( <sup>2</sup> )	1	-	-	-	-	-	-	-

<sup>1</sup> For definition of method of wage payment, see appendix A.

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

NOTE: Because of rounding, sums of individual items may not equal totals.

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**Table 16. Scheduled weekly hours**

(Percent of production workers in petroleum refineries by scheduled weekly hours,<sup>1</sup> United States and regions, April 1971)

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
40 hours -----	98	100	100	94	100	98	98	100	100
42 hours -----	2	-	-	6	-	2	2	-	-

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

**Table 17. Shift differential practices**

(Percent of production workers assigned to rotating shifts<sup>1</sup> in petroleum refineries by amount of shift differential, United States and regions, April 1971)

Shift differentials	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			
	Schedules																										
	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night	Day	Eve- ning	Night
Workers assigned to rotating shifts -----	16.8	16.4	16.2	15.0	14.7	14.7	15.0	15.3	15.3	18.9	18.6	18.1	18.0	18.0	17.5	15.3	15.2	15.1	17.7	16.5	16.4	26.5	21.7	21.1	17.7	17.0	16.8
Receiving shift differential -----	.6	16.4	16.2	.5	14.7	14.7	-	15.3	15.3	.7	18.6	18.1	-	18.0	17.5	-	15.2	15.1	1.3	16.2	16.1	-	21.7	21.1	2.6	17.0	16.8
Uniform cents per hour -----	-	14.7	13.4	-	12.3	12.1	-	15.3	15.3	-	17.9	14.8	-	18.0	16.8	-	14.0	13.1	-	14.9	10.1	-	21.7	18.1	-	11.9	11.7
9 cents -----	-	.1	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 cents -----	-	( <sup>2</sup> )	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 cents -----	-	14.3	-	-	12.3	-	-	11.7	-	-	17.3	-	-	18.0	-	-	13.4	-	-	14.9	-	-	21.7	-	-	11.9	-
18 cents -----	-	-	.1	-	-	-	-	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20 cents -----	-	.1	( <sup>2</sup> )	-	-	-	-	-	1.4	-	.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22½ cents -----	-	.2	.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30 cents -----	-	-	13.1	-	12.1	-	-	11.7	-	-	14.8	-	-	16.8	-	.6	-	-	.6	-	10.1	-	-	18.1	-	-	11.7
Receiving paid lunch only -----	.6	-	-	.5	-	-	-	-	-	.4	-	-	-	-	-	-	-	12.4	1.3	-	-	-	-	-	2.6	-	-
Receiving paid lunch plus cents differential -----	-	1.6	2.7	-	2.4	2.6	-	-	-	-	.4	3.0	-	.7	-	-	-	-	-	1.3	5.9	-	-	3.0	-	5.2	5.2
Other -----	.1	.1	.1	-	-	-	-	-	-	.3	.3	.3	-	-	-	1.2	2.1	-	-	-	-	-	-	-	-	-	-
Receiving no shift differential -----	16.1	( <sup>2</sup> )	( <sup>2</sup> )	14.5	-	-	15.0	-	-	18.2	-	-	18.0	-	-	15.3	-	-	16.4	.4	.4	26.5	-	-	15.1	-	-

<sup>1</sup> Workers assigned to rotating shifts successively worked on the day, evening, and night schedules. Workers employed on fixed extra shifts accounted for less than 3 percent of the labor force and those on other types, such as oscillating, accounted for 0.1 percent.

<sup>2</sup> Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal totals.

**Table 18. Paid holidays**

(Percent of production workers in petroleum refineries with formal provisions for paid holidays, United States and regions, April 1971)

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
7 days -----	1	-	-	-	-	2	-	-	-
8 days -----	5	-	45	11	7	-	16	9	-
9 days -----	82	67	48	84	88	97	84	91	59
10 days -----	3	5	7	5	5	1	-	-	-
10 days plus 1 half day -----	6	3	-	-	-	-	-	-	41
11 days -----	4	25	-	-	-	-	-	-	-

NOTE: Because of rounding, sums of individual items may not equal totals.

**Table 19. Paid vacations**

(Percent of production workers in petroleum refineries with formal provisions for paid vacations, United States and regions, April 1971)

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
<u>Method of payment</u>									
Workers in establishments providing paid vacations-----	100	100	100	100	100	100	100	100	100
Length-of-time payment-----	95	73	100	96	100	100	100	100	100
Percentage payment-----	1	-	-	4	-	-	-	-	-
Other-----	4	27	-	-	-	-	-	-	-
<u>Amount of vacation pay<sup>1</sup></u>									
After 1 year of service:									
1 week-----	7	-	81	15	19	1	2	-	-
2 weeks-----	93	100	19	85	81	99	98	100	100
After 2 years of service:									
1 week-----	3	-	23	13	-	-	-	-	-
2 weeks-----	97	100	77	87	95	100	100	100	100
Over 2 and under 3 weeks-----	( <sup>2</sup> )	-	-	-	5	-	-	-	-
After 3 years of service:									
1 week-----	1	-	14	4	-	-	-	-	-
2 weeks-----	97	91	87	96	95	100	100	100	100
Over 2 and under 3 weeks-----	1	-	-	-	5	-	-	-	-
3 weeks-----	( <sup>2</sup> )	9	-	-	-	-	-	-	-
After 5 years of service:									
Over 1 and under 2 weeks-----	1	-	-	4	-	-	-	-	-
2 weeks-----	4	-	81	2	-	-	11	-	6
3 weeks-----	95	100	19	94	100	100	90	100	94
After 10 years of service:									
2 weeks-----	1	-	14	4	-	-	2	-	-
3 weeks-----	5	-	67	2	5	2	8	-	6
4 weeks-----	94	100	19	94	95	98	90	100	94
After 15 years of service:									
2 weeks-----	1	-	-	4	-	-	2	-	-
3 weeks-----	2	-	32	-	-	2	8	-	-
4 weeks-----	96	100	68	96	100	98	68	100	100
5 weeks-----	1	-	-	-	-	-	22	-	-
After 20 years of service:									
2 weeks-----	( <sup>2</sup> )	-	-	-	-	-	2	-	-
Over 2 and under 3 weeks-----	1	-	-	4	-	-	-	-	-
3 weeks-----	1	-	23	-	-	2	-	-	-
4 weeks-----	3	5	58	-	-	1	8	-	-
5 weeks-----	95	95	19	96	100	97	90	100	100
After 25 years of service:									
2 weeks-----	( <sup>2</sup> )	-	-	-	-	-	2	-	-
Over 2 and under 3 weeks-----	1	-	-	4	-	-	-	-	-
3 weeks-----	1	-	-	-	-	2	-	-	-
4 weeks-----	2	5	23	-	-	-	8	-	-
5 weeks-----	97	95	77	96	100	98	90	100	100
Maximum vacation pay available: <sup>3</sup>									
2 weeks-----	( <sup>2</sup> )	-	-	-	-	-	2	-	-
Over 2 and under 3 weeks-----	1	-	-	4	-	-	-	-	-
3 weeks-----	1	-	-	-	-	2	-	-	-
4 weeks-----	2	5	23	-	-	-	8	-	-
5 weeks-----	96	95	77	96	100	98	83	100	100
6 weeks-----	( <sup>2</sup> )	-	-	-	-	-	7	-	-

<sup>1</sup> Vacation payments, such as percent of annual earnings, were converted to an equivalent time basis. Periods of service were chosen arbitrarily and do not necessarily reflect the individual establishment provisions for progression. For example, the changes in proportions indicated at 10 years may include changes occurring between 5 and 10 years.

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

<sup>3</sup> Estimates of provisions for 30 years of service are identical.

NOTE: Because of rounding, sums of individual items may not equal totals.

**Table 20. Health, insurance, and retirement plans**

(Percent of production workers in petroleum refineries with specified health, insurance, and retirement plans, United States and regions, April 1971)

Type of benefit and financing <sup>1</sup>	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:									
Life insurance-----	99	100	100	100	100	100	91	100	100
Noncontributory plans-----	38	34	73	29	41	28	48	80	59
Accidental death and dismemberment insurance-----	57	50	93	56	68	54	84	49	54
Noncontributory plans-----	16	6	55	4	17	19	40	35	15
Sickness and accident insurance or sick leave or both <sup>2</sup> -----	100	100	100	100	100	100	100	100	100
Sickness and accident insurance-----	27	41	86	18	16	25	23	46	18
Noncontributory plans-----	16	41	63	8	9	8	7	18	18
Sick leave (full pay, no waiting period)-----	67	62	7	60	87	67	71	59	77
Sick leave (partial pay or waiting period)-----	26	33	55	32	11	26	29	23	11
Hospitalization insurance-----	100	100	100	100	100	100	100	100	100
Covering employees only-----	3	18	-	-	-	-	2	-	-
Covering employees and their dependents-----	97	82	100	100	100	100	98	100	100
Noncontributory plans-----	5	-	55	9	11	1	7	-	-
Noncontributory plans for employees; contributory plans for dependents-----	15	25	21	-	-	9	26	19	44
Surgical insurance-----	100	100	100	100	100	100	100	100	100
Covering employees only-----	3	18	-	-	-	-	2	-	-
Covering employees and their dependents-----	97	82	100	100	100	100	98	100	100
Noncontributory plans-----	5	-	55	9	11	1	7	-	-
Noncontributory plans for employees; contributory plans for dependents-----	15	25	21	-	-	9	26	19	44
Medical insurance-----	100	100	100	100	100	100	100	100	100
Covering employees only-----	3	18	-	-	-	-	2	-	-
Covering employees and their dependents-----	97	82	100	100	100	100	98	100	100
Noncontributory plans-----	5	-	55	9	11	1	7	-	-
Noncontributory plans for employees; contributory plans for dependents-----	15	25	21	-	-	9	26	19	44
Major medical insurance-----	96	91	86	94	100	98	100	100	95
Covering employees only-----	3	18	-	-	-	-	2	-	-
Covering employees and their dependents-----	93	73	86	94	100	98	98	100	95
Noncontributory plans-----	4	-	42	9	11	1	7	-	-
Noncontributory plans for employees; contributory plans for dependents-----	14	19	21	-	-	9	26	19	44
Retirement plans <sup>3</sup> -----	100	100	100	100	100	100	100	100	100
Pensions-----	100	100	100	100	100	100	100	100	100
Noncontributory plans-----	75	60	74	86	51	94	69	59	53
Severance pay-----	12	24	24	24	12	4	28	14	-

<sup>1</sup> "Noncontributory plans" include only those plans financed entirely by the employer. Legally required plans such as workmen's compensation and social security are excluded; however, plans required by State temporary disability insurance laws are included if the employer contributes more than is legally required or the employees receive benefits in excess of legal requirements.

<sup>2</sup> Unduplicated total of workers receiving sick leave or sickness and accident insurance shown separately.

<sup>3</sup> Unduplicated total of workers covered by pensions or retirement severance pay shown separately.



Table 21. Other selected benefits

(Percent of production workers in petroleum refineries providing funeral leave pay, jury duty pay, severance pay, and thrift or savings plans, United States and regions, April 1971)

Item	United States	East Coast	Western Pennsylvania- West Virginia	Midwest I	Midwest II
Workers in establishments with provisions for:					
Funeral leave pay -----	100	100	100	100	100
Jury duty pay -----	99	100	88	100	100
Technological severance pay <sup>1</sup> -----	65	48	45	79	81
Thrift or savings plans <sup>2</sup> -----	85	97	19	91	79
		Texas- Louisiana Gulf Coast	Texas Inland- North Louisiana- Arkansas	Rocky Mountain	West Coast
Workers in establishments with provisions for:					
Funeral leave pay -----		100	100	100	100
Jury duty pay -----		100	100	100	100
Technological severance pay <sup>1</sup> -----		70	90	100	35
Thrift or savings plans <sup>2</sup> -----		95	83	100	56

<sup>1</sup> Pay to employees permanently separated from the company through no fault of their own.

<sup>2</sup> Includes only those plans to which the employer makes monetary contributions beyond administrative cost.

## Appendix A. Scope and Method of Survey

### Scope of survey

The survey includes establishments primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, and other products from crude petroleum, and its fractionation products either through straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes (industry 2911 as defined in the 1967 edition of the *Standard Industrial Classification Manual*, prepared by the U.S. Office of Management and Budget). Separate

auxiliary units such as central offices and research laboratories are excluded.

The 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.

The number of establishments and workers studied by the Bureau, as well as the number estimated to be within scope of the survey during the payroll period studied, are shown in table A-1.

**Table A-1. Estimated number of establishments and workers within scope of survey and number studied, petroleum refining industry, April 1971**

Region <sup>1</sup>	Number of establishments <sup>2</sup>		Workers in establishments		
	Within scope of study	Actually studied	Within scope of study		Actually studied
			Total <sup>3</sup>	Production workers	Total <sup>3</sup>
United States .....	185	109	98,073	69,831	72,341
East Coast .....	20	13	14,263	10,602	12,076
Western Pennsylvania—West Virginia .....	12	9	2,748	2,131	2,282
Midwest I. ....	33	17	16,387	11,568	11,390
Midwest II. ....	29	17	8,862	6,428	6,622
Texas—Louisiana Gulf Coast .....	34	21	34,010	24,187	23,792
Texas Inland—North Louisiana—Arkansas ....	20	10	4,545	3,330	3,182
Rocky Mountain. ....	14	9	2,798	1,770	1,987
West Coast .....	23	13	14,460	9,815	11,010

<sup>1</sup> The regions used in this study include: 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.—Illinois, Indiana, 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, Kleberg, 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, Tangipahoa, Vernon, Rapides, Washington, and 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 and 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; and West Coast—Arizona, California, Nevada, Oregon, and Washington. Alaska and Hawaii were excluded from the survey.

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

<sup>3</sup> Includes executive, professional, office clerical, and other workers excluded from the production workers category shown separately.

## Method of study

Data were obtained by personal visits of Bureau field staff. The survey was conducted on a sample basis. To obtain appropriate accuracy at minimum cost, a greater proportion of large than of small establishments was studied. In combining the data, however, all establishments were given their 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 defined as a single physical location where industrial operations are performed. An establishment is not necessarily identical with the company, which may consist of one or more establishments. The terms "establishment" and "refinery" have been used interchangeably in this report.

## Employment

The 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 labor force included in the survey. The advance planning necessary to make a wage survey requires the use of lists of establishments assembled considerably in advance of the payroll period studied.

## Production workers

The term "production workers," as used in this report, includes working foremen and all nonsupervisory workers engaged in nonoffice functions. Administrative, executive, professional, and technical personnel, and force-account construction employees, who were utilized as a separate work force on the firm's own properties, were excluded.

## Occupations selected for study

Occupational classification was based on a uniform set of job descriptions designed to take account of inter-establishment and interarea variations in duties within the same job. (See appendix B for these descriptions.) The occupations were chosen for their numerical importance, their usefulness in collective bargaining, or their representativeness of the entire job scale in the industry. Working supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers were not reported in the data for selected occupations but were included in the data for all production workers.

## Wage data

Information on wages relates to straight-time hourly earnings, excluding premium pay for overtime and for work on weekends, holidays, and late shifts. Incentive payments, such as those resulting from production bonus systems, and cost-of-living bonuses were included as a part of the worker's regular pay; but nonproduction bonus payments such as Christmas or yearend bonuses were excluded.

Average (mean) hourly rates or earnings for each occupation or other group of workers, such as production workers, were calculated by weighting each rate (or hourly earnings) by the number of workers receiving the rate, totaling, and dividing by the number of individuals. The hourly earnings of salaried workers were obtained by dividing their straight-time salary by normal rather than actual hours.

## Size of community

Tabulations by size of community pertain to metropolitan and nonmetropolitan areas. The term "metropolitan area," as used in this bulletin, refers to the Standard Metropolitan Statistical Areas (SMSA's) as defined by the U.S. Office of Management and Budget through January 1968.

Except in New England, a Standard Metropolitan Statistical Area is defined as a county or group of contiguous counties which contain at least one city of 50,000 inhabitants or more. Counties contiguous to the one containing such a city are included in a Standard Metropolitan Statistical Area if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, the city and town are administratively more important than the county, and they are the units used in defining Standard Metropolitan Statistical Areas for that region.

## Method of wage payment

Tabulations by method of wage payment relate to the number of workers paid under the various 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 with reference to 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. Individual experienced

workers occasionally may be paid above or below the single rate for special reasons, but such payments are regarded as exceptions. Range-of-rate plans are those in which the minimum and/or maximum 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 various concepts of merit and length of service.

Incentive workers are classified under bonus plans. Production bonuses are based on production in excess of a quota or for completion of a job in less than standard time.

#### **Scheduled weekly hours**

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

#### **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 oscillating shifts have work schedules which alternate between two periods of time (e.g., midnight to 8 a.m., 8 a.m. to 4 p.m.) but do not make the full cycle as under rotating shift arrangements. Workers assigned to fixed shifts work regularly on either a day, evening, or night schedule.

#### **Supplementary wage provisions**

Supplementary benefits were treated statistically on the basis that if formal provisions were applicable to half or more of the production workers in an establishment, the benefits were considered applicable to all such workers. Similarly, if fewer than half of the workers were covered, the benefit was considered nonexistent in the establishment. Because of length-of-service and other eligibility requirements, the proportion of workers receiving the benefits may be smaller than estimated.

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

*Paid vacations.* The summary of vacation plans is limited to formal arrangements, excluding informal plans whereby time off with pay is granted at the discretion of the employer or the supervisor. Payments not on a time basis were converted; for example, a payment of 2 percent of annual earnings was considered the equivalent of 1 week's pay. The periods of service for which data are presented were selected as representative of the most

common practices, but they do not necessarily reflect individual establishment provisions for progression. For example, the changes in proportions indicated at 10 years of service include changes which occurred between 5 and 10 years.

*Health, insurance, and retirement plans.* Data are presented for health, insurance, pension, and retirement severance pay plans for which all or a part of the cost is borne by the employer, excluding programs required by law, such as workmen's compensation and social security. Among the plans included are those underwritten by a commercial insurance company and those paid directly by the employer from his 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. Information is presented for all such plans to which the employer contributes at least a part of the cost. However, in New York and New Jersey, where temporary disability insurance laws require employer contributions,<sup>1</sup> plans are included only if the employer (1) contributes more than is legally required or (2) provides the employees with benefits which exceed the requirements of the law.

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

Medical insurance refers to plans providing for complete or partial payment of doctors' fees. Such plans may be underwritten by a commercial insurance company or a nonprofit organization, or they may be a form of self-insurance.

Major medical insurance, sometimes referred to as extended medical insurance, includes the plans designed to cover employees in case of sickness or injury involving an expense which exceeds the normal coverage of hospitalization, medical, and surgical plans.

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 retirement severance pay (one payment or several over a specified period of time) made to employees on retirement. Establishments providing both retirement severance pay and retirement pensions to employees were

<sup>1</sup> The temporary disability insurance laws in California and Rhode Island do not require employer contributions.

considered as having both retirement pension and retirement severance plans. Establishments having optional plans providing employees a choice of either retirement severance pay or pensions were considered as having only retirement pension benefits.

*Paid funeral and jury duty leave.* Data for paid funeral and jury duty leave are limited to formal plans which provide at least partial payment for time lost as a result of attending funerals of specified family members or serving as a juror.

*Technological severance pay.* Data relate to formal provisions for severance pay to workers permanently separated from employment as a result of force reduction arising out of the introduction of new equipment or from department or unit closings.

*Thrift or savings plans.* Thrift or savings plans are limited to those to which the employer made monetary contributions, beyond administrative costs.

## Appendix B. Occupational Descriptions

The primary purpose of preparing job descriptions for the Bureau's wage surveys is to assist its field staff 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 in use in individual establishments or those prepared for other purposes. In applying these job descriptions, the Bureau's field staff are instructed to exclude working supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers.

### **Boilermaker, maintenance**

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, alining, 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, maintenance**

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 in an establishment. 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; 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.

### **Compounder**

*(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 pumpmen 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; 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 for analysis.

### **Electrician, maintenance**

Performs a variety of electrical trade functions such as the installation, maintenance, or repair of equipment for the generating, distribution, or utilization of electric energy in an establishment. 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, layout, 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; 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.

### **Guard**

Performs routine plant protection duties, either at fixed post or on tour, maintaining order, using arms or force where necessary. *Includes gatemen who are stationed at gate and check on identity of employees and other persons entering.*

### **Helper, trades, maintenance**

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 worker by holding materials or tools; performing other semiskilled or 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 he is permitted to perform specialized machine operations, or parts of a trade that are also performed by workers on a full-time basis.

### **Instrument repairman**

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.

### **Janitor**

*(Day porter; sweeper; charwoman; janitress)*

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, and/or scrubbing

and polishing floors; removing chips, trash, and other refuse; dusting equipment, furniture, or fixtures; polishing metal fixtures or trimmings; providing supplies and minor maintenance services; cleaning lavatories, showers, and restrooms. *Workers who specialize in window washing are excluded.*

### **Laborer**

Performs miscellaneous laboring tasks in plants or outside 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. Usually average standards of performance are attained after a brief period of service. Specific assignments among laboring tasks include: Loading and unloading, stacking, interprocess moving of materials, cleaning work areas and equipment, digging and shoveling. Tools such as crowbars, picks, shovels, wheelbarrows, hand trucks, and other lifting and excavating devices may be employed on specific assignments.

### **Loader, tank cars or trucks**

*(Rackman; tank-car loader; topman; 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 pumpman to start pumps, and filling tank to proper level. May perform a variety of other tasks relating to shipment of product. May gage or sample shipping tanks.

### **Machinist, maintenance**

Produces replacement parts and new parts for mechanical equipment operated in an establishment. 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 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 and other materials; selecting standard materials, parts, and equipment required for his work; fitting and assembling parts. 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**

Performs the work of two or more skilled maintenance trades rather than specializing in one trade or one type of maintenance work. The classification includes workers regularly performing at least two types of skilled maintenance work, such as pipefitting, boiler-making, 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 apprenticeship or equivalent training and experience. *Exclude workers who make only minor repairs or adjustments.*

### **Mechanic, maintenance**

Repairs machinery or mechanical equipment of an establishment. 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 involve mainly 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 of the machine to a machine shop for major repairs; preparing written specifications for major repairs or for the production of parts ordered from machine shop; reassembling machines; and making all necessary adjustments for operation. In general, the work of a 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.

### **Package filler, machine**

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; removing filled containers from machine. *Workers who tend filling machines that also cap or close filled containers, are included.*

### **Pipefitter, maintenance**

Installs or repairs water, steam, gas, or other types of pipe and pipe fittings in an establishment. 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; 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.*

### **Pumpman**

*(Pumper; 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 gaging contents of storage tanks; 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 gagers whose primary duties involve measuring quantity and temperature of oil in storage tanks and controlling flow of oil into pipelines.*

### **Pumpman's helper**

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

### **Routine tester, laboratory**

Performs various standard laboratory tests on different petroleum products to determine certain chemical and/or physical properties of the product, and submits results of the tests to operators of the various departments, by which they 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; submitting results to chemist or to heads of processing units. May interpret results of tests. *Chemists and laboratory laborers (bottle washers, etc.) are excluded.*

### **Stillman**

*(Chief 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: Directing and coordinating the activities of the various crew members on the still; interpreting instructions and operational requirements; keeping informed of operating conditions; 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; preparing equipment for maintenance work and directing repairs. May be required to use computer data in certain phases of work. *Stillmen on one-man operations are excluded.*

### **Stillman, assistant**

*(Assistant operator; control man; first helper)*

Helps stillman 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 stillman as to operating condition of unit; lubricating and cleaning equipment. May check operation and adjust speed of pumps which circulate products through unit, may make minor repairs to equipment.

### **Stillman's helper**

*(Operator helper; still fireman)*

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 stillman or stillman's helper of previous shift specifying temperature to be maintained; reading temperature, pressure, and flow gages 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 gage and meter readings and/or other pertinent information on log sheet or other records; reporting irregularities of still operation to stillman. May clean burners and/or remove and replace plates covering openings that provide access to interior of still for cleaning.

### **Stock 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; requesting or ordering supplies when needed. *Stockroom laborers, tool crib attendants, and employees who supervise stock clerks and laborers are excluded.*

### **Treater**

*(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 gages 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, may operate pumps to circulate liquids through the units.

### **Treater's helper**

*(Treater, second class)*

Assists treater in treating gasoline, kerosene, oils, wax,

and other petroleum products with chemicals, steam, water, or air to remove sulphur and/or other impurities. Work involves *most of the following*: Patrolling unit regularly to check on operations and/or equipment; making operating and control changes as directed; drawing off water and spent chemicals after treatment and separation, by valve manipulation; mixing chemical treating solution and adding treating chemicals to oil; manipulating valves to charge equipment with oils to be treated and to maintain level of oil and solutions in equipment; maintaining daily log or other operational records. May operate or regulate speed of pumps to circulate liquids through unit, or make chemical, specific gravity, color, or other tests to determine whether treating process is being carried on properly.

#### **Truckdriver**

Drives a truck within a city or industrial area to transport materials, merchandise, equipment, or men between various types of establishments such as: Manufacturing plants, freight depots, warehouses, wholesale and retail establishments and/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. *Driver-salesmen and over-the-road drivers are excluded.*

#### **Trucker, power**

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:

Trucker, power (forklift)

Trucker, power (other than forklift)

#### **Watchman**

Makes rounds of premises periodically in protecting property against fire, theft, and illegal entry.

#### **Welder, hand, maintenance**

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; 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.

## Industry Wage Studies

The most recent reports for industries included in the Bureau's program of industry wage surveys since January 1960 are listed below. Copies are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, or any of its regional sales offices, and from the Bureau of Labor Statistics, Washington, D.C., 20212, or from any of its regional offices shown on the inside back cover.

### I. Occupational Wage Studies

#### *Manufacturing*

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Basic Iron and Steel, 1967. BLS Bulletin 1602 .....	\$0.55
Candy and Other Confectionery Products, 1970. BLS Bulletin 1732 .....	.45
Cigar Manufacturing, 1967. BLS Bulletin 1581 .....	.25
Cigarette Manufacturing, 1965. BLS Bulletin 1472 .....	.20
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Flour and Other Grain Mill Products, 1967. BLS Bulletin 1576 .....	.25
Fluid Milk Industry, 1964. BLS Bulletin 1464 .....	.30
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Work Clothing, 1968. BLS Bulletin 1624 . . . . .	.50

### *Nonmanufacturing*

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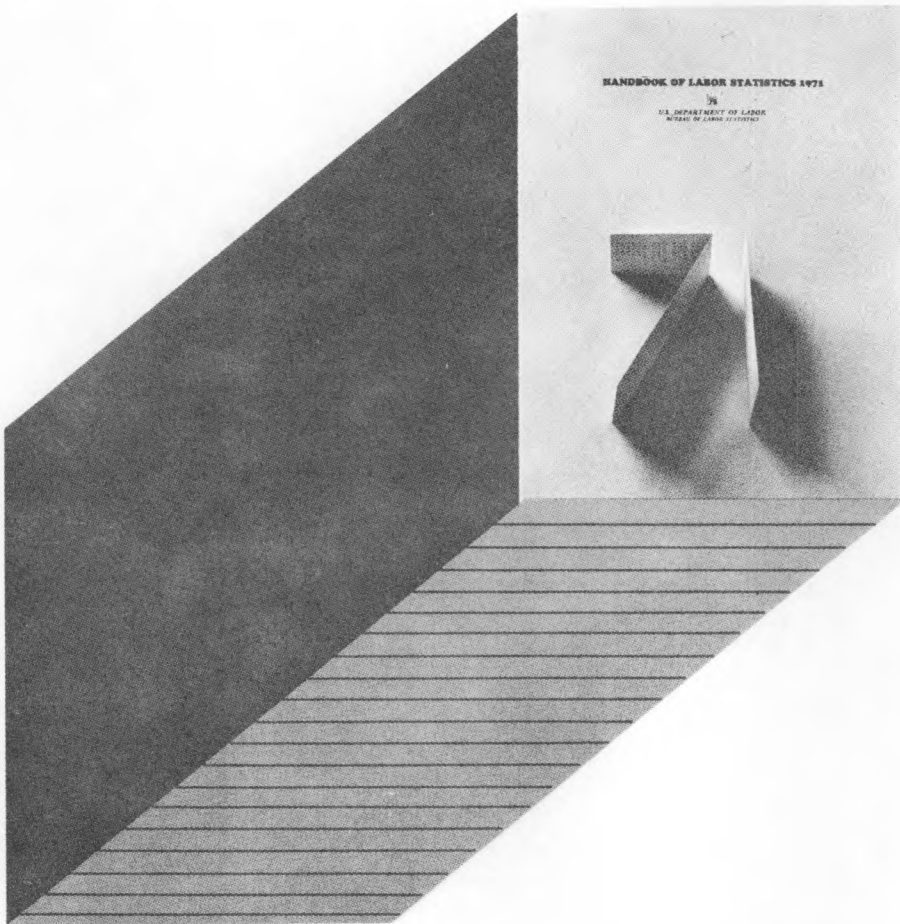
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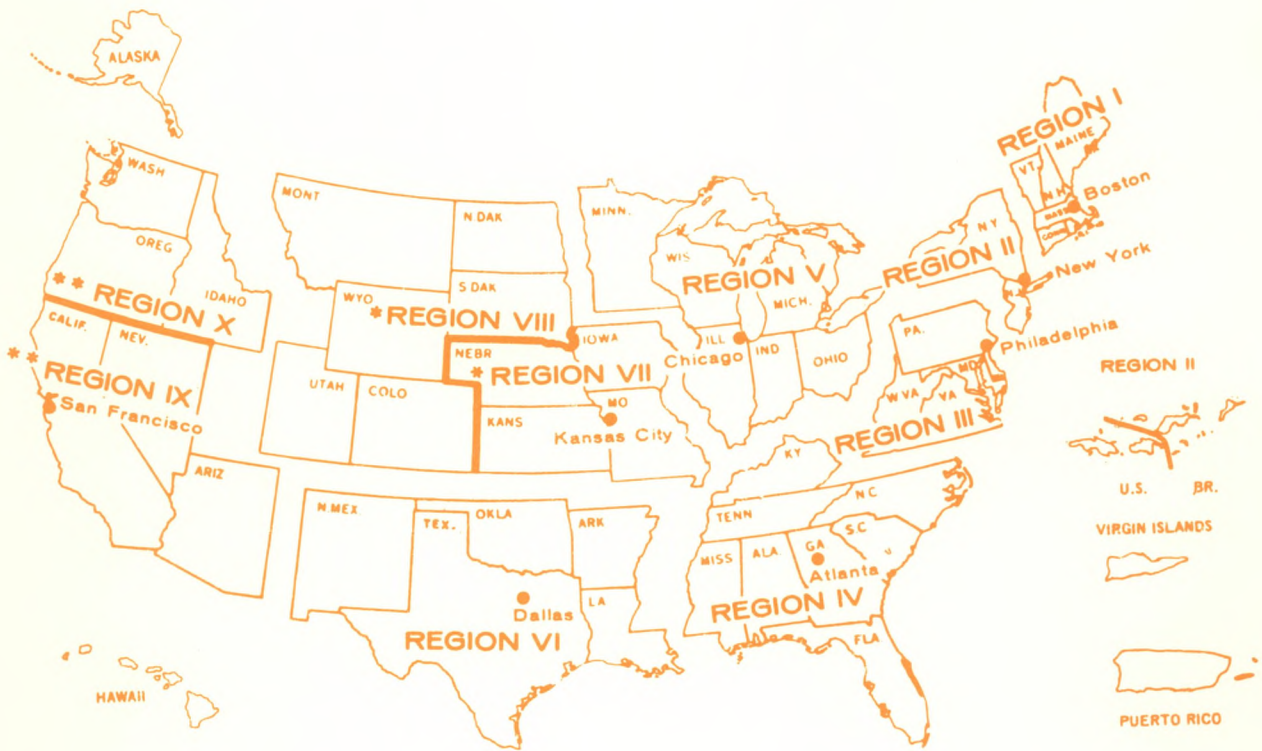


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