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WAGES AND HOURS OF LABOR SERIES

**WAGES AND HOURS OF LABOR
IN THE PETROLEUM INDUSTRY
1920**



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WAGES AND HOURS OF LABOR IN THE PETROLEUM INDUSTRY, 1920.¹

INTRODUCTION AND SUMMARY.

In November, 1920, the Bureau of Labor Statistics undertook a comprehensive study of wages and hours of labor of employees in the petroleum industry in the United States. This report presents the average earnings per hour and average full-time hours, with average hours actually worked and average earnings actually received in a sample pay-roll period, 92 per cent of the rolls being for a period in November, 1920, with the remaining ones as near November as was possible. Average full-time hours per day and per week are shown separately for employees working seven days, six days, and five days, respectively, per week. The average hours worked and average earnings made in the pay-roll period are shown for each district and for the United States as a whole. The report shows also the average number of starts (turns) made in the pay-roll period and the per cent that such average is of the number of days constituting the pay-roll period, together with the per cent that average hours actually worked are of the average full-time hours in the pay-roll period.

The study was confined to three general subdivisions of the industry, namely, drilling and operation of wells, construction and operation of pipe lines, and operation of refineries. Coöperation plants, tin-can factories, and original construction work at refineries were omitted, as were also the marketing and marine operations.

The report is not intended to be a census of the petroleum industry, but every possible effort has been made to apportion the work so as to obtain a fair representation of the industry in each section of the country where it has been developed to any considerable extent. Representative establishments were selected, attention being given to both large and small plants as well as to general location; that is, whether in industrial centers or in isolated sections, because all these conditions influence to some degree the wages paid and the hours worked.

Schedules were obtained from 62 companies in 16 States engaged in the drilling and operation of oil wells, employing 35,255 males, estimated to be 25 per cent of the total number of such employees in the United States; from 40 companies in 17 States engaged in the construction and operation of pipe lines, on which 19,643 males were employed, estimated as 50 per cent of all pipe-line employees in the United States; and from 80 refineries in 15 States employing 42,537 males and 274 females, estimated as 35 per cent of all oil refinery

¹A summary of this report was printed in the Monthly Labor Review for May, 1921.

employees in the United States. Females were found in productive work in only 5 establishments, located in 5 States, and they were engaged principally in filling and packing bottles, cases, cartons, and other containers of the products manufactured, a few working at common labor. Kitchen help and janitors, both male and female, have been omitted from the study.

In keeping with the long-established custom of the bureau not to disclose the identity of plants furnishing information, the data presented in this report have been compiled by districts, the States in each district being specified. The refineries are grouped in six districts, while wells and pipe lines are each grouped in five, with a different arrangement of States.

The bureau met with the most hearty cooperation upon the part of all companies visited, all data relating to hours and earnings having been taken directly from the pay rolls by special agents of the bureau.

In the instance of each establishment scheduled the pay-roll period covered was for a date prior to any general reduction in rates of wages or increase in hours per day or week; that is, it represented the war-time peak of rates and hours, a period in November, 1920, having been selected in very nearly all cases. All bonuses were included, with exception of a special case involving two companies in California each of which furnished data covering wells, pipe lines, and refineries. These two companies, along with others which were not scheduled, entered into an agreement with their employees (said agreement to run for a period of 14 months ending August 31, 1921) providing that each regular employee, excepting certain classes of common labor, should receive an additional compensation of 25 cents per day, payable on August 31, 1921, conditioned upon the faithful fulfillment of the agreement. In this connection it should be stated that the collection of statistical data in California was not limited to companies which entered into the agreement, care having been taken to schedule a sufficient number of those outside the agreement to make the report representative of conditions in the State.

Since obtaining these figures, which represent the rates in effect in November, 1920, press reports indicate that wages have been reduced in many of the larger establishments scheduled. In most of such cases it meant that a part or the whole of certain bonuses granted during the war were discontinued. The bureau has not undertaken, however, to ascertain the exact amount of such reductions or the number of establishments in which they occurred.

In classifying by occupation the employees at the wells, 13 occupations were selected, these being the only ones in which any considerable number of employees were found. In fact, 89 per cent of the employees at the wells of the 62 companies scheduled are covered in these 13 occupations. Furthermore, the mechanics, other than carpenters and machinists, are shown in a collective group, as are also mechanics' helpers, leaving only about 6 per cent of the total which are shown in a residual group as "Other employees." The principal occupations going to make up this group will be found under the "Description of oil-well occupations," page 9. Teamsters furnishing their own teams were omitted from the tabulation because no accurate data as to the daily cost of the team or as to the number of teams furnished by an individual were obtainable. Another class

of employees omitted from the tabulation were those engaged in the manufacture of casing-head gasoline, so called because it is extracted from the natural gas coming from the casing heads of the oil wells. Adjunct plants of this class, while found at many of the wells, are by no means general. No females were scheduled at the wells.

In handling the data relating to work on the pipe lines 12 occupations were selected, and these cover 94 per cent of all employees on the pipe lines of the 40 companies scheduled. As in the case at the wells, mechanics other than carpenters and machinists are classed separately and so are mechanics' helpers, leaving only 2 per cent of the total to be grouped under "Other employees." Under "Laborers" are included roustabouts, yardmen, boiler cleaners, and tongsmen, while those included under "Other mechanics" are named in the "Description of pipe-line occupations," p. 12, as are also the more important of the occupations grouped under "Other employees." Teamsters furnishing their own teams were not tabulated. No females were scheduled on pipe lines.

In classifying the occupations found in the refineries, they were grouped under five principal departments, namely: "Refining" with 24 occupations, in two of which females were employed; "Filling, packing, and shipping," with 8 occupations, in 3 of which females were employed; "Transportation—railroad, motor, and team," with 7 occupations, in which males only were employed; "Miscellaneous labor, maintenance, and repair," with 20 occupations and a group of "Other mechanics," females being found in 2 occupations only; and "Guarding, etc.," with 1 selected occupation and a miscellaneous group classed as "Other employees," no females being reported under this department. The total of 60 selected occupations cover 91 per cent of employees at the 80 refineries scheduled. The more important of the miscellaneous occupations classed under "Other employees" will be found under the "Description of occupations at refineries," p. 21.

No separate classification was made for the paraffin department because in many instances it was not possible to segregate the employees of that department, but so far as can be observed from data at hand the wages paid and the hours worked do not differ materially from those in other branches of the refining department.

Still cleaners have been omitted because in most cases no accurate records were kept as to their hours of work.

It will be observed that coal passers and ashmen have been thrown together because the work was closely related and the rates about the same. For similar reasons other groupings were made as follows: Engineers and chillermen; firemen and assistant engineers; retort, acid, and kettle men; stillmen's assistants, chargers, and headers-up; branders and painters; teamsters and drivers; bricklayers and masons; and crane operators. It should be stated also that all laborers in the refineries have been classed under the department designated as "Miscellaneous labor, maintenance, and repair."

The data collected show that the regular working schedule of 74 per cent of all employees engaged in the drilling and operation of wells was seven days per week, the remaining 26 per cent being six-day workers; 34 per cent of all pipe-line employees worked seven days and 66 per cent six days per week; 23 per cent of all employees at the refineries were seven-day workers and 77 per cent six-day

workers, while an inconsequential few worked only five days per week. A more detailed summary of working time appears in the following table which relates not only to days of work per week but also to hours per day.

TABLE 1.—NUMBER AND CUMULATIVE PER CENT OF ALL EMPLOYEES IN WELLS, PIPE LINES, AND REFINERIES WORKING SPECIFIED DAYS PER WEEK, BY WORKING HOURS PER DAY, 1920.

WELLS.

Customary hours per day.	Number.			Cumulative per cent.		
	6-day workers.	7-day workers.	Total.	6-day workers.	7-day workers.	Total.
8, but less on 1 day.....	3		3	(¹)		(¹)
8.....	4,572	11,275	15,847	50	43	45
8½, but less on 1 day.....	124		124	51		45
9.....	3,287	7,689	10,976	87	73	76
9½.....		2	2		73	76
9½, but less on 1 day.....	57		57	88		77
10.....	688	2,320	3,008	96	81	85
11.....	35		35	96		85
12.....	371	4,832	5,203	100	100	100
Total.....	9,137	26,118	35,255			
Per cent.....	26	74	100			

PIPE LINES.

8.....	3,149	5,339	8,488	24	79	43
9.....	6,506	219	6,725	75	83	77
9½.....	10		10	75		77
10.....	3,243	1,043	4,286	100	98	99
12.....		134	134		100	100
Total.....	12,908	6,735	19,643			
Per cent.....	66	34	100			

REFINERIES.

8, but less on 1 day.....	² 1,986		² 1,986	² 6		² 5
8.....	³ 16,782	⁴ 8,993	⁵ 25,775	⁶ 57	⁷ 91	⁸ 65
8½, but less on 1 day.....	4,799		4,799	72		76
8½.....	4		4	72		76
8½, but less on 1 day.....	⁶ 1,832		⁶ 1,832	⁶ 77		⁶ 80
9, but less on 1 day.....	⁷ 576		⁷ 576	⁷ 79		⁷ 82
9, but less on 1 day.....	⁸ 3,742	4	⁸ 3,746	⁸ 90	91	⁸ 90
9.....	⁹ 2,030	560	⁹ 2,590	⁹ 97	96	⁹ 96
9½, but less on 1 day.....	1		1	97		96
9½, but less on 1 day.....	23		23	97		97
9½.....	141		141	97		97
10, but less on 1 day.....	120		120	97		97
10.....	¹⁰ 751	86	¹⁰ 837	¹⁰ 100	97	¹⁰ 99
10½.....	3	33	36	100	97	99
11.....	28	33	61	100	98	99
11½.....	8		8	100		99
12, but less on 2 days.....		2	2		98	99
12.....	45	213	258	100	100	100
13.....	3	13	16	100	100	100
Total.....	¹¹ 32,874	⁴ 9,937	¹² 42,811			
Per cent.....	77	23	100			

¹ Less than 1 per cent.

² Including 106 female workers.

³ Including 29 female workers.

⁴ Including 1 female worker.

⁵ Including 30 female workers.

⁶ Including 48 female workers.

⁷ Including 75 female workers.

⁸ Including 9 female workers.

⁹ Including 6 female workers.

¹⁰ Including 6 five-day workers, less than 1 per cent of total.

¹¹ Including 273 female workers.

¹² Including 274 female workers.

Taking up that section of the table which relates to wells, it is seen that there were three employees whose regular working time was six days per week, with eight hours per day for five days and a less

number of hours on the sixth day. In filling the percentage column, however, these three are negligible when compared with the total of 9,137 six-day workers. On the next line are found 4,572 six-day workers whose regular hours per day were eight for each of the six days. This number, plus the three mentioned, makes 4,575 which is 50 per cent of all six-day workers. The next entry in the six-day group shows 124 whose regular hours were 8½ for five days per week and a less number on the sixth day. The 124 added to the 4,575 gives us 4,699, or 51 per cent of the total. Going one step further to include the 3,287 working nine hours straight for six days in the week, we have 7,986, or 87 per cent of all six-day workers, who worked nine hours per day or less. This method was continued until the entire 100 per cent were accounted for. The seven-day workers were treated in a similar way, as were also the six-day and seven-day workers combined. It will be seen that a cumulative percentage, for example 100, may appear two or more times in the same column. This means that one or more employees fell within a certain classification but that the number of such employees was so very small as not to affect the percentage, which is given in round numbers. Were the percentages carried to additional decimal places a slight change would be seen, for example 99.7 and 99.9 are both expressed as 100 in round numbers.

As previously indicated, the 9,137 six-day workers constitute 26 per cent, and the 26,118 seven-day workers, 74 per cent of all employees at the wells.

The above explanation will apply also to those sections of the table which relate to pipe lines and refineries.

Some minor details of the table have been taken care of in footnotes.

The following summary table shows the average full-time hours per week and the average earnings per hour by industry subdivision and by occupation. The averages shown in this table are for the United States as a whole. In this and in the general tables also all employees are males except where females are noted.

TABLE 2.—AVERAGE FULL-TIME HOURS PER WEEK, AND AVERAGE EARNINGS PER HOUR IN THE PETROLEUM INDUSTRY IN THE UNITED STATES, BY OCCUPATIONS, 1920.

WELLS.

Occupation.	Establishments.	Employees.	Average full-time hours per week.	Average earnings per hour.
Derrick men.....	11	891	56.6	\$.752
Drillers.....	54	2,575	73.6	1.140
Drillers' helpers and clean-out helpers.....	32	2,731	59.7	.683
Firemen.....	29	1,128	57.7	.651
Gaugers.....	21	125	61.3	.658
Laborers, roustabouts, and connection men.....	56	11,813	57.7	.589
Pumpers and engineers.....	57	7,202	62.5	.582
Rig builders.....	19	432	55.2	.919
Teamsters.....	30	498	59.8	.583
Tool dressers.....	49	1,894	78.6	.934
Truck drivers.....	38	.793	59.6	.633
Mechanics:				
Carpenters.....	38	987	57.4	.828
Machinists.....	25	274	55.6	.890
Other mechanics.....	36	1,198	56.4	.791
Mechanics' helpers.....	29	544	55.9	.679
Other employees.....	48	2,072	61.9	.663
Total.....	62	35,255	.....	.....

TABLE 2.—AVERAGE FULL-TIME HOURS PER WEEK, AND AVERAGE EARNINGS PER HOUR IN THE PETROLEUM INDUSTRY IN THE UNITED STATES, BY OCCUPATIONS, 1920—Continued.

PIPE LINES.

Occupation.	Establishments.	Employees.	Average full-time hours per week.	Average earnings per hour.
Engineers and pumpers.....	40	1,734	57.2	\$0.749
Firemen.....	32	1,074	55.7	.701
Gaugers—deliverymen and oil receivers.....	39	1,303	58.9	.775
Laborers, roustabouts, etc.....	40	11,174	54.7	.528
Linemen.....	22	237	59.5	.656
Line walkers.....	39	555	62.5	.584
Oilers.....	12	296	54.1	.711
Teamsters.....	14	132	60.1	.537
Telegraph operators.....	27	642	56.0	.676
Truck drivers.....	24	263	57.1	.635
Mechanics:				
Carpenters.....	29	427	56.4	.853
Machinists.....	24	173	54.9	.842
Other mechanics.....	30	930	55.3	.729
Mechanics' helpers.....	18	236	53.5	.710
Other employees.....	29	467	57.7	.692
Total.....	40	19,643	.....	.....

REFINERIES.

REFINING.				
Clay roasters.....	26	145	55.6	\$0.676
Coal passers and ashmen.....	11	661	54.7	.620
Engineers and chillermen.....	45	432	55.3	.811
Filters.....	18	84	56.1	.701
Firemen and assistant engineers.....	80	3,532	53.6	.756
Gaugers.....	52	234	55.2	.691
Molders.....	14	150	52.8	.727
Molders (female).....	2	8	52.5	.606
Oilers.....	9	54	52.9	.752
Pressmen.....	31	384	53.4	.792
Press runners.....	4	19	56.0	.692
Pumpmen.....	70	1,087	53.6	.789
Pumpmen's helpers.....	29	447	54.0	.746
Repairmen.....	11	36	48.9	.771
Reform, acid, and kettle men.....	14	85	54.9	.798
Still inspectors.....	6	25	55.8	.972
Stillmen.....	80	1,205	54.2	.905
Stillmen's assistants, chargers, and headers-up.....	59	1,344	53.6	.799
Sweatmen.....	26	123	53.5	.806
Testers.....	28	139	52.9	.615
Testers (female).....	1	5	49.0	.500
Testers' assistants.....	9	35	53.0	.574
Treaters.....	73	235	55.3	.831
Treaters' helpers.....	36	191	54.3	.757
Water purifiers.....	6	24	54.3	.695
Water tenders.....	28	293	52.7	.872
FILLING, PACKING, AND SHIPPING.				
Branders and painters.....	15	96	48.4	.675
Branders and painters (female).....	1	1	49.0	.528
Fillers.....	33	238	49.2	.655
Fillers (female).....	1	52	44.0	.383
Inspectors.....	24	63	49.9	.778
Nailers.....	6	19	50.3	.657
Nailers (female).....	1	3	44.0	.502
Packers.....	13	109	48.6	.662
Packers (female).....	4	175	47.4	.398
Tank-car loaders.....	69	261	52.2	.625
Testers.....	2	13	48.7	.613
Weighers.....	13	58	50.0	.703
TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.				
Brakemen.....	6	48	47.9	.886
Chauffeurs.....	51	275	50.8	.681
Conductors.....	5	27	60.2	1.033
Engineers, railroad.....	14	63	54.0	.996
Firemen.....	8	36	60.2	.828
Teamsters and drivers.....	26	280	51.0	.630
Trackmen.....	5	72	52.0	.590

TABLE 2.—AVERAGE FULL-TIME HOURS PER WEEK, AND AVERAGE EARNINGS PER HOUR IN THE PETROLEUM INDUSTRY IN THE UNITED STATES, BY OCCUPATIONS, 1920—Concluded.

REFINERIES—Concluded.

Occupation.	Establishments.	Employees.	Average full-time hours per week.	Average earnings per hour.
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.				
Blacksmiths.....	47	179	47.9	\$0.867
Boiler makers.....	60	1,153	48.1	.931
Boiler-makers' helpers.....	48	2,536	47.6	.741
Bricklayers and masons.....	52	598	48.0	1.115
Carpenters.....	65	995	47.8	.894
Coopers.....	23	239	49.0	.788
Crane operators.....	18	87	53.6	.869
Crane riggers.....	11	204	48.4	.758
Driving-machine operators.....	3	9	49.0	.649
Electricians.....	42	251	48.7	.919
Helpers ¹	52	2,272	48.2	.662
Laborers.....	78	11,139	49.7	.575
Laborers (female).....	2	29	44.8	.499
Lead burners.....	23	50	49.0	1.045
Machinists.....	56	813	48.5	.905
Painters.....	47	408	48.0	.710
Pipe fitters.....	68	1,025	49.4	.855
Pipe fitters' helpers.....	55	3,220	48.8	.685
Property keepers.....	20	87	50.6	.698
Property keepers (female).....	1	1	49.0	.520
Tinsmiths.....	13	55	47.2	.874
Welders.....	36	147	47.3	.895
Other mechanics.....	57	728	49.6	.770
GUARDING, ETC.				
Watchmen.....	65	781	57.5	.638
Other employees.....	67	2,939	52.0	.701
Total.....	80	42,811		

¹ Not including boiler makers' and pipe fitters' helpers.

A brief description of the operations in each of the three subdivisions of the petroleum industry covered by this survey is herewith given, and this is followed by a description of the principal occupations found in the respective subdivisions.

In addition to first-hand information obtained by special agents of the bureau which has been used in the preparation of material descriptive of the operations several standard works have been consulted.

DRILLING AND OPERATION OF OIL WELLS.

The two types of drills commonly used in the drilling of oil wells are the cable tool and the rotary drill. The nature of the strata in the field in which the drilling is to be done is the determining factor in the selection of the drill.

The cable tool, or percussion drill, is generally used in the fields where considerable stone or rock formation is expected to be encountered. This drill consists of a heavy steel stem some 30 feet in length and of varying diameter, according to the size of the hole to be drilled, the stem having a tool known as a "bit" attached to the lower end. To the upper end is fastened a wire cable suspended from the top of a derrick and leading to a hoisting drum, around which the cable is wound. The derrick usually has a 20-foot base, tapering in pyramidal shape to a 4-foot top at a height of 80 feet, and may be of wood or steel construction, its strength being conditioned upon the earth

formation. A soft formation where caving-in is likely to occur calls for a large hole because it is necessary to insert columns of casing as the depth of the well increases. In the case of very deep wells the diameter is usually large even though caving-in may not be expected.

The drum is set in motion by a lever connected with the engine. The lever is controlled by the driller who raises and releases the tool stem, the weight of which forces the tool through the bed of earth and rock. When the drill strikes gravel, a casing is put in and drilling is continued through the gravel to limestone and through the limestone. After the limestone formation is drilled through, a casing about $1\frac{1}{2}$ inches less in diameter is put in and continued down with the drilling until oil is found or the well is abandoned as a nonproducer. The formation drilled through may vary, but at a depth at which it is thought there may be oil smaller casing and drills are used than at the beginning.

At intervals during the process a bailer or clean-out tool is lowered into the hole to bring up the dirt and rock that have been loosened. The bailer consists of a long tube having on the lower end a detachable valve and, like the tool stem, connected by a wire cable leading to another hoisting drum. When the drilling is completed and the well "shot" (see p. 9) the bailing is continued until all the loose dirt and rock have been removed, and the well is then turned over to the production department for pumping.

The rotary drill has come into common use in oil fields where there is little or no stone or rock, because of the speed with which the drilling can be done in soft or caving formations. However, when obstructions in the nature of stone or rock are found in the path of the drill, there is a specially designed tool, known as a "cone" bit attached to the drill stem.

The rotary drill consists of a rapidly rotating pipe or stem on the lower end of which is attached a fish-tail or a diamond-point bit. To the upper end of the stem is attached a wire cable which suspended from the top of the derrick, leads to a hoisting drum.

The pipe or stem is rotated at the rate of some 200 revolutions per minute by a horizontal revolving disk through which the stem passes. The rotary disk is driven by chain and sprockets from the line shaft operated by the engine.

Water and thin mud are pumped through the drill stem down into the hole and this forces the material cut away by the bit to rise to the surface. The mud also serves to cement the walls and prevents caving-in of the sides of the hole before the casing can be inserted. The casing is inserted in strings, the number and size depending upon the depth of the well. They are put in at different intervals of depth, seldom exceeding three strings, and ranging in size from 10 inches to 6 inches in wells to a depth of 3,500 feet.

After the drilling is completed and the well "shot" the hole is "swabbed in." The swab is much like the bailer used in cable-tool drilling, except that between the stem and the valve is a larger rubber tube which when compressed and released creates a vacuum. This draws the sand, etc., into the tube, which is repeatedly lowered into and withdrawn from the hole until the well is "brought in" and ready to be "put on the beam," or turned over to the production department for pumping.

DESCRIPTION OF OIL-WELL OCCUPATIONS.

Derrick men.—Employed only where rotary drilling is done. From a position up in the derrick he attaches a cable to pipes or casings and holds the upper end of the casing while it is being lowered into position and while those below make the connection.

Drillers.—In general, the driller directs the work and controls the levers operating the drilling machinery. His first duty is, with the help of a tool dresser who works with a driller, to locate and set up the boiler, engine, and drill rig at the point where a well is to be drilled. Laborers may aid in this work. After the rig is set up and the engine in operation, the driller places the drill at the point determined for commencement of drilling, adjusts the "temper screw," a device to show the depth of the drill in the formation being drilled, so as to give the proper "bite" or pressure to the drill, and continues drilling until gravel is struck. The driller keeps a close watch of the temper screw, adjusting it frequently, as conditions require, and observing the cutting and the depth being obtained in order to determine the necessity for a change of drill; that is, a newly-sharpened drill. When oil is struck a charge of nitroglycerine is put into the bottom of the well and discharged to loosen up the formation at the depth where the oil is found. This is called "shooting the well," and the charge may be put in the well by the driller or a man hired especially to "shoot the well," such employee being called a "well shooter." After a well is "shot" the driller has charge of cleaning it out to get it in condition to be thoroughly cased for piping and pumping. The tool dresser helps the driller in this work.

Drillers' helpers and clean-out helpers—Assist in making pipe and casing joints, attach and remove bits, etc.

Firemen.—Fire the boilers for running the engines used in pumping the wells. This work is usually done by the tool dresser and sometimes by an engineer, if one is employed.

Gaugers.—Measure and report the quantity of oil in the tanks and turn it into the pipe line.

Laborers, roustabouts, and connection men.—Help the pumpers repair boilers and engines and set pumps or jacks and put in rod lines. They also dig ditches and act as general handymen on construction and repair work and sometimes do casing work.

Pumpers and engineers.—A pumper has charge of, keeps in order, and looks after the boilers, engines, pumps, or "jacks," etc. He inspects the pumps at intervals, oils the machinery, and watches the tanks that they do not run over. An engineer is sometimes engaged to run the engine and act as fireman for drilling when there is more work at tool sharpening and assisting the driller than the tool dresser can do and act as engineer and fireman too. The engineer may also be employed at other power work.

Rig builders.—Erect the rigs, or derricks, used in drilling oil wells.

Teamsters.—Load and unload material and transport it from one location to another by use of horse and wagon or other conveyance.

Tool dressers.—A tool dresser assists a driller. His duties are to act as fireman and run the engine used for power in drilling, sharpen drills, help bail water from the well and do any other work required by the driller. He helps to clean out the well after it has been "shot" and puts it in condition for casing and piping to be pumped. On

account of being employed in helping to clean out wells, a tool dresser is also called a "clean-out man's helper."

Truck drivers.—Load and unload materials and operate the motor trucks used in the work.

MECHANICS.

Carpenters.—Also called power builders. Erect dwelling houses, sheds for pumping engines, and for housing equipment.

Machinists.—Also called mechanics. Have charge of all machinery installment and mechanical repair work in the oil fields.

Other mechanics.—These include a large number engaged in repairing steam engines, pumps, gasoline engines, and various other machinery and implements. At many establishments they are carried on the rolls as "repairers."

Mechanics' helpers.—Men who have had some experience in various mechanical occupations and assist the journeymen mechanics in their respective trades are called "Mechanics' or repairers' helpers."

OTHER EMPLOYEES.

Casers.—Also called casing-gang men. Insert strings of casing in the wells under the direction of the driller. They also pull tubes or pipes and rods from the wells, using a hydraulic jack called a pulling machine. The casing work may be done by one gang and the tube and rodwork by another, in which case those doing the latter are called "Pulling-machine men."

Clean-out men.—Same kind of work as that done by regular drillers except that while cleaning out an old well the drillers are known as clean-out men and the tool dressers as clean-out helpers, and both are paid at a lower rate for this kind of work.

Line walkers.—Walk the gathering pipe lines in the oil fields to look for leaks or breaks in the pipes.

Oilers.—Oil the engines, pumps, rods, and other machinery at the wells.

Tractor drivers.—Operate motor tractors used in drawing heavy loads of material.

Truck drivers' helpers.—Assist the truck drivers in loading and unloading trucks.

Warehouse men.—Have charge of material stored in stock that is required for use throughout an oil field. They make distribution of the stock as called for and keep a record of the stock on hand and the stock distributed.

Watchmen.—Guard the property in the oil fields against theft, fire, etc.

PIPE-LINE TRANSPORTATION OF CRUDE PETROLEUM.

To most people the tank car is not an unfamiliar sight, and those living on the seacoast may see the tank steamer. Formerly these two instruments constituted the principal means by which crude and refined petroleum was transported from one section of the country to another. While both are still in use, the tank car, so far as the transportation of crude petroleum is concerned, has to a great extent been supplanted by the modern pipe-line system though it is still the principal means of transporting the refined product, excepting in the

coastwise, the import, and the export trade, where the tank steamer is the more important carrier.

This report, however, in so far as it relates to the transportation of crude petroleum, is concerned solely with the vast network of pipe lines which gather and transport the oil from the wells to the refineries, some of which are located many hundred miles away.

The nearest thing with which these underground systems of transportation are comparable is the water works system of a city; the former being the reverse of the latter in operation, in that its system of arteries gathers up the oil from the various wells and sends it to the trunk lines, thence to the refineries, while the water works system sends the water first through the main conduit, later distributing it to the homes of the people.

To emphasize the size of the modern system of oil transportation, it may be explained that the oil is pumped from the fields of Texas, Oklahoma, and Kansas to refineries along the Atlantic seaboard of the United States and to other refineries located in the Dominion of Canada.

To illustrate these intricate systems of lines, it may be said that one concern has more than 6,000 miles of gathering and trunk lines and nearly 100 main and field pumping stations; while another reports a system of such magnitude that it drains the crude oil from some 10,000 wells and delivers it to almost any refining center in the United States, save the Pacific coast where there are other systems no less modern than those in the East, the Middle West and Southwest.

These lines are known as "gathering" lines and "trunk" lines, the pipes of the former being of 6 inches diameter or less, while the trunk lines are of 6, 8, 12, and sometimes 16 inches. These very large pipes, however, are confined to short distances because they necessitate more than an ordinary number of pumping stations, which as a rule are found about every 50 miles along the trunk lines, depending upon the hindrance or the assistance offered by gravity.

It is of interest to note that before the advent of the tank car, the tank steamer, and the pipe line it was not an uncommon sight in what was then the principal oil-producing region to see a string of half a hundred wagons hauling the oil from the wells to refineries hundreds of miles distant. This furnished many men and teams with employment and these men naturally became jealous of any system that meant the loss of their jobs, the result being that repeated attempts upon the part of pioneers to transport oil by pipe lines were futile, the lines being destroyed time after time, and it was only by the constant guarding of the property that the system was finally placed upon a safe basis. Nowadays millions of individuals walk and ride daily across these various lines laid underground, unconscious of the fact that beneath their feet is flowing the crude product on its way to the refinery, later to be used in running and oiling their motor cars and in lighting their homes.

This system is now so generally recognized by the public as an economic plan of first import that it is only in the rarest instances that one hears of a pipe line being tampered with. Even during the World War there was comparatively little trouble of this nature, notwithstanding the fact that petroleum was undoubtedly one of the most important factors in the winning of the war.

DESCRIPTION OF PIPE-LINE OCCUPATIONS.

Engineers and pumpers.—Engineers are responsible for the operation and care of the engines and pumps at the pumping stations. At the smaller stations they do the firing also. The engines pump the oil from one pumping station to another, the distance varying from a few miles to almost 100, depending upon the topography of the country.

Firemen.—Are found only in the larger stations where the engineers do not have time to do the firing. They fire the boilers, watch the water gauge, and oil the engine and pumps. Called engineers' assistants where gas is used as fuel.

Gaugers (field gaugers and hourly gaugers).—Field gaugers measure the oil in the tanks in the producing fields. They first run off the water which settles in the bottom of the oil tanks, then measure the oil and let it run into the gathering lines. Hourly gaugers measure the oil each hour in the big storage tanks at the pumping station to see how much is being received.

Laborers, roustabouts, etc.—Common laborers performing unskilled work in the construction and repair of the pipe lines. Such labor consists in clearing the right of way, pick and shovel work on the ditch, loading and unloading trucks and wagons, lifting pipe into the ditch and filling in the ditch after the pipe line is laid.

Linemen.—Erect and repair the telegraph and telephone lines connected with the pipe line. This consists mainly in supervising the erection of the poles, stringing the wires and testing out the lines.

Line walkers or patrolmen.—Walk lines of pipe looking for any leaks, danger from flood, fire, or anything that may appear wrong with the pipe lines, for wires down, etc., reporting the trouble to the nearest station. They have a certain distance to cover each day, which varies in different sections.

Oilers.—Oil the engines and pumps and watch the water gauges. Found only in the larger stations where the time of the engineer is occupied by more important duties.

Teamsters.—Have the care and driving of the teams for hauling and grading purposes, mostly on pipe-line construction.

Telegraph operators.—Operate the telegraph lines in connection with pipe lines, and at small stations do the gauging. They are located at pumping stations along the line.

Truck drivers.—Operate motor trucks, mostly on construction work but sometimes employed regularly at supply depots. They make minor emergency truck repairs also.

Carpenters.—Employed chiefly in the construction of houses for employees, offices, warerooms, scaffolding, and wooden tanks. They do all the woodwork on the buildings and tanks.

Machinists.—Set up and repair the engines and pumps and operate thread-cutting machines for large size pipes.

Mechanics' helpers.—These are men who have had some experience in the various mechanical occupations; they assist their respective mechanics.

OTHER MECHANICS.

Blacksmiths.—Engaged chiefly on repairs, sharpening picks, crow-bars, etc., and doing any welding that may be necessary in construction or maintenance. Found either with the construction gang or at the supply depot.

Boiler makers.—Construct all metal tanks and smokestacks where heavy iron is used and do acetylene welding.

Bricklayers.—Lay brick on buildings, construct brick fire boxes for engines, set boilers, and construct brick culverts along the line.

Cement finishers.—Direct the laying of the grout and put on the finishing coat to cement work at stations and at dwelling houses.

Cement workers.—Mix the concrete and grout and assist the cement finishers.

Connection men.—Assist in the laying of the pipe line by making the connections of the several lengths of pipe, under the direction of the stabber.

Electricians.—Install and keep in repair the electrical appliances and fixtures in the stations and dwellings.

Painters.—Paint the tanks, dwelling houses, pumping stations, etc.

Pipe-machine operators.—Operate pipe machines used in laying and joining pipes.

Pipe machinists.—Thread pipe by machinery and sometimes construct short pieces used in making connections.

Plasterers.—Plaster houses and stations.

Plumbers.—Install toilet and water supply fixtures necessary at pumping stations and dwelling houses.

Stabbers.—Stand at the far end of the length of pipe which is being joined to the line already constructed and sight it so that it will enter the coupling straight and make a perfect fitting connection without the thread being crossed and stripped. Work similar to that of foreman of pipe-laying gang.

Tank repairers.—May be either carpenters repairing wooden tanks, or boiler makers repairing steel tanks.

Tank riveters.—Rivet the tank plates after they are fitted up by the boiler makers.

Welders.—Weld pipe lines together by the acetylene process where thread connections are not used. Also employed in the construction and repair of steel tanks.

OTHER EMPLOYEES.

Calkers.—When a leak is discovered in the seams of a tank, the calker, with the use of a hammer and a specially constructed chisel or iron, tightens the seams by wedging in oakum or cotton packing.

Chauffeurs.—Operate passenger motor cars. This term is sometimes used to denote drivers of small motor trucks, but the latter should be classed as truck drivers.

Construction men.—A term applied to a gang employed on new work or to a large repair gang. They lay and repair the pipe lines.

Ditching-machine operators.—Operate machines used in excavating ditches in which the pipe line is to be laid. Also operate machines which fill the ditch and pack the dirt on top of the pipe.

Field scouts.—Secure the right of way, make provision for supplies and forage for the men and animals of the construction gang, and engage teams for work when necessary.

Strappers.—Measure the height, and the top and bottom diameters of the inside, and any inside projection of tanks after they are constructed or reconstructed so that depth gauges may be made.

Tank-car loaders.—Are rather unusual along a pipe line; they make the connections for loading tanks cars with crude petroleum when shipped by tank car instead of by pipe line.

Telephone operators.—Some pipe line companies have a telephone instead of a telegraph system, and the operators operate the phones at the pumping stations and at small stations do the gauging.

THE REFINING OF PETROLEUM.

The crude oil having been pumped from the wells and then transported by pipe line, in tank cars, or in tank steamers to the refinery, it remains now to be seen how its various component parts are broken up and separated successively one from another to meet the public needs. This is made possible from the fact that the boiling points of the different "fractions" constituting the crude oil are reached at different temperatures. For instance, the naphtha or gasoline in the petroleum begins to boil at a lower temperature than does any other constituent part. It is therefore the first element to vaporize, and at a given temperature the vapor as it passes overhead to the condenser will be composed largely of this fraction, though it will contain also more or less of the heavier oils. The separation of the fractions is aided by the condensing process, since the vapors containing the fractions of higher boiling points are the first to condense.

If the temperature in the still is increased, the kerosene begins to boil, and this is followed in turn, as the temperature is further increased, by the gas and fuel oils and then the lubricating oil, the latter sometimes being referred to as the paraffin distillate, which is the last of the four major fractions resulting from the first distillation.

The boiling process usually takes place in an immense horizontal cylindrical "still" mounted over a furnace, the fuel being coal or oil. The latter is very generally used in California because of the scarcity and cost of coal.

These stills are of varying capacities, some being as large as 16 feet in diameter and 32 feet in length, or 14 feet in diameter and 42 feet in length, capable of distilling 1,000 to 1,200 barrels at one time; while others are very small in comparison, having a capacity as low as 200 barrels. They are arranged in rows or batteries, a battery frequently consisting of a dozen stills.

The condensing equipment referred to above consists of a coil or system of parallel iron pipes, usually submerged in a large tank of cold water. As the vaporized oil from the still is conveyed through the pipes of the condenser and comes in contact with the cooling surface it is condensed into a liquid form and is run to the receiving house, the four major fractions being diverted into separate tanks as each is distilled in turn by increased heat. The condensers vary in size with the stills, some of the boxes measuring as much as 20 feet in width, 48 feet in length, and 12 feet in height.

The time required to produce the four major fractions varies from 48 to 72 hours.

In the distillation of crude oil a considerable quantity of gas accumulates, especially in connection with pressure and coking still operations where cracking occurs. The amount of gas depends to some extent upon the temperature of the still, of the condenser, of the weather, and also upon the crude oil used. This gas is not allowed to go to waste. In some plants it is used directly for fuel purposes only, but in others through an absorption process, a certain amount of gasoline is recovered from the gas, and this is then treated chemically in order to remove the sulphur.

In addition to the cylindrical still there is the "cheesebox" still which, however, is little used nowadays. The "steam still" also in use, obtains its name from the fact that the distillation is effected by steam instead of by fire. The "tower still" is so called because of the condensing and separating tower which rises somewhat higher than the still itself. The "continuous still" is one in which the distillation is a continuous process, making it possible to obtain at the same time different fractions from the several stills in the battery. This is done by connecting all the stills of a battery, the temperature being increased at each successive still. The crude oil is charged into the initial still which takes off the naphtha and flowing from that to the others, each distilling its fraction; the residuum is pumped from the last still. The "vacuum still," which is smaller than the average crude still, is so called because a partial vacuum is created in it by the use of a pump, and this causes some of the fractions to vaporize at temperatures lower than would be the case under atmospheric pressure. "Pressure stills" are those in which the distillation is carried on by subjecting the oil to heat and pressure to increase the per cent of gasoline from the crude.

To return to the four major fractions resulting from the distillation of the crude oil, it is found that the naphtha is not of sufficient purity to make it marketable, so it is pumped into a huge tank-like container called an "agitator," in which it is agitated with air or circulated through a centrifugal pump, treated with sulphuric acid and caustic soda, then washed with water, causing the "sludge" or sediment to settle at the bottom so that it may be drawn off. This sludge contains some oil and tar, the former being recovered, the latter being used as fuel. The chemical treatment of the naphtha not only removes the sulphur and impurities but also improves the odor and color of the product. This process sometimes takes place in a continuous heating plant, so called because the oil and acid are fed continuously through a mixing device. The time required for treating the oil in an agitator of 5,000 barrels' capacity is about 30 hours.

Following the chemical treatment the naphtha is subjected to a second distillation in a steam still. Steam is used not only because naphtha boils at such a low temperature that the use of fire is not required but also because the product from the second distillation is believed to be of a better quality if steam is used.

The kerosene, which was found to be the second fraction obtained from the distillation of the crude oil, is also given a chemical treatment, after which it is redistilled in a combination fire and steam still,

the fire causing the necessary heat and the steam preventing "cracking," that is, the disintegration of the oil. Even after this process it is sometimes again rerun in a steam still or filtered through clay to further improve its quality.

The gas and fuel-oil stock, the third fraction to come over in the distillation of the crude oil, is not usually given further treatment. Gas oil is used principally in the manufacture of city gas, for internal-combustion engines, and as metallurgical fuel.

The lubricating-oil distillate or paraffin distillate, the fourth fraction resulting from the distillation, contains the stock from which both lubricating oils and paraffin wax are obtained. It is pumped from the receiving house to the tanks of the paraffin department, then through the chillers to the presses. The chilling process, which is performed in a large refrigerating plant, crystallizes the wax in the oil, forming a kind of slush which is then by means of presses filtered through canvas blankets, the oil passing through and dripping into a tank while the "slack wax" adheres to the blankets.

The pressed oil, now wax free, is pumped from the tank to the "reducing stills" where it is reduced to the required viscosity for lubricating oils. This is accomplished by distilling off some of the lighter fractions. The lubricating oil remaining is then pumped to the agitators and there treated with sulphuric acid and caustic soda in order to improve the color and odor and to remove heavy carbon.

The "sludge," which is a term used to cover dirt and other impurities, settles in the bottom of the agitator and is then pumped to the acid plant, where it is charged into a kettle of water and blown with steam. This treatment, or cooking, separates the oil, acid, and impurities, the last being known as acid coke. The oil and acid are pumped off and the coke is dumped into a conveyer for transfer to fuel cars.

The "slack wax" as it is scraped from the blankets falls into a worm conveyer, which carries it to the melting tank. After melting it is pumped to a settling tank and from there to the paraffin agitators, where it is cleansed with a treatment of sulphuric acid and caustic soda to improve the color. In order to remove the remaining oil, the melted wax is pumped into "sweating pans" and allowed to cool and solidify. The pans are then gradually warmed up, which causes the oil in the crystals of wax to sweat out and flow to the receiving pans, and this oil is then resweated to remove any wax remaining therein.

The wax obtained by the "sweating process" is known as "trade scale wax" which may be resweated to refined wax, the latter being filtered through clay or animal charcoal to make the product colorless. The filtered refined wax is then run through press molds and made into cakes.

The above description applies when paraffin-base crude oil is used, and this oil predominates to a greater extent in the Appalachian field than elsewhere in the United States. In addition to this, there is a greater demand in the East for lubricants, the result being that most of the refineries having a paraffin department are located in the East. The Appalachian field includes New York, Pennsylvania, West Virginia, southeastern Ohio, Kentucky, and Tennessee.

In the refining of other crude petroleums, however, the method is very much the same, excepting that a less number of finished products are obtained, the residue depending upon the oil that is used.

Much of the crude oil produced in Mexico and also in California is of the asphalt base, which yields gasoline, kerosene, fuel oil, and asphalt.

In the field about Lima, Ohio, and extending into eastern Indiana, which is known as the Lima-Indiana field, and also in the northern Illinois field, the oil contains much sulphur. There is little asphalt in the Lima-Indiana field, but considerable in northern Illinois. The Gulf field, embracing southern Louisiana and southern Texas, produces an oil strong of both asphalt and sulphur. The crude oil produced in the mid-continent and Wyoming fields is of a mixed asphalt and paraffin base. The mid-continent field includes Kansas, Oklahoma, northern Louisiana and northern Texas, and Arkansas. In some sections of this field sulphur also is found, but in the northern parts of Louisiana and Texas the crude is practically free from sulphur.

Partly because of the kind of crude oil produced in the Middle West and partly because of the limited market in that section for lubricating oils, there is not so large a proportion of "complete refineries" there as in the East. The great majority of those in the Middle West and Southwest are known as "skimming" plants, which may produce some but not all of the finished products. In California there are quite a few "topping" plants which subject the crude to one distillation, the lighter product being known as "tops," the residuum being sold for fuel oil.

The per cent that each of the four major fractions constitutes of the crude oil depends of course upon the kind of crude oil used. It has been found, however, that mid-continental paraffin base yields are approximately as follows: Twenty-three per cent gasoline, 27 per cent refined kerosene oil, 28.41 per cent gas oil, 11 per cent paraffin lubricating oils, 1.63 per cent crude scale wax, 0.38 per cent wax tailings, 3.28 per cent petroleum coke, with a loss of 5.3 per cent during distillation. Mid-continent crude is cited as an example, because the Appalachian crude, especially the Pennsylvania grade, is conserved principally for cylinder stock and high-grade lubricating oils.

DESCRIPTION OF OCCUPATIONS AT REFINERIES.

REFINING.

Clay roasters.—Reclaim the clay after it is used in the filters. The oil is blown out, the clay is washed, steamed, and placed into a revolving roaster which, when heat is applied, dries the clay; after which it is removed for use again.

Coal passers and ashmen.—Deliver coal from coal pile to boilers and remove ashes from the ash beds.

Engineers and chillermen.—Engineers operate the various pumps used for pumping the oil and also operate the refrigerating plant which is used to chill the oil before it is fed to the wax presses. Chillermen operate the necessary machinery to force the oil through the chillers. One man may be both engineer and chillerman.

Filterers.—Oil is filtered through large vats of clay to remove acid and asphalt and to improve the color. Filterers watch the oil as it comes from these vats to see if it meets the required tests.

Firemen and assistant engineers.—Firemen at the stills feed fuel by hand to the furnace beneath the still and remove ashes. Fuel

may consist of coal, coke and screenings, acid tar, or fuel oil. They regulate the drafts and watch the temperature of the still to see that the still bottoms are not overheated and burned. Boiler firemen feed fuel, consisting of coal, fuel oil, or gas, to furnace under the boiler, remove ashes, and watch the steam pressure and water gauge. The assistant engineer assists the engineer and at some plants acts as fireman.

Gaugers.—Are responsible for the measuring by their assistants of the contents of tanks. The gaugeman at pressure stills manipulates the gauges in the receiving house.

Molders.—Operate presses for molding wax into differently shaped blocks for commercial use.

Oilers.—Oil the engines, pumps, and other machinery.

Pressmen.—Manipulate the filter presses, breaking them down with the use of heavy knives to separate the steel plates from the canvas blankets to release the wax. Also called press dumpers.

Press runners.—Found under this name only at plants where the work is highly specialized. Open and close the presses and keep them in working condition.

Pumpmen.—Take care of the transferring of oil by means of pumps from receiving tanks to stills or from tanks to agitators and start and stop all pumps. Must understand the different line systems, know what each tank contains, see that the proper grade of oil is being pumped to the department ordering it. They draw the oil from storage tanks to pump house by suction pumps for shipment, then pump to tank cars or tank steamers.

Pumpmen's helpers.—At direction of pumpmen they open valves on the proper line for the transfer of oil and walk the lines to see if there are any leaks.

Repairmen.—Adjust and make minor repairs to pumps.

Retort, acid, and kettle men.—The kettlemen and acid men attend to the separating of the acid from the sludge. The sludge is pumped into a cooking kettle, water is added and then live steam turned into the kettle. This cooking process brings the tar to the top and causes the acid to settle at the bottom. The acid is pumped to a concentrator and reduced. The retort men take the weak acid and put it through a retort which, by fire and heat, reduces it to its original strength.

Still inspectors.—After coke stills are cleaned, an inspector goes into the still to see if it is ready to be refilled. He taps the bottom of the still with a hammer to ascertain if any part of the bottom has been overheated and burned.

Stillmen.—Control the operation of the stills. Watch each stream as it flows from the still and take the temperature and gravity each hour. As correct gravity is reached they change the stream by opening a valve to the proper tank. They instruct the firemen as to the heat required to keep the stream steady.

Stillmen's assistants, chargers, and headers-up.—Stillmen's assistants watch the stills and condensers to see that no leakage occurs and watch the quantity of oil in the stills. They may also act as chargers whose duty it is to see that the proper quantity of oil is pumped into the still before it is fired, and inspect plugs for leaks. Headers-up put heads on manholes before the still is placed in service.

Sweater men.—See to the keeping of proper temperatures in the sweater while oil is being sweated from wax.

Testers.—Make pour tests and gravity tests of paraffin distillate and pressed oil.

Testers' assistants.—Help the testers in making pour and gravity tests.

Treaters.—Treat oils with chemicals to improve the color and remove impurities. When agitation of the oil is complete it is drawn off into storage tanks.

Treaters' helpers.—Assist the treater in his work. Their duties are practically the same, but the helper is less experienced.

Water purifiers.—Operate the water purifier, note condition of water, and have purifier cleaned when necessary. Sometimes done by water tenders.

Water tenders.—See that proper quantity of water is left in boilers and open the necessary pumps. Sometimes act as water purifiers.

FILLING, PACKING, AND SHIPPING.

Branders and painters.—Branders with the use of stencil, pot, and brush mark the names and weight of contents on the barrels, cases, packages, and other containers of manufactured products. Painters paint by hand or machine the barrels after they have been made or repaired.

Fillers.—Operate the filling machines or fill by hand, barrels, drums, cans, bottles, and other containers of the various products.

Inspectors.—Inspect the packages, crates, etc., before final shipment.

Nailers.—Nail tops on cases before shipment.

Packers.—Place the smaller packages or containers of various kinds into cases or boxes for shipment.

Tank Car Loaders.—Those known as groundmen adjust valves on tank cars before they are loaded, watch for leaks, and place shipping tags on cars. Those known as topmen work on the loading racks; attach line on the swing; see that valves are open, and that car is properly filled; cut off flow of oil; order pumpmen to shut off the pumps; take samples of what goes into the car; and see that the car is properly closed and sealed.

Testers.—Make minor tests to see that shipments are uniform in grade.

Weighers.—Operate special scales for determining the number of gallons of various products contained in the different packages, barrels, drums, cans, etc.

TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.

Brakemen.—Apply brakes, throw switches, couple and uncouple cars, and signal the engineer for car movements.

Chauffeurs.—Operate passenger automobiles and sometimes small motor trucks, and tractors in use in the yards.

Conductors.—Conductors have charge of and are responsible for the trains into and out of the yards and about the yards.

Engineers.—Operate the locomotives on the yard railroad.

Firemen.—Fire the locomotive engines.

Teamsters and drivers.—Teamsters and drivers do the hauling by team or motor trucks in the yards.

Trackmen.—Are engaged in the construction, maintenance, and repair of tracks and sidings in the yards.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.

Blacksmiths.—Do the anvil welding and repairing of iron and steel requisites, sharpen tools, etc.

Boiler makers.—Construct and repair boilers, tanks, stills, smokestacks, etc., where heavy iron or steel is used.

Boiler makers' helpers.—Not skilled boiler makers but somewhat experienced in the work of boiler making who assist the boiler makers at their work.

Bricklayers and masons.—Do the brick and masonry work in connection with boiler setting, brick walls, foundations, caissons, etc.

Carpenters.—Do all construction and repairing of woodwork in connection with buildings and tanks.

Coopers.—Make and repair barrels and kegs.

Crane operators.—Operate traveling or stationary cranes for hoisting heavy loads, either unloading cars or other similar heavy lifting about the refinery.

Crane riggers.—Erect, maintain, and remove the cranes used in heavy lifting and hoisting. Make fast the proper lines and see that equipment is not overstrained.

Driving-machine operators.—Operate machines equipped with fingers for tightening hoops on barrels.

Electricians.—Install, maintain, and repair the electrical wiring and apparatus about the plant.

Helpers.—Helpers of the foregoing occupations are men not wholly skilled in the operations, but who have some knowledge and who assist the journeymen.

Laborers.—Do the common or unskilled labor about the plant, sweeping up, hand trucking, etc.

Lead burners.—Line with sheet lead the agitators and other containers where it is necessary to use lead to withstand the acid attack. The burning is done with the use of either torch or soldering iron.

Machinists.—Operate lathes and planers, and do the bench machine work on metal parts necessary in the manufacture and repair of machinery and operate pipe-threading machines.

Painters.—Do the necessary painting about the plant to keep the buildings in preservation.

Pipe fitters.—Install, repair, and reconstruct the pipe lines connecting the loading racks, tanks, and stills for both oil and water.

Pipe fitters' helpers.—Have some knowledge of pipe fitting and assist the journeymen in their work.

Property keepers.—Have charge and responsibility of the issuing of tools, stock repairs, parts, etc., as required.

Tinsmiths.—Repair the sheet-metal work consisting of copper, tin, zinc, galvanized iron, etc., excepting the heavier work which is done by the boiler makers.

Welders (electrical and acetylene).—Do the electrical and acetylene welding operations necessary to construct and repair equipment, boilers, engines, and other metal parts about the refinery.

GUARDING, ETC.

Watchmen.—Stationed at the entrances to the plant to prevent intrusion by others than employees and to guard against accident by fire or other cause.

OTHER EMPLOYEES.

Assistant elevator tenders.—Assist in loading and unloading freight elevators.

Assistant solderers.—Assist in sealing tin containers.

Assistant tank-car loaders.—Assist on the racks in loading the tank cars with refined oil or other liquid products.

Boiler cleaners.—Clean the boilers and still tubes of scale.

Car inspectors.—Inspect the cars to see that they are in proper condition and properly loaded and sealed and to make final tests of their contents before shipment.

Clay dumpers.—Unload clay from cars received at the refinery.

Cleaners, barrel heads.—Clean the used barrel heads, and make the barrels ready for stenciling and shipment.

Coal and coke dumpers.—Dump the coal and coke in front of the boilers and stills.

Crude-oil valve men.—Operate the valves in the lines of crude petroleum from the tanks to the stills.

Drum makers.—Make and repair the steel drums, containers of about 50 gallons capacity, for shipment of the products.

Engine-room helpers.—Assist in the engine room, wheeling ashes, sweeping, and other light work.

Firemen's helpers.—Similar to engine-room helpers. Only required where the fireman's attention is continuously needed and required before the fire box and at the water gauge.

Handymen.—Are employed in many different places, relieving where short handed or occupying their time at occupations where there is not enough of one class to keep them occupied the entire day.

Inspectors, steel boiler plates.—Inspect the steel boiler plates for flaws and blemishes and measurement before they are to be placed in either boiler or steel tank.

Mixers, oil compounds (compounders).—Compound the different grades and brands of oil, bringing them to a certain standard of fire test and gravity.

Oil inspectors.—Test or inspect the oil after the compounder has finished with it.

Paint-machine men.—Operate the paint machine used especially for painting barrels and drums.

Painters, barrel heads.—Paint the barrel heads after they are filled and sealed. Painters' helpers assist the painters.

Pipe machinists.—Operate the pipe-threading machines used for threading heavy pipe and also make up some pipe with fittings at the bench.

Riggers' helpers.—Assist the riggers in erecting and removing cranes.

Sawmen.—Operate power saws used in the manufacture of barrels and packing cases.

Storehouse helpers.—Assist the property keepers in the storehouse.

Utility men.—See handymen.

GENERAL TABLES.

All employees not included in any of the selected occupations of one of the three industry subdivisions have been combined and shown as "Other employees" of the respective subdivisions.

In addition to the summary text tables, six general tables are presented as follows:

Table A.—Average starts (days on which employees worked), hours, and earnings, and per cents that average starts are of the total workdays and that average hours actually worked are of the average full-time hours per pay-roll period, by occupations and number of days in pay-roll period, 1920.

In computing the per cent that the average number of starts (days) made constitutes of the total number of days in the pay-roll period, each day or part of a day worked was counted as a start, and if an employee worked a double turn he was credited with two starts (days), which explains why the per cent shown in certain cases is in excess of 100. The treating of these fractional parts of days as starts will explain also why the per cents that average starts are of total workdays varies materially from the per cents that average hours actually worked are of the full-time hours in the pay-roll period.

The average earnings per hour for each length of pay period were obtained by dividing the aggregate earnings of all employees in the period by the aggregate number of hours worked in the same period. In computing the average earnings per hour of all employees in an occupation having pay periods of different length it became necessary to weight the averages for the different length pay-roll periods according to the number of employees covered in the respective periods. This method of bringing the different length pay-roll periods to a common denominator has been applied also in working out the average hourly earnings in each of the several districts as shown in Table D.

To give a clear understanding of Table A, the first line under "wells" will be explained.

The drillers working in the 54 establishments reporting this occupation had different lengths of pay period, running from a 13-day period to a full month pay period. Two establishments paid every 13 days; in these establishments there were 37 drillers employed. The average number of starts made by the drillers within the 13-day period was 12.5; indicating that some drillers fell short of working on each day of the pay period. Collectively the drillers averaged 96.2 per cent of the 13 possible starts in the pay period.

The average full-time hours per week for drillers in these two establishments were 58.4. The average full-time hours in the whole 13-day pay period were 126.5. Out of the 126.5 average full-time hours of the pay period the drillers actually worked an average of 122.2 hours. The next column shows that these drillers worked 96.6 per cent of the full-time hours.

The average actual earnings in this 13-day period were \$151.89. This figure must not be assumed as possible full-time earnings, but the earnings that were actually made within the time stated. The average earnings per hour worked were \$1.243.

Some figures are fairly comparable as between the different lengths of pay period; other figures are not comparable. The average number of starts made naturally will increase according to the increased length of the pay-roll period. This increase, however, can not be expected to be directly proportional to the increased lengths of the pay period, as a greater turnover of labor must be expected in the longer pay period. Other factors, however, such as amount of work available, are also important. The same limitation applies to the per cent that average starts are of total workdays in the pay period.

The average full-time hours per week are strictly comparable whatever the length of the pay period. The average full-time hours of the pay period of course increased with the length of the pay period, as did also average hours actually worked. The latter figure, however, is modified by the labor turnover within the pay period. The average earnings per pay period will naturally increase with the length of the pay period with a minor offset, however, due to labor turnover. The average earnings per hour are strictly comparable as between the different lengths of pay period.

It will be observed that the totals show only number of establishments, number of employees, average full-time hours per week, and average earnings per hour.

Table B.—Cumulative per cent of employees working customary hours per day, by occupations and days per week, 1920.

This table presents for each selected occupation the number of establishments in which the employees worked seven days, six days, and five days per week, with the average hours per day and average full-time hours per week of all employees in each of the groups. The cumulative per cent of the employees working each specified number of hours per day or less is also shown separately for the seven-day, six-day, and five-day weeks. Taking "Drillers" as an example: The table shows that 46 establishments employed 2,380 men who worked or were scheduled to work, seven days per week. Of this 2,380, it will be seen by reference to Table F (pages 122 to 153) that 819, or 34 per cent had an 8-hour day; that 14 worked 9 hours, which added to the 819 made 833, or 35 per cent, who worked 9 hours per day or less; there were 38 who worked 10 hours making 871, or 37 per cent who worked 10 hours per day or less; while the remaining 1,509 worked 12 hours, accounting for the 100 per cent of the entire 2,380 who worked 12 hours per day or less. The same method was followed with the 195 men working six days per week. The number in this group working 10 hours per day did not show a sufficient increase over the number at 9 hours to change the per cent. By deduction it is seen that 79 per cent worked 12 hours per day. This table shows also summary figures for each of the three industry subdivisions. The figures for all employees at the wells (page 4) shows 43 per cent of the seven-day workers having an 8-hour day and 73 per cent working 9 hours per day or less. Fifty per cent of the six-day workers have an 8-hour day. Like figures are shown for all employees on pipe lines and in refineries. While the distribution takes into consideration a possible short day during the week, the average hours per day in the fifth column are based upon the full-time hours per week; in other words, the average is obtained by dividing total hours per week by days per week.

Table C.—Average hours actually worked and average earnings received by employees in each district, by occupations and work days in pay-roll period, 1920.

This table affords a comparison, within each given pay period, of the average hours and earnings in the various districts and in the United States as a whole. Each district is indicated by the names of the States included. As previously stated, there are only five districts for each, the wells and the pipe lines, while there are six for refineries. The districts for wells and pipe lines are not identical in every case.

Table D.—Average and classified earnings per hour, by occupations and districts, 1920.

As indicated in the explanation of Table A, the average earnings per hour in the occupation were first obtained for each pay period by dividing the aggregate earnings in the pay period by the aggregate hours worked in the period and then weighted according to the number of employees in each period in arriving at the average for each district and for the United States as a whole. The table shows the distribution of employees by hourly earnings for each district and for all districts combined. The cumulative per cent of the distribution was computed only for the United States as a whole. The explanation of the cumulative per cent in this table is much the same as that made in connection with Table B. The distribution of the number earning \$1.50 and over per hour has been taken care of in the footnotes.

Table E.—Average and specified full-time hours per week, by occupations, districts, and days per week, 1920.

This table presents separately for the employees working regularly five days, six days, and seven days per week the average full-time weekly hours and the distribution by full-time hours per week for each district and for all districts combined. A cumulative per cent is shown for the total of each occupation. Explanation of the cumulative per cent is given above.

Table F.—Employees classified by customary days per week and hours per day, by occupations and districts, 1920.

This table presents for each district and for all districts combined a distribution of employees working seven days, six days, and five days per week, with each of these groups further subdivided so as to show the number working each specified number of hours per day. For comparative purposes average regular hours per day and per week are also given. While the distribution takes into consideration a possible short-day during the week, the average hours per day are based on the full-time hours per week, as explained in connection with Table B.

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920.

Occupation and number of work-days in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
WELLS.										
Derrick men: 15 days.....	11	891	12.8	85.3	56.6	121.3	103.5	85.3	\$78.21	\$0.752
Drillers:										
13 days.....	2	37	12.5	96.2	58.4	126.5	122.2	96.6	151.89	1.243
15 days.....	34	2,066	12.9	86.0	72.6	155.5	132.4	85.1	150.47	1.137
26 days.....	7	158	20.9	80.4	70.6	305.7	245.9	80.4	237.73	.967
30 days.....	17	309	19.9	66.3	83.6	358.4	237.5	66.3	293.80	1.237
31 days.....	1	5	18.2	58.7	84.0	372.0	218.4	58.7	254.80	1.167
Total.....	54	2,575			73.6					1.140
Drillers' helpers and clean-out helpers:										
13 days.....	7	82	12.2	93.8	54.8	118.7	110.9	93.4	92.62	.835
15 days.....	18	2,303	11.7	78.0	60.0	128.6	100.9	78.5	69.14	.685
26 days.....	9	271	22.5	86.5	53.7	232.6	202.9	87.2	137.33	.677
30 days.....	5	75	25.7	85.7	76.6	328.4	281.2	85.6	138.81	.494
Total.....	32	2,731			59.7					.683
Firemen:										
13 days.....	3	30	10.5	80.8	49.4	107.1	86.5	80.8	57.85	.669
15 days.....	23	1,057	13.1	87.3	57.4	125.0	109.3	87.4	71.77	.656
26 days.....	2	11	24.1	92.7	48.5	210.4	195.1	92.7	132.20	.678
30 days.....	7	30	25.4	84.7	79.8	342.0	288.7	84.4	124.58	.432
Total.....	29	1,128			57.7					.651
Gangers:										
13 days.....	1	1	13.0	100.0	48.0	104.0	104.0	100.0	72.50	.697
15 days.....	17	101	14.2	94.7	63.2	135.4	128.7	95.1	84.32	.655
26 days.....	1	15	26.0	100.0	48.0	208.0	208.0	100.0	148.67	.715
30 days.....	4	6	27.7	92.3	65.3	280.0	259.0	92.5	144.17	.557
Total.....	21	123			61.3					.658
Laborers, roustabouts, and connection men:										
13 days.....	18	1,310	10.4	80.0	53.9	116.7	92.8	79.5	54.67	.589
15 days.....	28	6,616	11.5	76.7	61.1	131.0	100.8	76.9	59.08	.586
26 days.....	17	3,076	14.8	56.9	49.7	215.2	123.8	57.5	76.65	.619
30 days.....	9	911	21.5	71.7	65.4	280.5	201.6	71.9	103.13	.511
Total.....	56	11,913			57.7					.589
Pumpers and engineers:										
13 days.....	6	297	12.7	97.7	50.8	110.1	107.5	97.6	71.07	.661
15 days.....	37	4,880	14.4	96.0	64.1	137.3	131.3	95.6	76.20	.580
26 days.....	10	1,150	24.9	95.8	53.3	231.0	221.8	96.0	141.81	.639
30 days.....	19	875	28.3	94.3	69.7	298.7	282.0	94.4	137.62	.488
Total.....	57	7,202			62.5					.582
Rig builders:										
13 days.....	4	65	12.5	96.2	50.6	109.6	106.3	97.0	127.92	1.203
15 days.....	9	166	10.4	69.3	64.7	138.7	94.6	68.2	84.64	.894
26 days.....	5	296	19.7	75.8	48.2	209.1	157.6	75.4	135.13	.857
30 days.....	2	5	17.8	59.3	68.6	294.0	174.8	59.5	92.00	.526
Total.....	19	432			55.2					.919

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
WELLS—Continued.										
Teamsters:										
13 days.....	3	36	13.4	103.1	54.3	117.7	123.3	104.8	\$73.45	\$0.596
15 days.....	17	390	13.3	88.7	59.4	127.3	113.0	88.8	67.22	.595
26 days.....	8	28	25.8	99.2	60.2	260.9	258.9	99.2	136.90	.529
30 days.....	5	44	26.9	89.7	67.0	287.0	257.3	89.7	127.79	.497
Total.....	30	498			59.8					.583
Tool dressers:										
13 days.....	2	38	12.3	94.6	76.7	126.2	119.7	94.8	137.11	1.146
15 days.....	29	1,346	12.3	82.0	78.3	167.7	135.9	81.0	123.43	.908
26 days.....	7	171	18.6	71.5	71.0	307.6	219.6	71.4	178.69	.814
30 days.....	15	334	18.7	62.3	83.9	359.6	224.6	62.5	241.33	1.075
31 days.....	1	5	17.4	56.1	84.0	372.0	208.8	56.1	226.20	1.083
Total.....	49	1,894			78.6					.934
Truck drivers:										
13 days.....	10	144	12.8	98.5	51.6	111.8	114.4	102.3	76.59	.670
15 days.....	23	468	13.7	91.3	62.7	134.4	125.2	93.2	78.98	.631
26 days.....	7	115	22.5	86.5	53.5	232.0	201.1	86.7	130.10	.647
30 days.....	5	66	27.1	90.3	65.0	278.6	252.3	90.6	136.40	.541
Total.....	38	793			59.6					.633
Mechanics:										
Carpenters—										
13 days.....	18	231	11.0	84.6	49.4	107.1	90.7	84.7	93.10	1.026
15 days.....	21	593	11.5	76.7	61.0	130.8	98.6	75.4	75.64	.767
26 days.....	9	110	18.2	70.0	50.3	217.9	150.9	69.3	116.23	.770
30 days.....	5	53	16.1	53.7	65.8	281.9	145.9	51.8	111.82	.766
Total.....	38	987			57.4					.828
Machinists—										
13 days.....	10	136	12.1	93.1	49.9	108.4	101.1	93.3	99.97	.989
15 days.....	15	111	13.2	88.0	62.1	133.1	119.0	89.4	97.12	.816
26 days.....	3	21	23.1	88.8	54.6	236.8	208.9	88.2	154.48	.739
30 days.....	3	6	30.0	100.0	65.3	280.0	280.0	100.0	156.67	.560
Total.....	25	274			55.6					.890
Other mechanics—										
13 days.....	14	424	12.3	94.6	51.1	110.7	105.3	95.1	92.28	.876
15 days.....	23	573	13.3	88.7	60.6	129.8	116.5	89.8	90.75	.779
26 days.....	9	138	21.5	82.7	51.2	222.0	184.4	83.1	125.24	.679
30 days.....	5	63	24.7	82.3	66.0	282.9	230.2	81.4	133.70	.581
Total.....	36	1,198			56.4					.791
Mechanics' helpers:										
13 days.....	11	201	11.9	91.5	49.5	107.4	99.7	92.8	72.10	.723
15 days.....	16	307	12.3	82.0	59.7	128.0	106.2	83.0	70.12	.660
26 days.....	5	22	21.5	82.7	51.5	223.4	184.5	82.6	116.78	.633
30 days.....	5	14	16.7	55.7	68.0	291.4	162.4	55.7	88.87	.547
Total.....	29	544			55.9					.679

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
WELLS—Concluded.										
Other employees:										
13 days.....	13	226	11.7	90.0	52.4	113.5	104.3	91.9	\$83.15	\$0.798
15 days.....	34	1,261	13.6	90.7	65.1	139.5	124.2	89.0	76.64	.617
26 days.....	12	397	20.7	79.6	52.2	226.2	183.8	81.3	141.31	.769
30 days.....	10	188	27.5	91.7	72.1	308.9	283.1	91.6	164.94	.583
Total.....	48	2,072			61.9					.663
PIPE LINES.										
Engineers and pumpers:										
7 days.....	2	37	6.9	98.6	57.9	57.9	58.3	100.7	\$41.07	\$0.704
13 days.....	3	99	12.9	99.2	48.4	104.8	103.8	99.0	103.58	.998
15 yards.....	33	1,498	14.4	96.0	57.8	117.1	119.5	102.0	87.82	.735
26 days.....	1	31	19.9	76.5	60.0	260.0	198.7	76.4	133.16	.695
30 days.....	4	69	29.0	96.7	56.0	240.0	233.9	97.5	175.58	.751
Total.....	40	1,734			57.2					.749
Firemen:										
7 days.....	1	54	6.9	98.6	56.0	56.0	54.8	97.9	35.49	.647
13 days.....	1	88	12.5	96.2	48.0	104.0	99.8	96.0	92.18	.923
15 days.....	26	843	14.2	94.7	56.4	120.9	114.5	94.7	78.42	.685
26 days.....	1	3	11.7	45.0	60.0	260.0	116.7	44.9	74.90	.642
30 days.....	4	86	26.0	86.7	56.0	240.0	210.0	87.5	139.95	.667
Total.....	32	1,074			55.7					.701
Gaugers—delivery men and oil receivers:										
6 days.....	1	4	6.0	100.0	60.0	60.0	60.0	100.0	47.84	.797
7 days.....	2	15	6.9	98.6	58.3	58.3	57.3	98.3	39.42	.688
13 days.....	6	317	12.6	96.9	55.6	121.8	117.0	96.1	109.63	.937
15 days.....	31	826	14.2	94.7	59.8	128.1	121.8	95.1	86.68	.712
26 days.....	1	119	22.5	86.5	60.0	260.0	224.7	86.4	180.13	.802
30 days.....	3	22	30.0	100.0	56.0	240.0	240.0	100.0	173.86	.724
Total.....	39	1,303			58.9					.775
Laborers, roustabouts, etc.:										
6 days.....	4	540	3.9	65.0	53.6	53.6	35.5	66.2	15.48	.436
12 days.....	1	152	7.6	63.3	48.0	96.0	58.1	60.5	23.22	.400
13 days.....	24	9,165	9.0	69.2	53.9	116.7	82.3	70.5	43.59	.530
14 days.....	1	23	5.6	40.0	56.0	112.0	41.7	37.2	28.70	.688
15 days.....	16	1,013	11.0	73.5	61.9	132.7	96.2	72.5	56.26	.585
26 days.....	4	280	22.0	46.2	60.0	260.0	119.7	46.0	58.70	.490
30 days.....	1	1	22.0	73.3	56.0	240.0	172.5	71.9	98.33	.570
Total.....	40	11,174			54.7					.528
Linemen:										
13 days.....	9	80	10.9	83.8	52.2	113.1	95.4	84.4	67.98	.713
15 days.....	11	141	13.5	90.0	63.6	136.4	124.7	91.4	78.11	.626
26 days.....	4	16	24.3	93.5	60.0	260.0	242.5	93.3	154.63	.638
Total.....	22	237			59.5					.656

¹ Not including starts of 59 employees; number of starts not reported.

² Not including starts of 653 employees; number of starts not reported.

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of work days in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.		
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.	
PIPE LINES—Continued.											
Line walkers:											
7 days.....	2	18	6.8	97.1	59.1	59.1	56.9	96.3	\$33.17	\$0.583	
13 days.....	5	25	12.3	94.6	52.6	113.9	107.5	94.4	74.05	.689	
15 days.....	28	490	13.8	92.0	63.1	135.3	124.5	92.0	72.17	.580	
26 days.....	1	3	22.3	85.8	60.0	260.0	223.3	85.9	130.00	.582	
30 days.....	3	19	27.6	92.0	62.6	268.4	244.7	91.2	134.21	.548	
Total.....	39	555			62.5					.584	
Oilers:											
13 days.....	1	71	13.8	106.2	48.0	104.0	110.6	106.3	102.73	.928	
15 days.....	11	225	13.4	89.3	56.0	120.0	108.0	90.0	69.30	.642	
Total.....	12	296			54.1					.711	
Teamsters:											
6 days.....	1	3	2.0	33.3	60.0	60.0	17.0	28.3	8.05	.474	
13 days.....	7	105	4.9	37.7	59.0	127.9	46.2	36.1	24.74	.535	
15 days.....	6	21	12.3	82.0	65.3	140.0	115.2	82.3	64.44	.559	
26 days.....	1	3	10.7	41.2	60.0	260.0	106.5	41.0	53.25	.500	
Total.....	14	132			60.1					.537	
Telegraph operators:											
7 days.....	1	32	7.0	100.0	56.0	56.0	56.2	100.4	36.75	.654	
13 days.....	1	13	13.1	100.8	48.0	104.0	104.4	100.4	100.40	.962	
15 days.....	21	557	13.8	92.0	56.1	120.2	113.2	94.2	75.98	.671	
26 days.....	1	5	18.2	70.0	60.0	260.0	182.0	70.0	116.78	.642	
30 days.....	4	35	29.1	97.0	56.0	240.0	233.3	97.2	158.03	.677	
Total.....	27	642			56.0					.676	
Truck drivers:											
6 days.....	1	1	1.0	16.7	60.0	60.0	5.0	8.3	2.50	.500	
13 days.....	12	161	12.0	92.3	53.7	116.3	107.5	92.4	70.48	.656	
15 days.....	13	101	12.4	82.7	62.4	133.8	110.6	82.7	66.53	.602	
Total.....	24	263			57.1					.635	
Mechanics:											
Carpenters—											
6 days.....	1	1	2.0	33.3	60.0	60.0	20.0	33.3	16.00	.800	
13 days.....	19	368	10.1	77.7	56.1	121.6	98.0	76.5	78.44	.843	
15 days.....	11	56	9.9	66.0	58.1	124.6	81.5	65.4	75.79	.929	
26 days.....	1	1	26.0	100.0	60.0	260.0	260.0	100.0	164.67	.633	
30 days.....	1	1	9.0	30.0	56.0	240.0	72.0	30.0	49.50	.688	
Total.....	29	427			56.4					.853	
Machinists—											
7 days.....	1	5	6.0	85.7	56.0	56.0	48.0	85.7	39.00	.813	
13 days.....	11	121	12.4	95.4	53.7	116.2	111.0	95.5	93.77	.845	
15 days.....	11	43	13.8	92.0	58.0	124.2	118.7	95.6	100.50	.846	
26 days.....	2	4	28.0	107.7	60.0	260.0	250.0	96.2	190.00	.760	
Total.....	24	173			54.9					.842	

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
PIPE LINES—Concluded.										
Mechanics—Concluded.										
Other mechanics—										
7 days.....	1	1	7.0	100.0	56.0	56.0	56.0	100.0	\$17.84	\$0.854
13 days.....	17	583	10.4	80.0	53.1	115.0	93.8	81.6	73.58	.785
15 days.....	17	202	13.2	88.0	58.4	125.1	110.7	88.5	79.90	.722
26 days.....	1	141	10.4	40.0	60.0	260.0	103.5	39.8	52.49	.507
30 days.....	1	3	30.0	100.0	56.0	240.0	240.0	100.0	185.00	.771
Total.....	30	930			55.3					.729
Mechanics' helpers:										
13 days.....	13	196	11.0	84.6	52.9	114.6	97.0	84.6	68.02	.701
15 days.....	7	40	12.7	84.7	56.7	121.5	105.0	86.4	79.44	.757
Total.....	18	236			53.5					.710
Other employees:										
6 days.....	1	9	6.7	111.7	60.0	60.0	66.7	111.2	34.50	.518
13 days.....	12	170	11.4	87.7	52.3	113.4	100.0	88.2	79.45	.794
15 days.....	21	244	13.5	90.0	61.0	130.8	118.7	90.7	74.97	.632
26 days.....	1	30	12.5	48.1	60.0	260.0	124.7	48.0	87.67	.703
30 days.....	2	14	28.4	94.7	58.0	248.6	235.7	94.8	137.07	.581
Total.....	29	467			57.7					.692
REFINERIES.										
REFINING.										
Clay roasters:										
12 days.....	5	16	12.6	105.0	49.1	98.2	104.2	106.1	\$90.02	\$0.864
13 days.....	4	4	13.3	102.3	48.0	104.0	112.0	107.7	96.63	.863
14 days.....	4	17	13.4	95.7	59.3	118.6	113.2	95.4	72.16	.638
15 days.....	14	60	13.7	91.3	56.5	121.0	111.5	92.1	77.13	.692
16 days.....	2	48	15.5	96.9	56.0	128.0	124.2	97.0	73.34	.591
Total.....	26	145			55.6					.676
Coal passers and ashmen:										
6 days.....	1	3	6.7	111.7	48.0	48.0	54.8	114.2	35.70	.651
7 days.....	3	37	6.0	85.7	56.0	56.0	49.3	88.0	30.14	.612
12 days.....	3	255	9.4	78.3	48.0	96.0	87.5	91.1	53.17	.608
13 days.....	1	20	11.5	88.5	66.0	143.0	114.8	80.3	69.28	.603
14 days.....	1	84	13.0	92.9	56.0	112.0	107.6	96.1	62.15	.577
15 days.....	4	262	9.6	64.0	59.9	128.4	79.4	61.8	51.32	.647
Total.....	11	661			54.7					.620
Engineers and chillermen:										
6 days.....	5	28	6.1	101.7	48.4	48.4	51.1	105.6	43.11	.844
7 days.....	6	49	6.8	97.1	56.0	56.0	55.1	98.4	43.02	.781
12 days.....	4	48	12.0	100.0	48.0	96.0	97.5	101.6	101.31	1.039
13 days.....	5	19	13.1	100.8	51.4	111.4	113.0	101.4	98.42	.871
14 days.....	5	68	13.6	97.1	58.4	116.8	116.3	99.6	91.17	.784
15 days.....	26	216	14.5	96.7	57.1	122.3	119.4	97.6	91.67	.768
16 days.....	1	4	14.3	89.4	56.0	128.0	114.0	89.1	80.66	.708
Total.....	45	432			55.3					.811

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued										
Filterers:										
12 days.....	3	10	12.4	103.3	48.0	96.0	99.6	103.8	\$100.60	\$1.010
14 days.....	1	16	13.6	97.1	56.0	112.0	113.1	101.0	72.84	.644
15 days.....	12	38	14.1	94.0	53.4	125.1	120.5	96.3	80.79	.670
16 days.....	2	20	16.6	103.8	56.0	128.0	131.6	102.8	85.41	.649
Total.....	18	84			56.1					.701
Firemen and assistant engineers:										
6 days.....	4	139	6.1	101.7	48.0	48.0	48.7	101.5	38.21	.784
7 days.....	9	361	6.7	95.7	56.2	56.2	54.1	96.3	37.25	.689
12 days.....	4	806	11.8	98.3	48.0	96.0	94.0	97.9	85.96	.915
13 days.....	6	264	12.5	96.2	49.3	106.9	103.3	96.6	82.33	.797
14 days.....	4	421	13.3	95.0	56.2	112.4	109.4	97.3	71.95	.658
15 days.....	54	1,524	13.7	91.3	56.6	121.2	111.0	91.6	78.49	.707
16 days.....	2	14	15.6	97.5	56.0	128.0	125.1	97.7	75.68	.605
30 days.....	1	3	29.7	99.0	56.0	240.0	240.0	100.0	159.78	.666
Total.....	80	3,532			53.6					.756
Gaugers:										
6 days.....	3	10	7.3	121.7	50.0	50.0	59.8	119.6	38.62	.646
7 days.....	4	12	6.7	95.7	56.0	56.0	56.1	100.2	33.47	.596
12 days.....	3	20	12.5	104.2	48.0	96.0	104.0	108.3	96.60	.929
13 days.....	6	12	12.0	92.3	49.3	107.3	103.1	96.1	69.50	.674
15 days.....	37	178	14.3	95.3	56.7	121.4	117.1	96.5	78.86	.674
30 days.....	1	2	30.0	100.0	56.0	240.0	240.0	100.0	167.50	.698
Total.....	52	234			55.2					.691
Molders:										
6 days.....	1	11	5.6	93.3	48.0	48.0	48.2	100.4	31.45	.653
7 days.....	2	25	6.6	94.3	56.0	56.0	52.0	92.9	37.86	.728
12 days.....	3	41	11.8	98.3	48.2	96.4	95.5	99.1	76.04	.796
13 days.....	2	9	12.3	94.6	48.0	115.1	110.6	96.1	81.06	.733
15 days.....	7	64	13.3	88.7	56.0	120.0	106.9	89.1	74.28	.695
Total.....	14	150			52.8					.727
Molders (female):										
13 days.....	2	8	12.0	92.3	52.5	113.8	103.9	91.3	62.95	.606
Oilers:										
6 days.....	1	3	6.0	100.0	48.0	48.0	48.0	100.0	36.29	.756
7 days.....	2	4	7.0	100.0	56.0	56.0	56.0	100.0	40.66	.726
12 days.....	2	19	11.7	97.5	48.3	96.6	95.9	99.3	83.87	.874
14 days.....	3	23	13.7	97.9	55.8	111.6	113.5	101.7	78.51	.692
15 days.....	2	5	14.6	97.3	57.4	123.0	120.8	98.2	70.47	.583
Total.....	9	54			52.9					.752
Pressmen:										
6 days.....	3	12	6.0	100.0	48.0	48.0	48.4	100.8	36.76	.760
7 days.....	2	20	6.5	92.9	56.0	56.0	51.6	92.1	38.32	.743
12 days.....	3	127	11.7	97.5	48.0	96.0	93.3	97.2	82.15	.881
14 days.....	4	54	12.6	90.0	57.9	115.8	96.5	83.3	75.17	.779
15 days.....	19	168	13.4	89.3	56.2	120.4	108.3	90.0	80.17	.740
16 days.....	1	3	16.0	100.0	56.0	128.0	128.0	100.0	80.00	.625
Total.....	31	384			53.4					.792

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued.										
Press runners:										
7 days.....	3	11	6.7	95.7	56.0	56.0	56.0	100.0	\$39.02	\$0.697
14 days.....	1	8	12.9	92.1	56.0	112.0	108.5	96.9	74.24	.684
Total.....	4	19			56.0					.692
Pumpmen:										
6 days.....	5	38	6.1	101.7	48.3	48.3	52.7	109.1	41.85	.794
7 days.....	6	97	6.7	95.7	56.0	56.0	55.0	98.2	38.72	.704
12 days.....	5	251	12.4	103.3	48.5	97.0	101.9	105.1	94.20	.925
13 days.....	7	98	12.7	97.7	48.3	104.7	102.6	98.0	94.03	.917
14 days.....	4	141	13.1	93.6	56.4	112.8	111.6	98.9	77.42	.694
15 days.....	48	449	14.2	94.7	56.5	121.0	116.4	96.2	85.70	.736
16 days.....	3	10	16.3	101.9	56.0	128.0	130.4	101.9	85.86	.658
30 days.....	1	3	30.0	100.0	56.0	240.0	240.0	100.0	160.00	.667
Total.....	70	1,087			53.6					.789
Pumpmen's helpers:										
6 days.....	3	11	5.9	98.3	48.0	48.0	47.7	99.4	34.75	.729
7 days.....	3	25	6.7	95.7	56.0	56.0	54.9	98.0	40.93	.746
12 days.....	4	85	11.9	99.2	48.5	97.0	97.1	100.1	86.62	.892
13 days.....	5	25	12.8	98.5	48.5	105.0	102.9	98.0	88.35	.859
14 days.....	3	133	13.1	93.6	55.6	111.2	109.6	98.6	69.16	.631
15 days.....	16	166	13.7	91.3	56.3	120.7	111.6	92.5	83.48	.748
16 days.....	1	2	15.0	93.8	56.0	128.0	119.0	93.0	70.66	.594
Total.....	29	447			54.0					.746
Repairmen:										
6 days.....	2	4	6.5	108.3	48.0	48.0	52.2	108.8	39.51	.757
12 days.....	4	19	12.0	100.0	48.1	96.2	95.9	99.7	82.79	.863
13 days.....	2	9	10.0	76.9	48.0	104.0	83.0	79.8	52.18	.629
14 days.....	1	1	14.0	100.0	54.7	109.4	126.5	115.6	94.62	.748
15 days.....	2	3	14.7	98.0	56.0	120.0	118.0	98.3	75.73	.642
Total.....	11	36			48.9					.771
Retort, acid, and kettle men:										
6 days.....	2	7	5.7	95.0	48.0	48.0	45.0	93.8	30.65	.681
7 days.....	2	17	6.9	98.6	56.0	56.0	55.3	98.8	36.56	.661
12 days.....	2	7	12.0	100.0	51.4	102.8	105.8	102.9	97.12	.918
14 days.....	3	11	14.5	103.6	55.6	111.2	117.5	105.7	80.86	.688
15 days.....	6	43	13.8	92.0	56.0	120.0	109.7	91.4	96.48	.879
Total.....	14	85			54.9					.798
Still inspectors:										
7 days.....	1	2	7.0	100.0	56.0	56.0	56.0	100.0	52.08	.930
12 days.....	1	4	12.0	100.0	48.0	96.0	96.0	100.0	99.96	1.041
14 days.....	3	13	13.4	95.7	58.2	116.4	113.2	97.3	115.33	1.019
15 days.....	2	6	14.8	98.7	56.0	120.0	118.7	98.9	99.30	.837
Total.....	6	25			55.8					.972

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued.										
Stillmen:										
6 days.....	3	29	6.4	106.7	48.0	48.0	51.0	106.3	\$50.47	\$0.990
7 days.....	8	121	6.8	97.1	56.7	56.7	55.8	98.4	46.94	.842
12 days.....	3	222	11.9	99.2	48.0	96.0	94.9	98.9	108.46	1.143
13 days.....	5	91	13.1	100.8	47.7	103.4	106.8	103.3	103.61	.970
14 days.....	4	87	13.7	97.9	56.2	112.4	112.7	100.3	88.13	.782
15 days.....	54	637	14.2	94.7	56.7	121.6	115.5	95.0	96.94	.839
16 days.....	2	9	17.4	108.8	56.0	128.0	138.2	108.0	99.89	.723
30 days.....	2	9	30.0	100.0	56.0	240.0	240.0	100.0	244.44	1.019
Total.....	80	1,205			54.2					.905
Stillmen's assistants, chargers, and headers-up:										
6 days.....	2	24	6.0	100.0	48.0	48.0	47.5	99.0	41.58	.876
7 days.....	6	71	67.3	96.1	56.6	56.6	54.6	96.5	40.00	.732
12 days.....	4	249	11.6	96.7	48.0	96.0	92.7	96.6	88.29	.952
13 days.....	4	133	12.7	97.7	48.0	104.0	101.3	97.4	88.04	.869
14 days.....	3	142	13.4	95.7	56.2	112.4	111.4	99.1	78.08	.701
15 days.....	41	725	13.9	92.7	56.0	120.0	111.4	92.8	84.31	.757
Total.....	59	1,344			53.6					.799
Sweatermen:										
6 days.....	2	6	5.5	91.7	48.0	48.0	44.7	93.1	37.77	.845
7 days.....	3	12	6.9	98.6	56.0	56.0	55.7	99.5	40.09	.720
12 days.....	3	33	12.0	100.0	48.0	96.0	96.2	100.2	92.07	.964
13 days.....	2	7	12.5	103.1	51.4	111.4	116.6	104.7	95.49	.819
14 days.....	1	6	12.5	89.3	56.0	112.0	116.3	103.8	81.47	.700
15 days.....	16	56	14.1	94.0	56.6	121.3	117.8	97.1	88.19	.749
16 days.....	1	3	16.0	100.0	56.0	128.0	128.0	100.0	72.00	.563
Total.....	26	123			53.5					.806
Testers:										
6 days.....	2	8	6.0	100.0	48.0	48.0	48.0	100.0	27.44	.572
7 days.....	2	6	7.0	100.0	56.0	56.0	56.0	100.0	29.93	.535
12 days.....	2	12	11.9	99.2	49.1	98.2	98.9	100.7	53.57	.542
13 days.....	7	38	12.2	93.8	48.0	104.0	98.2	94.4	65.08	.663
14 days.....	1	14	13.1	93.6	56.0	112.0	110.3	98.5	67.33	.610
15 days.....	18	60	14.2	94.7	56.1	120.3	115.0	95.6	69.77	.607
30 days.....	1	1	30.0	100.0	63.0	270.0	270.0	100.0	265.00	.981
Total.....	28	139			52.9					.615
Testers (female):										
12 days.....	1	5	11.8	98.3	49.0	98.0	92.8	94.7	51.96	.560
Testers' assistants:										
6 days.....	1	1	6.0	100.0	48.0	48.0	48.0	100.0	41.50	.865
12 days.....	1	8	11.8	98.3	49.0	98.0	99.9	101.9	40.94	.409
13 days.....	1	5	11.6	89.2	48.0	104.0	90.4	86.9	46.07	.510
15 days.....	6	21	13.0	86.7	56.0	120.0	105.2	87.7	67.15	.638
Total.....	9	35			53.0					.574

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued.										
Treaters:										
6 days.....	6	17	6.1	101.7	48.8	48.8	50.3	103.1	\$44.86	\$0.892
7 days.....	4	13	6.6	94.3	60.3	60.3	56.2	93.2	44.49	.792
12 days.....	6	24	12.4	103.3	49.8	99.6	102.8	103.2	106.08	1.032
13 days.....	9	17	13.1	100.8	49.8	107.8	108.9	101.0	98.52	.905
14 days.....	1	16	13.1	93.6	56.0	112.0	110.5	98.7	78.87	.714
15 days.....	48	144	14.6	97.3	57.1	122.4	121.1	98.9	97.11	.802
16 days.....	1	3	16.0	100.0	56.0	128.0	128.0	100.0	84.00	.656
30 days.....	1	1	30.0	100.0	63.0	270.0	270.0	100.0	200.00	.741
Total.....	73	235			55.3					.831
Treaters' helpers:										
6 days.....	2	7	6.1	101.7	52.3	52.3	53.2	101.7	31.89	.599
7 days.....	3	10	6.7	95.7	56.0	56.0	57.1	102.0	39.21	.687
12 days.....	4	31	12.0	100.0	48.4	96.8	96.9	100.1	92.64	.956
13 days.....	6	21	13.2	101.5	49.4	107.1	109.2	102.0	92.45	.847
15 days.....	22	122	14.0	93.3	56.6	121.2	114.7	94.6	80.91	.706
Total.....	36	191			54.3					.757
Water purifiers:										
12 days.....	1	5	11.2	93.3	48.0	96.0	88.2	91.9	72.27	.819
14 days.....	1	6	13.7	97.9	56.0	112.0	112.0	100.0	75.80	.677
15 days.....	4	13	15.0	100.0	56.0	120.0	121.1	100.9	79.48	.656
Total.....	6	24			54.3					.695
Water tenders:										
6 days.....	1	8	6.0	100.0	48.0	48.0	48.0	100.0	47.25	.984
7 days.....	3	36	6.8	97.1	56.0	56.0	54.8	97.9	44.26	.808
12 days.....	2	72	11.9	99.2	48.0	96.0	94.2	98.1	97.60	1.036
13 days.....	3	55	13.1	100.8	48.0	104.0	104.9	100.9	104.31	.995
14 days.....	2	42	13.4	95.7	55.9	111.8	109.1	97.6	78.07	.715
15 days.....	17	80	14.4	96.0	57.6	123.4	119.9	97.2	88.76	.741
Total.....	28	293			52.7					.872
FILLING, PACKING, AND SHIPPING.										
Branders and painters:										
6 days.....	2	6	6.5	108.3	49.3	49.3	57.2	116.0	35.26	.616
12 days.....	5	54	11.4	95.0	48.6	97.2	97.4	100.2	67.88	.697
13 days.....	8	36	12.1	93.1	48.0	104.0	95.6	91.9	62.31	.652
Total.....	15	96			48.4					.675
Branders and painters (female):										
12 days.....	1	1	12.0	100.0	49.0	98.0	97.5	99.5	51.45	.528
Fillers:										
6 days.....	7	28	6.1	101.7	48.3	48.3	50.1	103.7	29.21	.583
12 days.....	6	63	12.1	100.8	48.7	97.4	103.3	106.1	68.58	.664
13 days.....	17	132	11.9	91.5	48.7	105.5	97.5	92.4	64.83	.665
15 days.....	4	15	12.1	80.7	57.4	123.0	101.5	82.5	68.12	.671
Total.....	33	238			49.2					.655

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENT THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued.										
FILING, PACKING, AND SHIPPING—contd.										
Fillers (female): 13 days.....	1	52	12.0	92.3	44.0	96.0	89.6	93.3	\$34.30	\$0.383
Inspectors:										
6 days.....	5	13	5.6	93.3	48.8	48.8	45.9	94.1	34.48	.752
12 days.....	4	17	12.2	101.7	48.8	97.6	107.2	109.8	79.08	.737
13 days.....	11	27	12.8	98.5	49.6	107.4	104.6	97.4	85.76	.820
15 days.....	3	4	12.5	83.3	56.0	120.0	99.0	82.5	67.05	.677
16 days.....	1	1	16.0	100.0	56.0	128.0	128.0	100.0	156.00	1.219
30 days.....	1	1	30.0	100.0	63.0	270.0	270.0	100.0	175.00	.648
Total.....	24	63			49.9					.778
Nailers:										
6 days.....	1	6	6.0	100.0	48.0	48.0	48.2	100.4	28.06	.582
12 days.....	3	5	12.2	101.7	48.4	96.8	104.0	107.4	75.19	.723
13 days.....	2	8	10.6	81.5	53.3	115.4	93.8	81.3	63.14	.673
Total.....	6	19			50.3					.657
Nailers (female): 12 days.....	1	3	12.0	100.0	44.0	88.0	88.0	100.0	44.17	.502
Packers:										
6 days.....	4	25	5.5	91.7	48.0	48.0	45.0	93.8	28.06	.623
12 days.....	5	74	10.0	83.3	48.5	97.0	79.6	82.1	53.27	.669
13 days.....	2	7	12.1	93.1	48.0	104.0	92.5	88.9	70.73	.765
15 days.....	2	3	15.0	100.0	56.0	120.0	123.3	102.8	71.83	.582
Total.....	13	109			48.6					.662
Packers (female): 6 days.....	1	75	5.0	83.3	48.0	48.0	39.6	82.5	13.07	.330
12 days.....	2	60	11.4	95.0	47.2	94.4	88.8	94.1	40.93	.461
13 days.....	1	40	13.2	101.5	46.7	101.4	99.9	98.5	42.96	.430
Total.....	4	175			47.4					.398
Tank-car loaders:										
6 days.....	8	37	6.1	101.7	49.4	49.4	52.6	106.5	33.80	.642
7 days.....	2	9	6.2	88.6	56.0	56.0	48.7	87.0	27.57	.566
12 days.....	6	57	11.8	98.3	49.5	99.0	107.3	108.4	64.84	.604
13 days.....	23	76	12.1	93.1	50.4	109.2	102.5	93.9	65.00	.634
14 days.....	1	1	14.0	100.0	70.0	140.0	149.0	106.4	122.18	.820
15 days.....	27	76	13.6	90.7	56.6	121.4	119.8	98.7	74.06	.618
16 days.....	1	3	15.3	95.6	56.0	128.0	121.3	94.8	103.33	.852
30 days.....	1	2	30.0	100.0	56.0	240.0	240.0	100.0	167.50	.698
Total.....	69	261			52.2					.625
Testers: 12 days.....	2	13	11.2	93.3	48.7	97.4	89.6	92.0	54.96	.613
Weighers:										
6 days.....	3	14	6.1	101.7	49.0	49.0	52.7	107.6	35.86	.681
12 days.....	3	17	11.9	99.2	47.1	94.2	98.3	104.4	74.37	.757
13 days.....	5	15	12.6	96.9	48.8	105.7	102.3	96.8	74.60	.729
15 days.....	3	12	13.0	86.7	56.6	121.3	105.5	87.0	65.42	.620
Total.....	13	58			50.0					.703

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.		
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.	
REFINERIES—Continued.											
TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.											
Brakemen:											
5 days.....	1	3	5.0	100.0	50.0	50.0	50.0	100.0	\$32.00	\$0.640	
6 days.....	2	7	6.4	106.7	49.3	49.3	59.3	120.3	39.43	.665	
12 days.....	3	36	11.8	98.3	47.5	95.0	106.1	111.7	101.07	.953	
13 days.....	1	2	11.0	84.6	48.0	104.0	89.0	85.6	72.58	.815	
Total.....	6	48			47.9					.886	
Chauffeurs:											
6 days.....	9	38	5.8	96.7	48.4	48.4	48.7	100.6	30.41	.625	
7 days.....	1	2	7.0	100.0	84.0	84.0	84.0	100.0	35.00	.417	
12 days.....	7	76	12.0	100.0	48.8	97.6	104.5	107.1	72.95	.698	
13 days.....	27	144	12.7	97.7	51.4	111.4	110.8	99.5	76.69	.692	
15 days.....	5	10	13.0	86.7	56.7	121.5	105.7	87.0	67.13	.635	
16 days.....	1	3	15.7	98.1	60.0	135.0	137.2	101.6	110.89	.808	
30 days.....	1	2	29.5	98.3	56.0	240.0	253.8	105.8	162.50	.640	
Total.....	51	275			50.8					.681	
Conductors:											
5 days.....	1	1	5.0	100.0	50.0	50.0	50.0	100.0	34.00	.680	
6 days.....	2	3	6.0	100.0	49.0	49.0	63.2	129.0	46.72	.740	
12 days.....	2	11	11.9	99.2	48.0	96.0	110.2	114.8	127.30	1.155	
15 days.....	1	12	11.1	74.0	75.0	160.6	116.3	72.4	119.09	1.024	
Total.....	5	27			60.2					1.033	
Engineers, railroad:											
5 days.....	1	1	7.0	140.0	50.0	50.0	70.0	140.0	53.70	.767	
6 days.....	4	10	5.9	98.3	49.3	49.3	55.5	112.6	44.45	.802	
12 days.....	3	28	12.8	106.7	48.0	96.0	108.9	113.4	122.62	1.126	
13 days.....	5	10	13.1	100.8	48.0	104.0	111.1	106.8	95.17	.856	
15 days.....	2	14	13.4	89.3	74.0	158.6	141.7	89.3	140.58	.992	
Total.....	14	63			54.0					.996	
Firemen:											
5 days.....	1	1	5.6	100.0	50.0	50.0	50.0	100.0	30.50	.610	
6 days.....	1	2	6.5	108.3	52.5	52.5	65.0	123.8	40.18	.618	
12 days.....	3	11	11.6	96.7	47.7	95.4	108.9	114.2	105.96	.973	
13 days.....	2	5	13.8	106.2	48.0	104.0	125.0	120.2	88.86	.711	
15 days.....	2	17	11.6	77.3	73.3	157.1	118.7	75.6	95.68	.806	
Total.....	8	36			60.2					.828	
Teamsters and drivers:											
6 days.....	4	27	5.6	93.3	50.4	50.4	48.0	95.2	29.56	.616	
12 days.....	3	122	12.3	102.5	49.5	99.0	110.5	111.6	65.80	.595	
13 days.....	15	124	11.9	91.5	52.1	112.9	101.1	89.5	67.72	.670	
15 days.....	4	7	14.0	93.3	58.4	125.1	118.3	94.6	67.84	.573	
Total.....	26	280			51.0					.630	
Trackmen:											
6 days.....	1	12	5.6	93.3	48.0	48.0	44.7	93.1	27.80	.622	
12 days.....	1	8	11.4	95.0	48.0	96.0	101.0	105.2	74.74	.740	
13 days.....	3	52	9.8	75.4	53.5	116.0	86.7	74.7	48.47	.559	
Total.....	5	72			52.0					.590	

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Continued.										
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.										
Blacksmiths:										
6 days.....	8	20	5.3	88.3	48.2	48.2	42.0	87.1	\$34.75	\$0.828
12 days.....	5	41	11.8	98.3	48.5	97.0	97.8	100.8	83.31	.852
13 days.....	32	116	12.5	96.2	47.5	103.3	98.9	95.7	87.24	.882
15 days.....	1	1	14.0	93.3	63.0	135.0	121.5	90.0	91.13	.750
26 days.....	1	1	26.0	100.0	54.0	234.0	231.0	98.7	127.66	.553
Total.....	47	179			47.9					.867
Boiler makers:										
6 days.....	9	196	5.7	95.0	48.0	48.0	45.9	95.6	41.75	.909
12 days.....	5	414	11.1	92.5	48.0	96.0	90.4	94.2	98.49	1.090
13 days.....	40	529	11.9	91.5	48.1	104.4	95.3	91.3	90.24	.947
14 days.....	2	3	13.3	95.0	55.1	110.2	106.7	96.8	91.60	.859
15 days.....	5	7	13.4	89.3	61.0	130.7	122.3	93.6	111.66	.913
26 days.....	1	4	10.3	39.6	48.0	208.0	90.5	43.5	73.50	.812
Total.....	60	1,153			48.1					.991
Boiler makers' helpers:										
6 days.....	10	262	5.5	91.7	48.2	48.2	45.6	94.6	32.98	.723
12 days.....	5	988	10.9	90.8	48.1	96.2	88.7	92.2	65.20	.735
13 days.....	30	1,276	11.1	85.4	47.1	102.4	86.2	84.2	64.52	.749
14 days.....	1	5	13.8	98.6	56.0	112.0	116.2	103.8	86.45	.744
15 days.....	2	3	15.0	100.0	56.0	120.0	113.7	94.8	74.45	.655
26 days.....	1	2	14.5	55.8	48.0	208.0	129.0	62.0	73.25	.568
Total.....	48	2,536			47.6					.741
Bricklayers and masons:										
6 days.....	10	68	5.6	93.3	47.6	47.6	44.6	93.7	45.55	1.020
12 days.....	6	174	10.7	89.2	47.9	95.8	87.6	91.4	95.98	1.096
13 days.....	34	348	10.6	81.5	48.0	104.0	85.1	81.8	96.98	1.139
15 days.....	2	5	5.2	34.7	56.0	120.0	39.7	33.1	41.59	1.048
26 days.....	1	3	3.3	12.7	48.0	208.0	29.3	14.1	49.87	1.700
Total.....	52	598			48.0					1.115
Carpenters:										
6 days.....	13	132	5.5	91.7	48.2	48.2	44.3	91.9	38.78	.876
12 days.....	7	296	11.2	93.3	47.9	95.8	90.9	94.9	82.69	.909
13 days.....	42	560	11.4	87.7	47.5	103.0	91.0	88.3	81.05	.890
15 days.....	2	2	14.5	96.7	56.0	120.0	114.0	95.0	89.95	.789
26 days.....	1	5	16.8	64.6	54.0	234.0	147.8	63.2	149.60	1.012
Total.....	65	995			47.8					.894
Coopers:										
6 days.....	3	63	5.7	95.0	48.6	48.6	49.8	102.5	36.98	.742
12 days.....	6	106	10.7	89.2	48.2	96.4	90.1	93.5	73.57	.817
13 days.....	11	59	11.4	87.7	48.7	105.5	92.6	87.8	75.18	.812
15 days.....	3	11	14.7	98.0	61.7	132.3	138.1	104.4	89.89	.651
Total.....	23	239			49.0					.788

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.		
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.	
REFINERIES—Continued.											
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.											
Crane operators:											
6 days.....	5	8	6.4	106.7	50.6	50.6	57.1	112.8	\$48.98	\$0.858	
12 days.....	4	21	12.0	100.0	48.3	96.6	102.5	106.1	97.32	.949	
13 days.....	7	50	12.6	96.9	53.9	117.0	118.8	101.5	101.00	.850	
15 days.....	3	8	14.4	96.0	68.3	146.3	142.8	97.6	112.86	.790	
Total.....	18	87			53.6					.809	
Crane riggers:											
6 days.....	1	17	6.5	108.3	49.5	49.5	60.5	122.2	39.16	.648	
12 days.....	4	97	11.4	95.0	48.4	96.8	92.6	95.7	70.10	.757	
13 days.....	6	90	11.0	84.6	48.1	104.1	88.6	85.1	69.06	.780	
Total.....	11	204			48.4					.758	
Driving-machine operators:											
6 days.....	1	4	6.0	100.0	49.5	49.5	54.3	109.7	34.66	.639	
12 days.....	2	5	12.0	100.0	48.6	97.2	107.3	110.4	70.55	.657	
Total.....	3	9			49.0					.649	
Electricians:											
6 days.....	10	39	5.6	93.3	48.0	48.0	45.6	95.0	42.12	.923	
7 days.....	1	1	7.0	100.0	56.0	56.0	56.0	100.0	50.00	.893	
12 days.....	5	87	11.5	95.8	48.0	96.0	94.5	98.4	89.23	.944	
13 days.....	23	107	12.4	95.4	48.2	104.5	101.1	96.7	91.96	.910	
14 days.....	2	6	13.8	98.6	55.3	110.6	112.5	101.7	94.08	.836	
15 days.....	5	11	14.3	95.3	56.6	121.4	119.4	98.4	99.85	.836	
Total.....	42	251			48.7					.919	
Helpers: ¹											
6 days.....	12	224	5.6	93.3	48.1	48.1	46.7	97.1	28.98	.621	
7 days.....	1	1	7.0	100.0	56.0	56.0	57.5	102.7	38.53	.670	
12 days.....	6	827	10.8	90.0	48.0	96.0	89.1	92.8	55.23	.620	
13 days.....	33	1,210	11.8	90.8	48.2	104.6	96.6	92.4	67.44	.698	
15 days.....	4	10	11.4	76.0	58.8	126.0	98.1	77.9	63.14	.644	
Total.....	52	2,272			48.2					.662	
Laborers:											
6 days.....	15	1,201	5.5	91.7	48.3	48.3	46.1	95.4	25.23	.547	
7 days.....	3	75	6.6	94.3	57.4	57.4	55.3	96.3	31.37	.567	
12 days.....	7	3,726	10.9	90.8	48.5	97.0	91.3	94.1	55.26	.605	
13 days.....	46	5,604	10.5	80.8	49.8	108.0	88.7	82.1	49.67	.560	
14 days.....	1	2	14.0	100.0	54.7	109.4	112.0	102.4	66.53	.594	
15 days.....	21	493	11.7	78.0	59.3	127.2	100.1	78.7	59.13	.591	
16 days.....	2	5	16.0	100.0	56.0	128.0	129.1	100.9	92.70	.718	
30 days.....	1	33	11.6	38.7	63.0	270.0	97.1	36.0	52.83	.544	
Total.....	78	11,139			49.7					.575	
Laborers (female):											
12 days.....	1	28	11.6	96.7	44.4	88.8	86.6	97.5	42.96	.496	
15 days.....	1	1	15.0	100.0	56.0	120.0	108.0	90.0	62.66	.580	
Total.....	2	29			44.8					.499	

¹ Not including boiler makers' and pipe fitters' helpers.

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Continued.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employ-ees.	Starts (days on which employ-ees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earn-ings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll-period.	Per hour.
REFINERIES—Continued.										
MISCELLANEOUS LABOR, MAINTENANCE AND REPAIR—continued.										
Lead burners:										
6 days.....	5	6	5.2	86.7	48.3	48.3	42.9	88.8	\$41.62	\$0.970
12 days.....	4	12	11.5	95.8	47.8	95.6	95.4	99.8	109.25	1.146
13 days.....	12	28	12.3	94.6	48.7	105.6	100.3	95.0	101.26	1.010
15 days.....	2	4	15.8	105.3	56.0	120.0	124.6	103.8	136.46	1.095
Total.....	23	50	.....	.....	49.0	.....	.....	.....	.....	1.045
Machinists:										
6 days.....	10	77	5.9	98.3	48.5	48.5	50.3	103.7	44.48	.885
12 days.....	6	361	11.5	95.8	48.3	96.6	97.0	100.4	88.18	.909
13 days.....	36	367	12.3	94.6	48.5	105.2	104.1	99.0	94.45	.908
15 days.....	6	8	14.8	98.7	57.8	123.8	123.9	100.1	102.52	.827
Total.....	56	813	.....	.....	48.5	.....	.....	.....	.....	.905
Painters:										
6 days.....	7	49	5.4	90.0	48.0	48.0	43.0	89.6	28.09	.653
12 days.....	6	154	10.9	90.8	48.2	96.4	86.4	89.6	61.66	.714
13 days.....	29	192	11.4	87.7	47.2	102.4	89.1	87.0	64.32	.722
15 days.....	4	11	13.5	90.0	57.3	122.7	113.1	92.2	82.93	.733
26 days.....	1	2	25.0	96.2	54.0	234.0	222.8	95.2	121.06	.543
Total.....	47	408	.....	.....	48.0	.....	.....	.....	.....	.710
Pipe fitters:										
6 days.....	11	189	6.0	100.0	48.2	48.2	50.9	105.6	41.17	.809
7 days.....	2	3	6.7	95.7	56.0	56.0	52.3	93.4	33.72	.644
12 days.....	7	356	11.2	93.3	48.3	96.6	93.9	97.2	84.20	.897
13 days.....	43	442	12.5	96.2	49.8	108.0	106.3	98.4	90.73	.853
14 days.....	1	4	13.5	96.4	56.0	112.0	126.0	112.5	89.65	.711
15 days.....	8	23	13.9	92.7	59.7	127.8	118.8	93.0	89.58	.754
16 days.....	1	2	15.0	93.8	56.0	128.0	123.6	96.6	130.41	1.055
30 days.....	1	6	20.7	69.0	63.0	270.0	184.2	68.2	103.73	.563
Total.....	68	1,025	.....	.....	49.4	.....	.....	.....	.....	.855
Pipe fitters' helpers:										
6 days.....	11	382	5.5	91.7	48.0	48.0	47.0	97.9	29.59	.629
7 days.....	1	1	7.0	100.0	56.0	56.0	56.0	100.0	37.23	.665
12 days.....	6	1,070	10.5	87.5	48.4	96.8	89.3	92.3	61.43	.688
13 days.....	36	1,668	11.4	87.7	48.7	105.6	94.3	89.3	66.12	.701
14 days.....	1	6	13.3	95.0	56.0	112.0	110.7	98.8	60.10	.543
15 days.....	7	93	13.2	88.0	57.1	122.4	107.0	87.4	65.93	.616
Total.....	55	3,220	.....	.....	48.8	.....	.....	.....	.....	.685
Property keepers:										
6 days.....	1	3	6.3	105.0	48.0	48.0	53.0	110.4	48.96	.924
12 days.....	4	38	11.2	93.3	48.4	96.8	100.1	103.4	67.28	.672
13 days.....	7	23	13.3	102.3	47.9	104.0	105.6	101.5	80.30	.760
15 days.....	9	22	14.3	95.3	57.3	122.7	119.5	97.4	76.78	.643
16 days.....	1	1	16.0	100.0	56.0	128.0	128.0	100.0	106.66	.833
Total.....	20	87	.....	.....	50.6	.....	.....	.....	.....	.698

TABLE A.—AVERAGE STARTS (DAYS ON WHICH EMPLOYEES WORKED), HOURS, AND EARNINGS, AND PER CENTS THAT AVERAGE STARTS ARE OF THE TOTAL WORKDAYS AND THAT AVERAGE HOURS ACTUALLY WORKED ARE OF THE AVERAGE FULL-TIME HOURS PER PAY-ROLL PERIOD, BY OCCUPATIONS AND NUMBER OF DAYS IN PAY-ROLL PERIOD, 1920—Concluded.

Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Starts (days on which employees worked) in pay-roll period.		Average full-time hours.		Hours actually worked in pay-roll period.		Average earnings.	
			Average number.	Per cent average number of starts is of total work-days.	Per week.	Per pay-roll period.	Average number.	Per cent average hours worked is of average full-time hours.	In pay-roll period.	Per hour.
REFINERIES—Concluded.										
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—concluded.										
Property keepers (female): 12 days.....	1	1	12.0	100.0	49.0	98.0	102.0	104.1	\$52.99	\$0.520
Tinsmiths:										
6 days.....	2	2	4.5	75.0	48.0	48.0	32.0	66.7	28.92	.904
12 days.....	3	21	11.3	94.2	48.5	97.0	90.4	93.2	83.00	.919
13 days.....	8	32	11.0	84.6	46.4	100.8	85.4	84.7	72.01	.843
Total.....	13	55			47.2					.874
Welders:										
6 days.....	5	8	5.9	98.3	48.2	48.2	47.7	99.0	38.83	.814
12 days.....	5	51	11.3	94.2	48.0	96.0	92.4	96.3	80.33	.870
13 days.....	24	86	12.1	93.1	46.6	101.3	93.9	92.7	86.49	.921
15 days.....	1	1	15.0	100.0	56.0	120.0	120.0	100.0	80.00	.667
26 days.....	1	1	2.0	76.9	48.0	208.0	13.5	6.5	10.50	.778
Total.....	36	147			47.3					.895
Other mechanics:										
6 days.....	9	35	5.6	93.3	47.4	47.4	45.6	96.2	32.46	.712
7 days.....	1	4	7.0	100.0	56.0	56.0	56.1	100.2	39.29	.700
12 days.....	5	203	11.4	95.0	48.3	96.6	93.9	97.2	75.40	.803
13 days.....	37	436	12.1	93.1	49.5	107.3	100.9	94.0	76.97	.763
14 days.....	1	1	8.0	57.1	56.0	112.0	64.0	57.1	62.72	.980
15 days.....	13	45	14.0	93.3	57.4	123.0	113.5	92.3	84.48	.744
16 days.....	1	1	16.0	100.0	56.0	128.0	128.7	100.5	107.50	.835
26 days.....	1	2	17.0	65.4	54.0	234.0	151.0	64.5	92.21	.611
30 days.....	1	1	30.0	100.0	63.0	270.0	270.0	100.0	200.00	.741
Total.....	57	728			49.6					.770
GUARDING, ETC.										
Watchmen:										
6 days.....	2	50	5.9	98.3	48.0	48.0	47.4	98.8	32.09	.677
7 days.....	10	42	6.8	97.1	79.2	79.2	75.7	95.6	32.29	.426
12 days.....	4	201	11.9	99.2	48.2	96.4	96.0	99.6	75.09	.782
13 days.....	7	77	12.9	99.2	58.6	126.8	125.6	99.1	77.84	.620
14 days.....	5	147	13.6	97.1	60.9	121.8	121.4	99.7	72.72	.599
15 days.....	41	248	14.3	95.3	61.0	130.8	124.3	95.0	71.11	.572
16 days.....	1	15	14.2	88.8	56.0	128.0	114.2	89.2	86.34	.756
30 days.....	1	1	30.0	100.0	56.0	240.0	240.0	100.0	140.00	.583
Total.....	65	781			57.5					.638
Other employees:										
6 days.....	10	131	5.9	98.3	48.7	48.7	51.2	105.1	34.47	.673
7 days.....	7	70	6.4	91.4	56.8	56.8	51.9	91.4	32.60	.628
12 days.....	6	698	11.1	92.5	49.4	98.8	93.2	94.3	61.10	.688
13 days.....	38	1,147	11.9	91.5	49.0	106.2	97.5	91.8	69.21	.710
14 days.....	5	117	12.6	90.0	60.5	121.0	110.2	91.1	82.18	.746
15 days.....	37	766	13.2	88.0	57.6	123.4	109.3	88.6	77.02	.704
16 days.....	1	8	15.0	93.8	56.0	128.0	119.6	93.4	92.51	.773
30 days.....	1	2	25.0	83.3	56.0	240.0	210.0	87.5	106.60	.508
Total.....	67	2,939			52.0					.701

TABLE B.—CUMULATIVE PER CENT OF EMPLOYEES WORKING CUSTOMARY HOURS PER DAY, BY OCCUPATIONS AND DAYS PER WEEK.

Occupation and number of days per week.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Cumulative per cent of employees working specified customary hours or less per day.																			
					8 but less on 1 day.	8	8½ but less on 1 day.	8½	8¾ but less on 1 day.	8¾	9 but less on 1 day.	9	9¼ but less on 1 day.	9¼	9½ but less on 1 day.	9½	9¾ but less on 1 day.	9¾	10 but less on 1 day.	10	10½	11	11½	12 but less on 2 days.	12	13
WELLS.																								
Derrick men:																								
Working 7 days per week.	11	891	8.1	56.6	97							97						99					100	
Drillers:																								
Working 7 days per week.	46	2,380	10.6	74.0	34							35						37					100	
Working 6 days per week.	8	195	11.4	68.2								21						21					100	
Drillers' helpers and clean-out helpers:																								
Working 7 days per week.	21	2,378	8.6	60.5	80							84						86					100	
Working 6 days per week.	12	353	9.0	53.9	18							92						96					100	
Firemen:																								
Working 7 days per week.	27	1,087	8.4	58.0	89							89						90					100	
Working 6 days per week.	3	41	8.2	49.2	80							98				100							100	
Gaugers:																								
Working 7 days per week.	20	107	9.0	63.3	50							75						85					100	
Working 6 days per week.	1	16	8.0	48.0	100																		100	
Laborers, roustabouts, and connection men:																								
Working 7 days per week.	34	7,527	8.8	61.6	37							84						99					100	
Working 6 days per week.	28	4,386	8.5	50.9	63					64		88				88		100					100	
Pumpers and engineers:																								
Working 7 days per week.	49	5,755	9.3	64.9	35							76						81					100	
Working 6 days per week.	13	1,447	8.8	52.8	27					27		94						99					100	
Rig builders:																								
Working 7 days per week.	11	171	9.3	64.8	30							44						100						
Working 6 days per week.	8	261	8.1	48.8	93													100						
Teamsters:																								
Working 7 days per week.	20	434	8.6	60.2	49							91						100						
Working 6 days per week.	10	64	9.5	56.9	2							66						84		100				
Tool dressers:																								
Working 7 days per week.	41	1,685	11.3	79.4	15							15						17					100	
Working 6 days per week.	8	209	11.4	72.0								18						19					100	
Truck drivers:																								
Working 7 days per week.	25	534	9.0	63.0	29							74						99					100	
Working 6 days per week.	15	259	8.7	52.4	42						44	89						93		100				

Mechanics:																
Carpenters—																
Working 7 days per week	23	646	8.8	61.4	36					86					100	
Working 6 days per week	21	341	8.3	49.7	68			74		97			97		100	
Machinists—																
Working 7 days per week	16	117	8.9	62.3	33					77					100	
Working 6 days per week	12	157	8.4	50.6	52			59		83			99		100	
Other mechanics—																
Working 7 days per week	25	636	8.7	61.1	37					90					100	100
Working 6 days per week	19	562	8.5	51.1	45			49		98			99		100	
Mechanics' helpers:																
Working 7 days per week	20	321	8.6	60.1	53					88					100	
Working 6 days per week	14	223	8.3	49.7	65			71		95			100			
Other employees:																
Working 7 days per week	38	1,449	9.4	66.0	38					63		63			79	100
Working 6 days per week	20	623	8.7	52.3	38			42		92					98	100
All employees:																
Working 7 days per week	55	26,118	9.2	64.5	43					73		73			81	100
Working 6 days per week	37	9,137	8.7	52.2	50			51		87			88		96	100

PIPE LINES.

Engineers and pumpers:																
Working 7 days per week	39	1,604	8.2	57.7	93					94					95	100
Working 6 days per week	4	130	8.5	51.1	72					76					100	
Firemen:																
Working 7 days per week	31	983	8.1	56.4	98					99						100
Working 6 days per week	2	91	8.1	48.4	97										100	
Gaugers—deliverymen and oil receivers:																
Working 7 days per week	36	863	8.5	59.7	71					78					99	100
Working 6 days per week	8	440	9.5	56.9	10					42					100	
Laborers, roustabouts, etc.:																
Working 7 days per week	18	1,037	8.8	61.8	58					59					100	100
Working 6 days per week	30	10,137	9.0	53.9	22					79		79			100	
Linemen:																
Working 7 days per week	11	141	9.1	63.6	31					60					100	
Working 6 days per week	13	96	8.9	53.5	27					81					100	
Line walkers:																
Working 7 days per week	33	527	9.0	63.0	45					56					100	100
Working 6 days per week	6	28	8.9	53.4	50					61					100	
Oilers:																
Working 7 days per week	11	225	8.0	56.0	100											
Working 6 days per week	1	71	8.0	48.0	100											
Teamsters:																
Working 7 days per week	6	21	9.3	65.3	33										100	
Working 6 days per week	9	111	9.9	59.1	5					10					100	
Telegraph operators:																
Working 7 days per week	26	624	8.0	56.1	100											100
Working 6 days per week	2	18	8.6	51.3	72											

¹ Less than one-half of 1 per cent.

TABLE B.—CUMULATIVE PER CENT OF EMPLOYEES WORKING CUSTOMARY HOURS PER DAY BY OCCUPATIONS AND DAYS PER WEEK—Continued.

Occupation and number of days per week.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Cumulative per cent of employees working specified customary hours or less per day.																	
					8 but less on 1 day.	8	8½ but less on 1 day.	8½	8¾ but less on 1 day.	8¾ but less on 1 day.	9 but less on 1 day.	9	9¼ but less on 1 day.	9¼ but less on 1 day.	9½	9½ but less on 1 day.	10 but less on 1 day.	10	10½	11	11½	12 but less on 2 days.	12	13
PIPE LINES—Concluded.																						
Truck drivers:																						
Working 7 days per week.....	13	101	8.9	62.4	54												100					
Working 6 days per week.....	13	162	9.0	53.7	10						95						100					
Mechanics:																						
Carpenters—																						
Working 7 days per week ..	12	57	8.3	58.1	79						91						100					
Working 6 days per week ..	21	370	9.4	56.1	14						51						100					
Machinists—																						
Working 7 days per week ..	12	48	8.3	57.8	88												100					
Working 6 days per week ..	13	125	9.0	53.9	45						58						100					
Other mechanics—																						
Working 7 days per week ..	19	206	8.3	58.3	80						86						100					
Working 6 days per week ..	18	724	9.1	54.4	37						55						100					
Mechanics' helpers:																						
Working 7 days per week.....	7	40	8.1	56.7	95												100					
Working 6 days per week.....	13	196	8.8	52.9	55						63						100					
Other employees:																						
Working 7 days per week.....	22	258	8.7	60.9	71						78						91				100	
Working 6 days per week.....	14	209	9.0	53.8	34						70						100					
All employees:																						
Working 7 days per week.....	39	6,735	8.4	59.0	79						83						98				100	
Working 6 days per week.....	30	12,908	9.0	54.0	24						75			75			100					

REFINERIES.

REFINING.																								
Clay roasters:																								
Working 7 days per week.....	20	125	8.1	56.7	95						98												100	
Working 6 days per week.....	9	20	8.1	48.9	80						90	95			100									
Coal passers and ashmen:																								
Working 7 days per week.....	8	383	8.4	58.7	65						97						100							
Working 6 days per week.....	5	278	8.2	49.3	92					93									100					

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TABLE B.—CUMULATIVE PER CENT OF EMPLOYEES WORKING CUSTOMARY HOURS PER DAY BY OCCUPATIONS AND DAYS PER WEEK—Continued.

Occupation and number of days per week.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Cumulative per cent of employees working specified customary hours or less per day.																	
					8 but less on 1 day.	8	8½ but less on 1 day.	8½	8¾ but less on 1 day.	8¾ but less on 1 day.	9 but less on 1 day.	9	9¼ but less on 1 day.	9¼ but less on 1 day.	9½	9½ but less on 1 day.	10 but less on 1 day.	10	10½	11	11½	12 but less on 2 days.	12	13
REFINERIES—Continued.																						
REFINING—concluded.																						
Testers (female):																						
Working 6 days per week.....	1	5	8.2	49.0							100											
Testers' assistants:																						
Working 7 days per week.....	6	21	8.0	56.0		100																
Working 6 days per week.....	3	14	8.1	48.6		43					100											
Treaters:																						
Working 7 days per week.....	55	177	8.2	57.3		91					97						97				100	
Working 6 days per week.....	21	58	8.2	49.5		79	81				86	91					100					
Treaters' helpers:																						
Working 7 days per week.....	25	132	8.1	56.5		93					99						100					
Working 6 days per week.....	12	59	8.2	49.2		83					93	95					100					
Water purifiers:																						
Working 7 days per week.....	5	19	8.0	56.0		100																
Working 6 days per week.....	1	5	8.0	48.0		100																
Water tenders:																						
Working 7 days per week.....	23	158	8.1	56.8		97											97				100	
Working 6 days per week.....	6	135	8.0	48.0		100																
FILLING, PACKING, AND SHIPPING.																						
Branders and painters:																						
Working 6 days per week.....	15	96	8.1	48.4	5	51	53		70	71	98						100					
Branders and painters (female):																						
Working 6 days per week.....	1	1	8.2	49.0							100											
Fillers:																						
Working 7 days per week.....	4	15	8.2	57.4		80					100											
Working 6 days per week.....	30	223	8.1	48.6	5	66	77				90	99					100					
Fillers (female):																						
Working 6 days per week.....	1	52	7.3	44.0	100																	
Inspectors:																						
Working 7 days per week.....	5	6	8.2	57.2		83					100											
Working 6 days per week.....	20	57	8.2	49.1		49	54		56	58	86	100	100									

[illegible]

TABLE B.—CUMULATIVE PER CENT OF EMPLOYEES WORKING CUSTOMARY HOURS PER DAY BY OCCUPATIONS AND DAYS PER WEEK—Concluded.

Occupation and number of days per week.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Cumulative per cent of employees working specified customary hours or less per day.																	
					8 but less on 1 day.	8	8½ but less on 1 day.	8½	8¾ but less on 1 day.	8¾ but less on 1 day.	9 but less on 1 day.	9	9¼ but less on 1 day.	9¼ but less on 1 day.	9½ but less on 1 day.	9½ but less on 1 day.	10 but less on 1 day.	10	10½	11	11½	12 but less on 2 days.	12	13

REFINERIES—Concluded.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—concluded.																								
Boiler makers:																								
Working 7 days per week.....	7	10	8.5	59.2	70	70	71	87	90	95	80	96					100	100						
Working 6 days per week.....	55	1,143	8.0	48.0	14	50																		
Boiler makers' helpers:																								
Working 7 days per week.....	3	8	8.0	56.0	100																			
Working 6 days per week.....	46	2,528	7.9	47.6	20	53	75	84	86	98	98						100							
Bricklayers and masons:																								
Working 7 days per week.....	2	5	8.0	56.0	100																			
Working 6 days per week.....	51	593	8.0	47.9	6	65	85	91	94	99	99						100							
Carpenters:																								
Working 7 days per week.....	2	2	8.0	56.0	100																			
Working 6 days per week.....	63	993	8.0	47.7	16	65	80	86	87	97	99						100	100						
Coopers:																								
Working 7 days per week.....	3	11	8.8	61.7	18						100													
Working 6 days per week.....	20	228	8.1	48.4	10	34	79			94	97						100							
Crane operators:																								
Working 7 days per week.....	3	8	9.8	68.3	13												100							
Working 6 days per week.....	16	79	8.7	52.1	13	30	38	47		59	63	66					100							
Crane riggers:																								
Working 6 days per week.....	11	204	8.1	48.4	1	45	63	67		100	100													
Driving-machine operators:																								
Working 6 days per week.....	3	9	8.2	49.0			22			100														
Electricians:																								
Working 7 days per week.....	8	18	8.1	56.2	94						100													
Working 6 days per week.....	37	233	8.0	48.1	9	58	72	81	82	95	100						100							
Helpers: ²																								
Working 7 days per week.....	5	11	8.4	58.5	64						100													
Working 6 days per week.....	50	2,261	8.0	48.2	7	55	82	86	87	95	99	99	99				100	100						
Laborers:																								
Working 7 days per week.....	28	608	8.5	59.2	57						98						100					100	100	
Working 6 days per week.....	67	10,531	8.2	49.2	2	50	66	71	73	85	96		96	97			100	100	100				100	100

² Not including boiler makers' and pipe fitters' helpers.

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARNINGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS AND WORKDAYS IN PAY-ROLL PERIOD, 1920.

WELLS.

Occupation and number of workdays in pay-roll period.	New York, Pennsylvania, and West Virginia.				Illinois, Indiana, Kentucky, and Ohio.				Kansas, Montana, Oklahoma, Utah, and Wyoming.				Arkansas, Louisiana, and Texas.				California.				Total—all States.				
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	
Derrick men:				Dolls.				Dolls.																Dolls.	
15 days.....									1	1	85.0	46.75		8	775	102.9	74.08	3	115	107.7	106.36	11	891	103.5	78.21
Drillers:																									
13 days.....					1	9	153.3	102.22	1	10	78.3	95.70	1	18	131.0	207.94					2	37	122.2	151.89	
15 days.....	2	55	120.4	114.00	5	175	124.3	99.22	17	532	147.3	167.63	18	997	131.7	151.81	4	307	115.2	152.13	34	2,066	132.4	150.47	
26 days.....	6	152	247.2	236.85					2	6	212.5	260.00									7	158	245.9	237.73	
30 days.....									15	294	235.6	290.36	2	15	276.0	361.33					17	309	237.5	293.80	
31 days.....									1	5	218.4	254.80									1	5	218.4	254.80	
Drillers' helpers and clean-out helpers:																									
13 days.....	1	10	120.6	74.20	2	2	128.0	84.00	5	29	104.9	67.17	2	41	112.0	115.53					7	82	110.9	92.62	
15 days.....	2	26	158.3	65.54	2	25	171.8	70.79	4	102	141.8	72.14	13	1,772	94.1	6,295	3	378	113.1	97.53	18	2,303	100.9	69.14	
26 days.....	3	179	229.7	149.74					6	92	150.8	113.20									9	271	202.9	137.33	
30 days.....	1	2	190.0	95.00					4	73	283.7	140.01									5	75	281.2	138.81	
Firemen:																									
13 days.....	1	1	117.0	70.00					2	26	84.6	56.91	1	3	93.0	62.00					3	30	86.5	57.85	
15 days.....									11	45	143.8	71.14	12	963	107.8	71.00	2	49	109.6	87.29	23	1,057	109.3	71.77	
26 days.....									2	11	195.1	132.20									2	11	195.1	132.20	
30 days.....									7	30	288.7	124.58									7	30	288.7	124.58	
Gaugers:																									
13 days.....									1	1	104.0	72.50									1	1	104.0	72.50	
15 days.....	1	3	135.0	75.00	1	1	135.0	90.00	5	13	139.6	79.37	10	65	130.3	82.52	3	19	114.5	95.05	17	101	128.7	84.32	
26 days.....									1	15	208.0	148.67									1	15	208.0	148.67	
30 days.....									4	6	259.0	144.17									4	6	259.0	144.17	
Laborers, roustabouts, and connection men:																									
13 days.....	2	51	96.1	64.38	4	48	107.1	53.97	11	845	91.1	52.81	5	366	94.3	57.70					18	1,310	92.8	54.67	
15 days.....	2	240	72.1	38.40	5	758	103.2	52.25	12	1,591	103.0	57.00	17	3,242	99.9	57.66	4	785	106.3	82.10	28	6,616	100.8	59.08	
26 days.....	8	1,355	110.8	68.73	1	7	70.7	32.25	9	1,714	134.4	83.10									17	3,076	123.8	76.65	
30 days.....	1	5	284.0	145.00					8	904	201.0	102.78	1	2	260.0	156.00					9	911	201.6	103.13	
Pumpers and engineers:																									
13 days.....	1	59	115.3	77.03	2	39	119.6	61.55	3	199	102.9	71.17									6	297	107.5	71.07	
15 days.....	2	113	117.4	71.00	7	1,192	132.1	68.40	18	929	146.3	71.73	22	2,020	129.2	77.26	4	626	116.7	95.23	37	4,880	131.3	76.20	

26 days.....	8	948	229.7	144.85	1	4	260.0	123.75	3	198	183.5	127.62							10	1,150	221.8	141.81		
30 days.....	4	48	304.1	142.03					15	826	280.6	137.32	1	1	360.0	180.00			19	875	282.0	137.62		
Rig builders:																								
13 days.....	2	18	154.9	113.45					1	3	16.7	21.67					1	44	92.5	141.08	4	65	106.3	127.92
15 days.....	2	45	102.2	56.62	2	53	96.0	54.56	1	2	80.0	70.63	3	51	84.5	133.03	2	15	103.6	112.37	9	166	94.6	84.64
26 days.....	4	165	171.9	125.85					1	31	81.7	184.52							5	196	157.6	135.13		
30 days.....	1	4	182.5	93.00					1	1	144.0	88.00							2	5	174.8	92.00		
Teamsters:																								
13 days.....					2	4	137.5	66.19	1	12	117.0	66.92	2	20	124.2	78.83					3	36	123.3	73.45
15 days.....	2	15	124.0	62.89	3	8	120.6	59.56	7	110	113.9	65.58	8	181	112.9	61.32	4	76	108.8	85.33	17	390	113.0	67.22
26 days.....	5	19	269.8	139.47					5	9	235.8	131.48							8	28	258.9	136.90		
30 days.....									3	44	257.3	127.79							5	44	257.3	127.79		
Tool dressers:																								
13 days.....					1	9	153.3	89.44	1	9	77.0	85.56	1	20	123.8	181.75					2	38	119.7	137.11
15 days.....	2	61	120.2	96.61	4	182	122.1	83.02	15	492	141.3	136.21	13	394	150.8	139.55	4	217	112.3	106.59	29	1,346	135.9	123.43
26 days.....	6	165	219.6	177.75					2	6	219.0	204.33							7	171	219.6	178.69		
30 days.....									14	319	223.0	238.51	1	15	258.4	301.47					15	334	224.6	241.33
31 days.....	1	5							1	5	208.8	226.20							1	5	208.8	226.20		
Truck drivers:																								
13 days.....					2	4	130.0	72.65	7	94	103.1	66.47	4	46	136.0	97.60					10	144	114.4	78.59
15 days.....	2	6	145.1	66.00	4	14	134.8	69.01	11	143	116.4	72.68	13	217	136.0	78.21	4	88	110.1	93.57	23	468	125.2	78.98
26 days.....	2	19	248.8	135.92					5	96	191.6	128.95							7	115	201.1	130.10		
30 days.....									5	66	252.3	136.40							5	66	252.3	136.40		
Mechanics:																								
Carpenters—																								
13 days.....	3	23	78.0	59.68	1	1	117.0	78.00	7	76	96.4	91.05	7	52	79.9	72.29	2	79	95.6	118.68	18	231	90.7	93.10
15 days.....	2	37	104.0	59.09	4	63	87.2	51.48	7	147	98.3	78.32	13	319	99.8	79.18	2	27	105.9	98.21	21	593	98.6	75.64
26 days.....	4	46	180.3	134.07					5	64	129.8	103.42							9	110	150.9	116.23		
30 days.....									5	53	145.9	111.82							5	53	145.9	111.82		
Machinists—																								
13 days.....	1	21	104.7	87.71	1	4	104.0	69.13	4	35	94.9	92.63	2	28	105.6	99.62	2	48	101.2	113.46	10	136	101.1	99.97
15 days.....	1	10	116.4	82.25	1	13	110.4	71.52	7	37	116.5	100.44	7	43	127.0	104.10	2	8	105.1	104.47	15	111	119.0	97.12
26 days.....	1	4	191.1	183.13					2	17	213.1	147.73							3	2	208.9	154.48		
30 days.....	1	1	300.0	160.00					2	5	276.0	156.00							3	6	280.0	156.67		
Other mechanics:																								
13 days.....	3	27	95.4	71.65	1	1	135.0	70.00	5	158	103.9	85.21	6	158	111.5	93.48	2	80	98.9	111.09	14	424	105.3	92.28
15 days.....	1	2	105.8	72.75	3	18	114.8	57.54	11	156	119.0	90.23	11	324	116.9	89.70	4	73	110.3	105.24	23	573	116.5	90.75
26 days.....	4	20	189.8	140.24					5	118	183.5	122.70							9	138	184.4	125.24		
30 days.....	1	1	300.0	150.00					4	62	229.0	133.44							5	63	230.2	133.70		
Mechanics' helpers:																								
13 days.....	2	41	100.6	59.88					4	56	95.4	64.47	4	66	100.8	70.77	2	38	103.4	98.82	11	201	99.7	72.10
15 days.....	1	2	112.5	65.03	1	14	123.7	47.33	6	91	111.3	69.36	9	129	98.1	61.87	3	71	110.8	90.70	16	307	106.2	70.12
26 days.....	2	2	176.0	120.00					3	20	185.3	116.46							5	22	184.5	116.78		
30 days.....									5	14	162.4	88.87							5	14	162.4	88.87		
Other employees:																								
13 days.....	1	11	131.1	84.91	3	6	112.5	76.57	7	136	97.6	70.56	5	73	112.0	106.88					13	226	104.3	83.15
15 days.....	2	42	140.3	64.39	5	44	142.0	68.91	15	360	125.6	73.45	20	589	124.9	75.22	4	226	113.6	89.17	34	1,261	124.2	76.64
26 days.....	5	221	211.1	150.37					7	176	149.5	129.94							12	397	183.8	141.31		
30 days.....	1	2	160.0	90.67					9	186	284.4	165.74							10	188	283.1	164.94		

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARNINGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS AND WORKDAYS IN PAY-ROLL PERIOD, 1920—Continued.

PIPE LINES.

	New Jersey, New York, Pennsylvania, and West Virginia.				Illinois, Indiana, Kentucky, and Ohio.				Iowa, Kansas, Missouri, Oklahoma, and Wyoming.				Arkansas, Louisiana, and Texas.				California.				Total—all States.				
Occupation and number of workdays in pay-roll period.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	
				Dolls.				Dolls.				Dolls.				Dolls.				Dolls.				Dolls.	
Engineers and pumpers:																									
7 days.....	1	31	56.5	41.19					1	6	67.7	40.44									2	37	58.3	41.07	
13 days.....					1	3	117.0	65.00					1	3	135.0	87.50	1	93	102.4	105.34	3	99	103.8	103.58	
15 days.....	4	124	121.2	90.04	9	237	117.4	84.55	12	446	123.3	85.36	12	496	116.7	84.45	3	195	119.7	104.62	33	1,498	119.5	87.82	
26 days.....	1	31	198.7	138.16																	1	31	198.7	138.16	
30 days.....	3	57	234.5	177.16	1	12	230.7	168.08													4	69	233.9	175.58	
Firemen:																									
7 days.....	1	54	54.8	35.49																	1	54	54.8	35.49	
13 days.....																					1	88	99.8	92.18	
15 days.....	5	115	114.6	77.39	7	140	116.5	75.45	7	192	113.7	75.10	9	214	112.1	73.07	3	182	116.3	91.07	26	843	114.5	78.42	
26 days.....	1	3	116.7	74.90																	1	3	116.7	74.90	
30 days.....	3	70	204.7	137.33	1	16	233.3	151.41													4	86	210.0	139.95	
Gaugers—delivery men and oil receivers:																									
6 days.....	1	4	60.0	47.84					1	2	73.5	48.83									1	4	60.0	47.84	
7 days.....	1	13	54.8	37.98					1	2	132	114.4	121.96	1	9	110.0	115.28					2	15	57.3	39.42
13 days.....	1	26	127.3	102.36	2	105	125.0	99.19	2	132	114.4	121.96	1	9	110.0	115.28	1	45	101.7	100.88	6	317	117.0	109.63	
15 days.....	5	90	132.8	88.79	9	147	121.0	84.26	11	241	124.0	83.49	12	329	117.6	88.25	2	19	120.2	108.61	31	826	121.8	86.68	
26 days.....	1	119	224.7	180.13																	1	119	224.7	180.13	
30 days.....	2	11	240.0	163.18	1	11	240.0	184.55													3	22	240.0	173.86	
Laborers, roustabouts, etc.:																									
6 days.....	1	51	53.7	23.73					1	6	52.2	28.28	2	483	33.4	14.45					4	540	35.5	15.48	
12 days.....													1	152	58.1	23.22					1	152	58.1	23.22	
13 days.....	5	239	79.0	36.70	10	940	84.0	37.18	8	2,276	86.5	47.19	8	4,980	81.0	40.99	1	730	76.3	60.56	24	9,165	82.3	43.59	
14 days.....													1	23	41.7	28.70					1	23	41.7	28.70	
15 days.....	1	15	132.0	62.07	2	30	78.1	36.32	4	554	97.3	52.88	8	224	88.9	51.58	3	190	101.9	74.36	16	1,013	96.2	56.26	
26 days.....	3	279	119.3	58.52	1	1	240.0	108.00													4	280	119.7	58.70	
30 days.....	1	1	172.5	98.33																	1	1	172.5	98.33	
Linemen:																									
13 days.....					1	2	133.0	74.00	5	47	101.1	68.11	3	17	85.0	59.96	1	14	83.7	76.40	9	80	95.4	67.98	
15 days.....	2	6	116.7	69.92	1	4	150.0	86.25	5	32	141.7	83.52	5	94	118.6	75.02	1	5	120.0	104.89	11	141	224.7	78.11	
26 days.....	3	10	235.0	153.00	1	6	255.0	157.33													4	16	242.5	154.63	

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARNINGS AND WORKDAYS IN PAY-RO

REFINERIES.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
REFINING.												
Clay roasters:				Dolls.				Dolls.				Dolls.
12 days.....	3	13	101.9	94.27	2	3	114.3	71.61	1	1	104.0	80.00
13 days.....												
14 days.....	1	3	104.0	70.93	3	14	115.1	72.43	2	23	99.6	75.65
15 days.....												
16 days.....					2	48	124.2	73.34				
Coal passers and ashmen:												
6 days.....	1	3	54.8	35.70								
7 days.....	3	37	49.3	30.14								
12 days.....	2	97	95.3	76.01								
13 days.....									1	20	114.8	69.28
14 days.....					1	84	107.6	62.15	4	262	79.4	51.32
15 days.....												
Engineers and chiller men:												
6 days.....	2	7	50.1	33.33	2	14	49.7	49.92				
7 days.....	4	32	54.5	44.04	2	17	56.3	41.11				
12 days.....	2	34	98.1	103.62	1	1	92.0	67.50				
13 days.....									3	13	114.7	98.31
14 days.....	2	12	114.5	127.38	3	56	116.7	83.42				
15 days.....					1	8	132.3	81.85	6	38	117.4	95.84
16 days.....					1	4	114.0	80.66				
Filters:												
12 days.....	2	7	96.0	94.99								
14 days.....					1	16	113.1	72.84				
15 days.....												
16 days.....					2	20	131.6	85.41				
Firemen and assistant engineers:												
6 days.....	2	14	52.3	27.84	1	113	47.5	39.71				
7 days.....	4	311	53.7	37.34	2	35	54.7	37.73				
12 days.....	2	525	94.2	86.31	1	13	108.4	63.36				
13 days.....									2	30	130.2	91.12
14 days.....	1	55	109.5	73.68	3	366	109.4	71.69				
15 days.....					1	3	120.3	72.20	7	761	105.5	77.36
16 days.....					2	14	125.1	75.68				
30 days.....												
Gaugers:												
6 days.....	2	4	53.8	31.24								
7 days.....	3	9	55.7	34.12								
12 days.....	2	7	97.0	83.86								
13 days.....					1	1	117.0	62.50				
15 days.....					1	3	120.0	75.00	3	15	119.1	81.10
30 days.....												
Molders:												
6 days.....	1	11	48.2	31.45								
7 days.....	2	25	52.0	37.86								
12 days.....	2	32	96.2	77.92	1	9	93.1	69.36				
13 days.....												
15 days.....									2	35	99.1	73.63
Molders (female):												
13 days.....									2	8	103.9	62.95
Oilers:												
6 days.....					1	3	48.0	36.29				
7 days.....	1	1	56.0	31.60	1	3	56.0	43.68				
12 days.....	1	13	92.4	91.49	1	6	103.4	67.34				
14 days.....	2	7	115.8	83.61	1	16	112.5	76.28				
15 days.....												
Pressmen:												
6 days.....	2	5	45.5	25.19	1	7	50.4	45.02				
7 days.....	2	20	51.6	38.32								
12 days.....	2	94	93.5	86.62								
14 days.....	1	9	100.7	63.27	3	45	95.7	77.55				
15 days.....					1	3	102.3	65.94	6	111	104.7	83.77
16 days.....					1	3	123.0	80.00				
Press runners:												
7 days.....	3	11	56.0	39.02								
14 days.....					1	8	108.5	74.24				

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued.

REFINERIES.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.
			<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
1	1	141.9	85.31					2	2	101.5	110.60	5	16	104.2	90.02
												4	4	112.0	96.63
												17	17	113.2	72.16
9	28	118.9	77.08	3	9	118.7	81.04					14	60	111.5	77.13
												2	48	124.2	73.34
												1	3	54.8	35.70
												3	37	49.3	30.14
				1	158	82.8	39.15					3	255	87.5	53.17
												1	20	114.8	69.28
												1	84	107.6	62.15
												4	262	79.4	51.32
				1	7	54.9	39.25					5	28	51.1	43.11
				1	13	96.3	97.88					6	49	55.1	43.02
												4	48	97.5	101.31
1	2	120.0	94.51					1	4	104.0	100.75	5	19	113.0	98.42
												5	68	116.3	91.17
15	114	118.5	88.19	3	53	121.0	96.91	1	3	112.0	104.65	26	216	119.4	91.67
												1	4	114.0	80.66
				1	3	108.0	113.68					3	10	99.6	100.60
												1	16	113.1	72.84
7	23	122.2	77.75	5	15	117.9	85.46					12	38	120.5	80.79
												2	20	131.6	85.41
				1	12	56.0	36.15					4	139	48.7	38.21
2	5	67.4	40.27	1	10	56.8	31.24					9	361	54.1	37.25
				1	268	92.9	86.37					4	806	94.0	85.96
3	155	98.6	75.22					1	79	102.4	92.98	6	264	103.3	82.33
												4	421	109.4	71.95
22	206	115.3	77.26	21	507	116.7	79.42	3	47	118.0	92.63	54	1,524	111.0	78.49
												2	14	125.1	75.68
1	3	240.0	159.78									1	3	240.0	159.78
				1	6	63.7	43.54					3	10	59.8	38.62
				1	3	57.3	31.53					4	12	56.1	33.47
				1	13	107.7	103.45					3	20	104.0	96.60
1	1	94.5	42.00	3	6	101.6	67.10	1	4	104.0	81.72	6	12	103.1	69.50
16	52	114.3	75.02	14	92	118.9	79.16	3	16	113.1	88.23	37	178	117.1	78.86
1	2	240.0	167.50									1	2	240.0	167.50
												1	11	48.2	31.45
												2	25	52.0	37.86
												3	41	95.5	76.04
1	4	126.3	81.08					1	5	98.0	81.05	2	9	110.6	81.06
1	6	82.5	47.03	4	23	125.3	82.39					7	64	106.9	74.28
												2	8	103.9	62.95
												1	3	48.0	36.29
												2	4	56.0	40.66
												2	19	95.9	83.87
												3	23	113.5	78.51
1	3	120.0	66.00	1	2	122.0	77.17					2	5	120.8	70.47
												3	12	48.4	36.76
												2	20	51.6	38.32
				1	33	92.5	69.42					3	127	93.3	82.15
												4	54	96.5	75.17
9	41	117.1	70.94	3	13	112.0	81.80					19	168	108.3	80.17
												1	3	128.0	80.00
												3	11	56.0	39.02
												1	8	108.5	74.24

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WOKKDAY IN PAY-RO

REFINERIES—Continued.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
REFINING—continued.												
Pumpmen:				Dolls.				Dolls.				Dolls.
6 days.....	3	11	48.9	33.16	1	22	55.1	47.20				
7 days.....	4	81	54.5	38.21	1	11	53.1	44.09				
12 days.....	3	202	101.9	92.68	1	2	130.5	84.83				
13 days.....					1	1	117.0	61.75	3	6	111.2	102.76
14 days.....	1	58	108.8	77.78	3	83	113.5	77.16				
15 days.....					1	2	177.0	107.20	6	94	107.5	95.19
16 days.....					2	9	130.7	84.73				
30 days.....												
Pumpmen's helpers:												
6 days.....	2	2	54.2	33.25	1	9	46.2	35.08				
7 days.....	2	9	51.8	34.14	1	16	56.6	44.75				
12 days.....	3	81	96.4	87.61	1	4	111.5	66.70	1	2	87.0	74.20
13 days.....												
14 days.....	2	39	110.7	75.87	1	94	109.2	66.38	2	77	107.6	93.04
15 days.....												
16 days.....					1	2	119.0	70.66				
Repairmen:												
6 days.....	1	1	53.8	43.70	1	3	51.7	38.11				
12 days.....	2	16	96.5	86.01	1	2	93.0	53.99				
13 days.....												
14 days.....	1	1	126.5	94.62								
15 days.....												
Retort, acid, and kettle men:												
6 days.....	1	4	44.8	23.45	1	3	45.3	40.26				
7 days.....	1	15	54.9	36.02	1	2	58.0	40.60				
12 days.....	1	6	99.4	102.48	1	1	144.0	64.92				
14 days.....	1	3	112.5	82.91	2	8	119.4	80.09				
15 days.....									1	23	97.7	101.58
Still inspectors:												
7 days.....	1	2	56.0	52.08								
12 days.....	1	4	96.0	99.96								
14 days.....	2	7	119.9	137.96	1	6	105.4	89.00				
15 days.....									1	4	112.0	86.24
Stillmen:												
6 days.....	1	3	56.0	38.51	1	16	47.8	53.42				
7 days.....	3	81	54.2	45.49	2	30	55.7	50.41				
12 days.....	2	132	94.9	106.96								
13 days.....									1	2	156.0	112.32
14 days.....	1	32	112.2	96.61	3	55	113.0	83.20				
15 days.....					1	9	128.2	78.49	7	201	109.7	100.75
16 days.....					2	9	138.2	99.89				
30 days.....	1	6	240.0	279.17								
Stillmen's assistants, chargers, and headers-up:												
6 days.....					1	22	46.9	43.35				
7 days.....	4	33	53.2	39.02	1	35	55.9	41.34				
12 days.....	3	150	90.4	81.86								
13 days.....												
14 days.....	1	23	109.9	80.95	2	119	111.7	77.53				
15 days.....					1	3	120.0	75.00	6	315	102.8	85.98
Sweatermen:												
6 days.....	1	1	60.2	49.02	1	5	41.6	35.52				
7 days.....	3	12	55.7	40.09								
12 days.....	2	29	96.2	92.83								
13 days.....									1	2	152.0	101.04
14 days.....					1	6	116.3	81.47				
15 days.....					1	3	107.7	72.09	6	23	114.5	96.80
16 days.....					1	3	128.0	72.00				
Testers:												
6 days.....	2	8	48.0	27.44								
7 days.....	1	3	56.0	33.60								
12 days.....					2	12	98.9	53.57				
13 days.....												
14 days.....					1	14	110.3	67.33				
15 days.....									3	15	110.7	65.98
30 days.....												

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued,

REFINERIES—Continued.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.
			<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
				1	5	50.8	37.40					5	38	52.7	41.85
				1	5	67.2	35.08					6	97	55.0	38.72
				1	47	100.5	101.12					5	251	101.9	94.20
2	14	96.6	81.88					1	77	102.8	95.97	7	98	102.6	94.03
												4	141	111.6	77.42
20	161	115.2	75.62	18	169	121.3	87.80	3	23	119.6	100.21	48	449	116.4	85.70
1	1	128.0	96.00									3	10	130.4	85.86
1	3	240.0	160.00									1	3	240.0	160.00
												3	11	47.7	34.75
												3	25	54.9	40.93
												4	85	97.1	86.62
2	8	106.0	85.96	1	1	107.0	67.80	1	14	103.1	93.20	5	25	102.9	88.35
												3	133	109.6	69.16
8	43	112.6	72.24	5	43	117.5	76.66	1	3	114.7	96.78	16	166	111.6	83.48
												1	2	119.0	70.66
				1	1	92.5	88.80					2	4	52.2	39.51
2	9	83.0	52.18									4	19	95.9	82.79
												2	9	83.0	52.18
1	2	117.0	67.40	1	1	120.0	92.40					1	1	126.5	94.62
												2	3	118.0	75.73
												2	7	45.0	30.65
												2	17	55.3	36.56
												2	7	105.8	97.12
												3	11	117.5	80.86
				4	19	123.7	89.45	1	1	120.0	112.70	6	43	109.7	93.48
												1	2	56.0	52.08
												1	4	96.0	99.96
												3	13	113.2	115.33
												2	6	118.7	99.30
				1	2	132.0	125.40					3	29	51.0	50.47
				1	10	54.5	49.35					8	121	55.8	46.94
2	6	70.0	48.72	1	4	65.6	47.58					3	222	94.9	108.46
				1	90	95.0	110.66					5	91	106.8	103.61
3	67	106.5	102.05					1	22	103.3	107.55	4	87	112.7	88.13
												54	637	115.5	96.94
22	179	116.1	89.72	21	211	119.6	97.39	3	37	117.4	113.02	2	9	138.2	99.89
												2	9	240.0	244.44
1	3	240.0	175.00												
				1	2	53.5	22.07					2	24	47.5	41.58
1	3	56.0	35.0									6	71	54.6	40.00
				1	99	96.3	98.03					4	249	92.7	88.29
3	117	101.2	86.85					1	16	102.0	96.73	4	133	101.3	83.04
												3	142	111.4	78.08
19	156	115.3	80.35	12	224	120.1	83.71	3	27	117.5	93.76	41	725	111.4	84.31
												2	6	44.7	37.77
												3	12	55.7	40.09
				1	4	96.0	91.53					3	33	96.2	92.67
								1	5	102.4	93.28	2	7	116.6	95.49
												1	6	116.3	81.47
6	16	114.3	72.78	3	14	129.4	95.12					16	56	117.8	88.19
												1	3	128.0	72.00
												2	8	48.0	27.44
				1	3	56.0	26.27					2	6	56.0	29.93
												2	12	98.9	53.57
5	17	104.9	72.50	2	21	92.7	59.07					7	38	98.2	65.08
												1	14	110.3	67.33
8	16	123.8	81.36	7	29	112.4	65.34					18	60	115.0	69.77
1	1	270.0	265.00									1	1	270.0	265.00

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WORKDAYS IN PAY-RO

REFINERIES—Continued.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
REFINING—continued.												
Testers (female):				Dolls.				Dolls.				Dolls.
12 days.....					1	5	92.8	51.96				
Testers' assistants:												
6 days.....	1	1	48.0	41.50	1	8	99.9	40.94				
12 days.....												
13 days.....									1	6	123.5	96.29
15 days.....												
Treaters:												
6 days.....	3	4	48.4	33.72	2	10	49.3	47.06				
7 days.....	3	11	52.8	43.75								
12 days.....	3	17	102.71	08.44	2	2	112.3	83.44				
13 days.....					1	1	126.0	80.50	3	5	108.8	89.22
14 days.....					1	16	110.5	78.87				
15 days.....					2	9	126.7	103.22	6	23	116.7	108.88
16 days.....					1	3	128.0	84.00				
30 days.....												
Treaters' helpers:												
6 days.....	1	6	53.1	32.26								
7 days.....	3	10	57.1	39.21								
12 days.....	3	22	93.6	88.39								
13 days.....									1	2	135.0	85.20
15 days.....									4	33	103.3	86.18
Water purifiers:												
12 days.....	1	5	88.2	72.27								
14 days.....					1	6	112.0	75.80				
15 days.....												
Water tenders:												
6 days.....					1	8	48.0	47.25				
7 days.....	2	24	54.2	43.72	1	12	56.0	45.34				
12 days.....	2	72	94.2	97.60								
13 days.....									1	19	109.1	113.41
14 days.....	1	3	112.0	67.35	1	39	108.9	78.89	5	23	123.7	96.80
15 days.....												
FILLING, PACKING, AND SHIPPING.												
Branders and painters:												
6 days.....	1	1	54.3	34.50	1	5	57.8	35.41				
12 days.....	3	31	94.3	76.81	2	23	101.5	55.85				
13 days.....									2	13	94.3	62.24
Branders and painters (female):												
12 days.....					1	1	97.5	51.45				
Fillers:												
6 days.....	4	12	50.3	30.72	2	10	51.5	32.56				
12 days.....	3	24	97.2	79.13	2	29	107.4	65.00				
13 days.....					2	12	115.9	66.52	5	43	92.3	56.91
15 days.....												
Fillers (female):												
13 days.....									1	52	89.6	34.30
Inspectors:												
6 days.....	1	1	59.0	40.12	3	7	50.1	37.17				
12 days.....	3	4	102.0	91.97	1	13	108.8	75.11				
13 days.....									2	8	104.9	97.44
15 days.....												
16 days.....												
30 days.....												
Nailers:												
6 days.....	1	6	48.2	28.06								
12 days.....	2	3	109.5	87.27	1	2	95.8	57.07				
13 days.....									1	7	98.3	65.74
Nailers (female):												
12 days.....					1	3	88.0	44.17				

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued.

REFINERIES—Continued.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Aver- age hours work- ed.	Aver- age earn- ings.
			Dolls.				Dolls.				Dolls.				Dolls.
												1	5	92.8	51.96
												1	1	48.0	41.50
												1	8	99.9	40.94
1	5	90.4	46.07									1	5	90.4	46.07
4	11	99.5	58.00	1	4	93.5	48.62					6	21	105.2	67.15
				1	3	56.0	52.36					6	17	50.3	44.86
1	2	74.8	48.59	1	5	99.2	107.12					4	13	56.2	44.49
2	4	114.0	111.4	1	1	104.0	74.36	2	6	103.5	104.71	6	24	102.8	106.08
												9	17	108.9	98.52
												1	16	110.5	78.87
21	56	121.0	90.49	17	48	123.7	96.08	2	8	113.4	108.94	48	144	121.1	97.11
1	1	270.0	200.00									1	3	128.0	84.00
												1	1	270.0	200.00
				1	1	54.0	29.70					2	7	53.2	31.89
												3	10	57.1	39.21
				1	9	105.1	103.03					4	31	96.9	92.64
2	6	112.0	89.39	1	1	132.3	96.25	2	12	101.6	94.88	6	21	109.2	92.45
10	31	114.8	71.79	6	49	120.4	80.97	2	9	117.4	92.61	22	122	114.7	80.91
												1	5	88.2	72.27
												1	6	112.0	75.80
4	13	121.1	79.48									4	13	121.1	79.48
												1	8	48.0	47.25
												3	36	54.8	44.26
												2	72	94.2	97.60
1	11	99.6	91.62					1	25	104.0	102.96	3	55	104.9	104.31
												2	42	109.1	78.07
5	11	115.4	68.12	5	37	119.1	88.03	2	9	118.8	96.43	17	80	119.9	88.76
												2	6	57.2	35.26
1	4	92.8	67.16	3	8	100.5	49.25	2	11	94.5	70.11	5	54	97.4	67.88
												8	36	95.6	62.31
												1	1	97.5	51.45
				1	6	47.3	20.59					7	28	50.1	29.21
				1	10	106.1	53.67					6	63	103.3	68.58
1	1	100.0	56.00	32	100.8	68.40		4	44	94.9	69.72	17	132	97.5	64.83
2	6	104.9	63.37	2	9	99.2	71.30					4	15	101.5	68.12
												1	52	89.6	34.30
				1	5	37.4	29.60					5	13	45.9	34.48
												4	17	107.2	79.08
5	13	105.0	77.98	1	1	103.5	89.01	3	5	103.1	86.61	11	27	104.6	85.76
2	3	92.0	59.40	1	1	120.0	90.00					3	4	90.0	67.05
1	1	128.0	156.00									1	1	128.0	156.00
1	1	270.0	175.00									1	1	270.0	175.00
												1	6	48.2	28.06
												3	5	104.0	75.19
								1	1	62.0	44.92	2	8	93.8	63.14
												1	3	88.0	44.17

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WORKDAYS IN PAY-RO

REFINERIES—Continued.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
FILLING, PACKING, AND SHIPPING—concluded.												
Packers:				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
6 days.....	3	24	44.7	27.61	1	1	52.0	38.88				
12 days.....	2	7	87.7	74.88	2	16	107.2	80.91				
13 days.....									1	5	97.5	72.63
15 days.....												
Packers (female):												
6 days.....	1	75	39.6	13.07								
12 days.....	1	48	91.3	43.01	1	12	78.8	32.62				
13 days.....									1	40	99.9	42.96
Tank-car loaders:												
6 days.....	2	8	51.0	31.85	3	23	54.5	36.14				
7 days.....	1	2	57.3	35.75								
12 days.....	2	12	95.3	67.41	3	33	111.9	67.11				
13 days.....					1	1	9.0	5.18	7	31	104.7	61.63
14 days.....	1	1	149.0	122.18								
15 days.....												
16 days.....												
30 days.....												
Testers:												
12 days.....	1	4	81.3	65.12	1	9	93.3	50.45				
Weighers:												
6 days.....	1	1	59.0	33.21	2	13	52.2	36.06				
12 days.....	3	17	98.3	74.37					1	4	105.0	78.47
13 days.....									2	11	103.0	65.32
15 days.....												
TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.												
Brakemen:												
5 days.....					1	3	50.0	32.0				
6 days.....					2	7	59.3	39.43				
12 days.....	3	36	106.1	101.07								
13 days.....									1	2	89.0	72.58
Chauffeurs:												
6 days.....	3	21	46.5	29.74	2	5	53.5	36.97				
7 days.....												
12 days.....	3	30	99.5	78.45	3	31	114.3	69.41				
13 days.....					1	1	99.0	57.75	6	47	116.8	76.41
15 days.....												
30 days.....												
Conductors:												
5 days.....					1	1	50.0	34.00				
6 days.....	1	1	66.0	54.80								
12 days.....	2	11	110.2	127.30	1	2	61.8	42.69				
15 days.....									1	12	116.3	119.09
Engineers, railroad:												
5 days.....					1	1	70.0	53.70				
6 days.....	1	2	66.0	56.04	2	6	53.8	41.43				
12 days.....	2	21	109.9	120.96								
13 days.....												
15 days.....									1	12	142.8	146.14
Firemen:												
5 days.....					1	1	50.0	30.50				
6 days.....					1	2	65.0	40.18				
12 days.....	3	11	108.9	105.96								
13 days.....												
15 days.....									1	14	118.5	96.95
Teamsters and drivers:												
6 days.....	3	19	45.7	27.57	1	8	53.4	34.27				
12 days.....	1	4	108.7	87.97	2	118	110.6	65.04				
13 days.....									3	24	103.6	56.25
15 days.....									2	2	138.0	81.97
Trackmen:												
6 days.....												
12 days.....	1	8	101.0	74.74	1	12	44.7	27.80				
13 days.....									1	48	85.2	47.37

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued.

REFINERIES—Continued.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.
			Dolls.				Dolls.								Dolls.
1	2	80.0	66.00	1	51	69.8	41.62					4	25	45.0	28.06
2	3	123.3	71.83									5	74	79.6	53.27
												2	7	92.5	70.73
												2	3	123.3	71.83
												1	75	39.6	13.07
												2	60	88.8	40.93
												1	40	99.9	42.96
2	3	45.7	27.40	1	3	49.8	27.41					8	37	52.6	33.80
				1	7	46.3	25.23					2	9	48.7	27.57
				1	12	106.8	56.05					6	57	107.3	64.84
8	18	109.5	64.34	3	15	98.4	62.18	4	11	98.9	84.89	23	76	102.5	65.00
												1	1	149.0	122.18
15	49	119.1	72.80	12	27	121.0	76.35					27	76	119.8	74.06
1	3	121.3	103.33									1	3	121.3	103.33
1	2	240.0	167.50									1	2	240.0	167.50
												2	13	89.6	54.96
												3	14	52.7	35.86
1	1	112.0	69.44					3	10	100.2	73.57	3	17	98.3	74.37
1	1	133.0	66.50									5	15	102.3	74.60
												3	12	105.5	65.42
												1	3	50.0	32.00
												2	7	59.3	39.43
												3	36	106.1	101.07
												1	2	89.0	72.58
2	3	54.3	31.70	2	9	49.1	27.89					9	38	48.7	30.41
				1	2	84.0	35.00					1	2	84.0	35.00
				1	15	94.2	69.25					7	76	104.5	72.95
11	29	105.7	68.15	1	36	114.5	78.68					27	144	110.8	76.69
3	7	112.1	70.89	5	3	90.7	58.33	4	31	102.4	83.41	5	10	105.7	67.13
1	3	137.2	110.89									1	3	137.2	110.89
1	2	253.8	162.50									1	2	253.8	162.50
												1	1	50.0	34.00
												2	3	63.2	46.72
												2	11	110.2	127.30
												1	12	116.3	119.09
												1	1	70.0	53.70
				1	2	50.0	41.94					4	10	55.5	44.45
				1	7	105.7	127.59					3	28	108.9	122.62
				3	7	115.5	97.84	2	3	101.0	88.93	5	10	111.1	95.17
				1	2	135.3	107.25					2	14	141.7	140.58
												1	1	50.0	30.50
												1	2	65.0	40.18
												3	11	108.9	105.96
				2	5	125.0	88.86					2	5	125.0	88.86
				1	3	119.7	89.75					2	17	118.7	95.68
												4	27	48.0	29.56
												3	122	110.5	65.80
5	16	116.8	75.02	3	19	110.3	71.10	4	65	93.7	69.17	15	124	101.1	67.72
				2	5	110.4	62.19					4	7	118.3	67.84
												1	12	44.7	27.80
												1	8	101.0	74.74
2	4	104.0	74.10									3	52	86.7	48.47

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WORKDAYS IN PAY-RO

REFINERIES—Continued.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.												
Blacksmiths:				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
6 days.....	4	9	42.6	33.78	2	7	45.4	39.55				
12 days.....	2	9	102.3	111.02	2	26	97.3	71.79				
13 days.....					1	1	117.0	69.55	7	41	98.7	84.16
15 days.....					1	1	121.5	91.13				
26 days.....					1							
Boiler makers:												
6 days.....	3	102	45.8	35.69	2	76	49.3	51.64				
12 days.....	3	273	92.4	104.57	1	55	87.0	64.57				
13 days.....					2	4	112.5	69.69	6	166	89.6	80.87
14 days.....	1	2	108.0	97.42	1	1	104.0	79.96				
15 days.....					1	1	141.0	108.0	1	2	142.0	108.00
26 days.....												
Boiler makers' helpers:												
6 days.....	3	105	44.0	29.70	2	134	48.9	35.02				
12 days.....	3	365	90.4	71.44	1	251	88.2	55.04				
13 days.....					1	1	117.0	61.75	6	580	76.6	54.74
14 days.....					1	5	116.2	86.45				
15 days.....												
26 days.....												
Bricklayers and masons:												
6 days.....	4	21	44.8	40.39	2	32	47.9	49.34				
12 days.....	3	80	89.2	104.99	2	32	93.6	79.70				
13 days.....					1	1	128.0	71.97	6	68	93.9	100.57
15 days.....												
26 days.....												
Carpenters:												
6 days.....	5	35	45.5	31.83	2	48	50.9	47.44				
12 days.....	3	148	93.4	91.14	3	85	95.6	74.11				
13 days.....					2	8	117.6	69.52	7	108	81.9	67.97
15 days.....												
26 days.....												
Coopers:												
6 days.....	1	15	48.6	31.41	2	48	50.2	38.73				
12 days.....	3	77	89.2	76.74	2	16	101.9	70.11				
13 days.....					1	5	121.0	70.04	1	4	69.4	48.80
15 days.....					1	9	142.9	91.92				
Crane operators:												
6 days.....	2	3	56.3	47.63	2	4	61.9	53.98				
12 days.....	3	12	100.7	111.96	1	9	105.0	77.91				
13 days.....									3	37	120.2	99.65
15 days.....									3	8	142.8	112.86
Crane riggers:												
6 days.....					1	17	60.5	39.16				
12 days.....	3	48	91.6	75.98	1	49	93.5	64.35				
13 days.....												
Driving-machine operators:									1	1	102.5	87.13
6 days.....					1	4	54.3	34.66				
12 days.....	1	2	95.8	67.97	1	3	115.0	72.27				
Electricians:												
6 days.....	3	10	47.5	22.46	2	8	46.7	35.70				
7 days.....	1	1	56.0	50.00								
12 days.....	3	44	89.6	87.79	1	25	100.3	80.57				
13 days.....					1	2	118.3	67.28	5	24	101.4	84.07
14 days.....	1	3	113.0	94.44	1	3	112.0	93.72				
15 days.....					1	1	160.5	112.45	1	3	117.8	111.61
Helpers:												
6 days.....	4	50	47.0	28.52	2	98	51.3	34.68				
7 days.....	1	1	57.5	38.53								
12 days.....	3	311	87.6	62.49	2	157	96.0	54.21				
13 days.....									7	291	93.8	64.73
15 days.....					1	4	129.5	74.27				

1 Not including boiler makers' and pipe fitters' helpers.

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued.

REFINERIES—Continued.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.
			<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
12	39	99.6	86.40	8	23	96.9	90.01	4	12	99.96	96.70	32	116	121.5	91.13
1	1	231.0	127.66									1	1	231.0	127.66
1	9	31.5	35.50	3	9	32.9	33.07					9	196	45.9	41.75
19	89	90.6	87.69	9	176	101.6	95.06	4	94	97.2	101.06	40	529	95.3	90.24
2	2	123.5	130.32	1	2	92.0	98.50					2	3	106.7	91.60
1	4	90.5	73.50									5	7	122.3	111.66
2	8	32.1	31.97	3	15	35.1	38.20					1	4	90.5	73.50
13	107	88.8	64.67	6	372	81.9	65.94	4	142	91.8	75.94	10	262	45.6	32.98
2	3	113.7	74.45	1	62	82.3	92.77					5	988	88.7	65.20
1	2	129.0	73.25									30	1,276	86.2	64.52
2	6	33.3	46.67	2	9	40.0	43.38					1	5	116.2	86.45
17	58	86.9	108.73	8	196	80.0	89.28	2	25	95.7	121.42	2	3	113.7	74.45
1	1	120.0	80.40	1	4	19.6	31.89					1	2	129.0	73.25
1	3	29.3	49.87									10	68	44.6	45.55
3	24	35.7	39.09	3	25	38.2	31.59					6	174	87.6	95.98
19	90	88.3	81.30	10	258	97.9	87.21	4	96	83.0	79.98	34	348	85.1	96.98
2	2	114.0	89.95									2	5	114.0	89.95
1	5	147.8	149.60									1	3	29.3	49.87
												13	132	44.3	38.78
				1	13	80.6	59.03					7	296	90.9	82.69
3	6	108.5	81.51	2	11	106.8	97.57	3	33	83.5	70.55	42	560	91.0	81.05
2	2	116.5	80.75									2	2	114.0	89.95
				1	1	40.00	33.00					1	5	147.8	149.60
												3	63	49.8	36.98
												6	106	90.1	73.57
												11	59	92.6	75.18
												3	11	138.1	89.89
												5	8	57.1	48.98
												4	21	102.5	97.32
												7	50	118.8	101.00
												3	8	142.8	112.86
												1	17	60.5	39.16
												4	97	92.6	70.10
												6	90	88.6	69.06
												1	4	54.3	34.66
												2	5	107.3	70.55
												10	39	45.6	42.12
												1	1	56.0	50.00
												5	87	94.5	89.23
												23	107	101.1	91.96
												2	6	112.5	94.08
												5	11	119.4	99.85
												12	224	46.7	28.98
												1	1	57.5	38.53
												6	827	89.1	55.23
												33	1,210	96.6	67.44
												4	10	98.1	63.14
14	107	101.4	72.77	8	533	96.7	62.17	4	279	97.8	78.32				
				2	3	64.0	38.87	1	3	90.2	72.58				

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WORKDAYS IN PAY-RO

REFINERIES—Continued.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—Continued.												
Laborers:				<i>Dolls.</i>				<i>Dolls.</i>				<i>Dolls.</i>
6 days.....	5	378	47.8	27.49	2	440	51.4	29.38				
7 days.....	2	61	52.7	30.62	1	14	66.7	34.65				
12 days.....	3	1,742	94.6	66.42	3	1,141	88.0	46.95				
13 days.....					2	42	105.2	54.63	7	1,301	84.3	49.27
14 days.....	1	2	112.0	66.53								
15 days.....					1	23	84.0	42.56	4	213	104.8	68.02
16 days.....					1	1	128.0	72.00				
30 days.....												
Laborers (female):												
12 days.....					1	28	86.6	42.96				
15 days.....									1	1	108.0	62.66
Lead burners:												
6 days.....	2	3	46.3	34.72	2	2	39.2	46.11				
12 days.....	2	6	100.4	112.52	1	3	85.2	85.92				
13 days.....									2	7	104.1	92.92
15 days.....												
Machinists:												
6 days.....	4	39	47.8	39.34	2	23	57.0	53.06				
12 days.....	3	163	95.3	96.61	2	168	97.6	74.64				
13 days.....					1	2	115.0	67.09	6	137	99.4	83.17
15 days.....					1	2	146.7	122.71				
Painters:												
6 days.....	4	25	47.4	29.64	1	11	41.8	32.48				
12 days.....	3	44	90.7	73.54	2	37	85.8	57.60				
13 days.....					1	1	117.0	65.00	4	73	85.1	62.15
15 days.....					1	2	115.0	86.25				
26 days.....												
Pipe fitters:												
6 days.....	4	86	48.5	33.65		81	53.7	49.84				
7 days.....	2	3	52.3	33.72								
12 days.....	3	182	95.6	94.40	3	145	93.7	71.31				
13 days.....					1	5	89.4	49.83	7	107	110.4	106.99
14 days.....					1	4	126.0	89.65				
15 days.....					1	6	114.5	72.13	1	6	121.1	112.77
16 days.....												
30 days.....												
Pipe fitters' helpers:												
6 days.....	4	111	45.5	28.08	2	129	54.8	37.89				
7 days.....	1	1	56.0	37.23								
12 days.....	3	345	95.6	71.09	2	343	74.8	40.45				
13 days.....					1	1	112.5	59.38	7	230	99.6	73.05
14 days.....					1	6	110.7	60.09				
15 days.....					1	9	96.2	52.13	2	6	130.8	102.77
Property keepers:												
6 days.....					1	3	53.0	48.96				
12 days.....	3	22	89.8	70.56	1	16	114.2	62.76	4	20	103.4	78.17
13 days.....									1	1	117.0	89.50
15 days.....												
16 days.....												
Property keepers (female):												
12 days.....					1	1	102.0	52.99				
Tinsmiths:												
6 days.....	1	1	48.0	39.84								
12 days.....	2	11	92.5	96.73	1	10	88.0	67.90				
13 days.....									3	14	72.3	65.48
Welders:												
6 days.....	2	2	48.0	35.17	1	1	69.0	61.23				
12 days.....	3	31	91.7	82.91	1	16	91.7	64.89				
13 days.....												
15 days.....									4	35	91.9	84.75
26 days.....												

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Continued.

REFINERIES—Continued.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.
			<i>Dolls.</i>				<i>Dolls.</i>								<i>Dolls.</i>
4	77	30.6	15.89	4	306	40.4	18.81					15	1,201	46.1	25.23
												3	75	55.3	31.37
18	1,127	84.9	45.97	1	843	88.8	43.50	4	595	87.0	57.40	7	3,726	91.3	55.26
				15	2,539	92.8	49.63					46	5,604	88.7	49.67
8	113	100.0	52.03	8	144	95.6	54.21					1	2	112.0	66.53
1	4	129.3	97.88									21	493	100.1	59.13
1	33	97.1	52.83									2	5	129.1	92.70
												1	33	97.1	52.83
												1	28	86.6	42.96
												1	1	108.0	62.66
				1	1	40.0	53.33					5	6	42.9	41.62
				1	3	95.5	126.06					4	12	95.4	109.25
3	4	80.8	100.94	3	8	108.6	106.97	4	9	98.7	102.82	12	28	100.3	101.26
1	1	113.0	73.45	1	3	128.5	157.46					2	4	124.6	136.46
1	4	43.6	33.06	3	11	47.4	48.93					10	77	50.3	44.48
				1	30	102.7	118.18					6	361	97.0	88.18
15	54	107.0	91.39	10	101	110.7	107.16	4	73	101.2	101.04	36	367	104.1	94.45
2	2	119.0	95.50	2	2	120.0	102.50	1	2	110.0	89.38	6	8	123.9	102.52
1	3	34.2	22.91	1	10	35.9	20.92					7	49	43.0	28.09
				1	73	84.1	56.56					6	154	86.4	61.66
13	43	94.4	68.51	7	46	86.0	60.41	4	29	95.1	69.74	29	192	89.1	64.32
3	9	112.7	82.19									4	11	113.1	82.93
1	2	222.8	121.06									1	2	222.8	121.06
2	5	59.9	40.67	3	17	47.0	38.01					11	189	50.9	41.17
				1	1	29	84.1	84.70				2	3	52.3	33.72
19	122	104.5	78.61	12	131	106.3	83.22	4	77	104.7	102.74	7	356	93.9	84.20
												43	442	106.3	90.73
4	8	120.8	85.57	2	3	117.3	88.83					1	4	126.0	89.65
1	2	123.6	130.41									8	23	118.8	89.58
1	6	184.2	103.73									1	2	123.6	130.41
												1	6	184.2	103.73
2	45	39.6	25.29	3	97	41.8	22.27					11	382	47.0	29.59
												1	1	56.0	37.23
				1	382	96.5	71.55					6	1,070	89.3	61.43
16	227	95.4	62.89	8	849	91.1	59.96	4	361	97.6	78.26	36	1,668	94.3	66.12
												1	6	110.7	60.10
2	29	92.1	50.68	2	49	114.8	73.00					7	93	107.0	65.93
												1	3	53.0	48.96
2	2	128.5	92.84					1	1	104.0	97.85	4	38	100.1	67.28
7	20	119.0	75.24					1	1	132.0	94.88	7	23	105.6	80.30
1	1	128.0	106.66									9	22	119.5	76.78
												1	1	128.0	106.66
												1	1	102.0	52.99
				1	1	16.0	18.0					2	2	32.0	28.92
												3	21	90.4	83.00
1	1	92.0	61.64	2	15	94.8	76.12	2	2	104.0	92.05	8	32	85.4	72.01
				2	5	43.3	35.82					5	8	47.7	38.83
				1	4	100.0	122.11					5	51	92.4	80.33
12	25	92.9	83.85	5	20	96.14	88.13	3	6	102.3	102.15	24	86	93.9	86.49
1	1	120.0	80.00									1	1	120.0	80.00
1	1	13.5	10.50									1	1	13.5	10.50

TABLE C.—AVERAGE HOURS ACTUALLY WORKED AND AVERAGE EARN AND WORKDAYS IN PAY-RO

REFINERIES—Concluded.

Occupation and number of workdays in pay period.	Massachusetts, New Jersey, and New York.				Maryland, Pennsylvania, and West Virginia.				Illinois, Indiana, and Ohio.			
	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.	Number of establishments.	Number of employees.	Average hours worked.	Average earnings.
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—concluded.												
Other mechanics:				Dolls.				Dolls.				Dolls.
6 days.....	4	6	48.0	33.94	1	5	48.6	43.23				
7 days.....	1	4	56.1	39.29								
12 days.....	3	115	94.0	87.28	2	88	93.9	59.88				
13 days.....									7	134	105.2	75.48
14 days.....	1	1	64.0	62.72								
15 days.....					1	3	138.4	84.80	2	8	109.7	102.72
16 days.....												
26 days.....												
30 days.....												
GUARDING, ETC.												
Watchmen:												
6 days.....	1	22	46.4	26.48	1	28	48.3	36.51				
7 days.....	4	17	70.3	31.84	2	12	82.0	34.69				
12 days.....	3	145	94.7	75.23								
13 days.....	1	1	130.0	92.30					1	32	156.8	86.25
14 days.....	2	69	120.4	79.68	3	78	122.3	66.56				
15 days.....									6	38	141.6	77.98
16 days.....												
30 days.....												
Other employees:												
6 days.....	4	54	49.0	33.27	3	55	55.2	36.83				
7 days.....	3	56	50.6	32.68	2	12	57.2	32.45				
12 days.....	3	333	97.7	78.16	3	365	89.1	51.28				
13 days.....					2	7	86.2	54.67	7	453	97.5	63.47
14 days.....	2	71	100.6	86.84	3	46	123.1	75.00				
15 days.....					1	6	106.1	59.31	6	181	112.6	82.87
16 days.....												
30 days.....												

INGS RECEIVED BY EMPLOYEES IN EACH DISTRICT, BY OCCUPATIONS
LL PERIOD, 1920—Concluded.

REFINERIES—Concluded.

Kansas, Oklahoma, and Wyoming.				Louisiana and Texas.				California.				Total—all States.			
Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.	Number of es- tab- lish- m'ts.	Number of em- ploy- ees.	Average hours work- ed.	Average earn- ings.
			<i>Dolls.</i>				<i>Dolls.</i>								<i>Dolls.</i>
3	11	48.2	37.15	1	13	41.2	23.68					9	35	45.6	32.46
												1	4	56.1	39.29
												5	203	93.9	75.40
15	79	95.9	74.24	11	177	100.6	76.00	4	46	98.2	89.41	37	436	100.9	76.97
												1	1	64.0	62.72
7	22	113.6	75.09	3	12	109.8	89.48					13	45	113.5	81.48
1	1	128.7	107.50									1	1	128.7	107.50
1	2	151.0	92.21									1	2	151.0	92.21
1	1	270.0	200.00									1	1	270.0	200.00
												2	50	47.4	32.09
2	3	70.0	34.50	2	10	79.1	29.51					10	42	75.7	32.29
				1	56	99.4	74.74					4	201	96.0	75.09
2	9	103.1	52.60	2	4	94.1	52.03	1	31	104.0	79.35	7	77	125.6	77.84
												5	147	121.4	72.72
20	63	130.5	70.36	12	100	121.7	70.77	3	47	107.9	67.32	41	248	124.3	71.11
1	15	114.2	86.34									1	15	114.2	86.34
1	1	240.0	140.00									1	1	240.0	140.00
												10	131	51.2	34.47
1	1	65.0	40.65	1	1	53.0	21.87					7	70	51.9	32.60
												6	698	93.2	64.10
14	187	98.2	69.28	11	250	94.7	69.17	4	250	100.1	80.03	38	1,147	97.5	69.21
												5	117	110.2	82.18
17	172	117.3	75.28	10	366	103.4	73.95	3	41	114.4	88.58	37	766	109.3	77.02
1	8	119.6	92.51									1	8	119.6	92.51
1	2	210.0	106.60									1	2	210.0	106.60

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—												
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.
WELLS.																
Derrick men:																
Kansas, Montana, Oklahoma, Utah, and Wyoming..	1	1	\$0.550						1							
Arkansas, Louisiana, and Texas.....	8	775	.720						1	379	380	9		5	1	
California.....	3	115	.987									2	30	83		
Total.....	11	891	.752						2	379	380	11	30	88	1	
Cumulative per cent.....									(1)	43	85	87	90	100	100	
Drillers:																
New York, Pennsylvania, and West Virginia.....	8	207	.955							7	18	19		163		
Illinois, Indiana, Kentucky, and Ohio.....	6	184	.792						8	51	51	29	3	42		
Kansas, Montana, Oklahoma, Utah, and Wyoming..	30	847	1.173							3		17	5	272	540	\$10
Arkansas, Louisiana, and Texas.....	21	1,030	1.163									44	49	438	465	\$34
California.....	4	307	1.321											80	226	\$1
Total.....	54	2,575	1.140						8	61	69	109	57	995	1,231	\$45
Cumulative per cent.....									(1)	8	8	10	12	60	98	100
Drillers' helpers and clean-out helpers:																
New York, Pennsylvania, and West Virginia.....	6	217	.620		1		25	1	22	159	8	1				
Illinois, Indiana, Kentucky, and Ohio.....	4	27	.430				25		1		1					
Kansas, Montana, Oklahoma, Utah, and Wyoming..	16	296	.593				67	15	103	56	21	12	8	13	1	
Arkansas, Louisiana, and Texas.....	15	1,813	.677		1		5	3	84	1,523	104	22	8	63		
California.....	3	378	.862								84	286	8			
Total.....	32	2,731	.683		2		122	18	209	1,740	218	321	24	76	1	
Cumulative per cent.....					(1)		5	5	13	77	84	96	97	100	100	
Firemen:																
New York, Pennsylvania, and West Virginia.....	1	1	.598						1							
Kansas, Montana, Oklahoma, Utah, and Wyoming..	17	112	.537	4		6	32	6	19	38	7					
Arkansas, Louisiana, and Texas.....	12	966	.659			1	28	6	9	913	6	3				

California.....	2	49	.798								10	39				
Total.....	29	1,128	.651	4	7	60	12	29	951	23	42					
Cumulative per cent.....			(1)	1	6	7	7	10	94	96	100					
Gaugers:																
New York, Pennsylvania, and West Virginia.....	1	3	.556						3							
Illinois, Indiana, Kentucky, and Ohio.....	1	1	.667						1							
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	9	35	.633	1	1		1	9	18	4	1					
Arkansas, Louisiana, and Texas.....	10	65	.633			2	6	11	28	13	1	3			1	
California.....	3	19	.830							5	12	2				
Total.....	21	123	.658	1	1	2	7	23	47	22	14	5			1	
Cumulative per cent.....				1	2	3	9	28	66	84	95	99			100	
Laborers, roustabouts, and connection men:																
New York, Pennsylvania, and West Virginia.....	11	1,651	.608	4	33	385	111	492	171	455						
Illinois, Indiana, Kentucky, and Ohio.....	9	813	.506	8	19	92	65	605	24							
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	31	5,054	.572	8	6	47	287	3,032	1,611	55	8					
Arkansas, Louisiana, and Texas.....	22	3,610	.581	4	174	148	271	1,227	1,696	80	7	3				
California.....	4	785	.772						34	690	58	3				
Total.....	56	11,913	.589	24	232	672	734	5,356	3,536	1,280	73	6				
Cumulative per cent.....				(1)	2	8	14	69	89	99	100	100				
Pumpers and engineers:																
New York, Pennsylvania, and West Virginia.....	12	1,168	.624	2	4	7	39	130	944	42						
Illinois, Indiana, Kentucky, and Ohio.....	9	1,235	.518		14	39	42	1,070	70							
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	30	2,152	.527		115	454	191	904	397	90	1					
Arkansas, Louisiana, and Texas.....	23	2,021	.598	1	5	329	111	258	1,157	132	22	6				
California.....	4	626	.816							204	411	11				
Total.....	57	7,202	.582	3	138	829	383	2,362	2,568	468	434	17				
Cumulative per cent.....				(1)	2	13	19	62	87	94	100	100				
Rig builders:																
New York, Pennsylvania, and West Virginia.....	8	232	.695			12	4	35	28	133	17			3		
Illinois, Indiana, Kentucky, and Ohio.....	2	53	.568		4	10	2	14	16	4	2			1		
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	4	37	2.062						1		1			1	3	
Arkansas, Louisiana, and Texas.....	3	51	1.575									3	10	5	5	
California.....	3	59	1.412									4	11	9	2	
Total.....	19	432	.919		4	22	6	49	46	137	20	8	25	17	1	
Cumulative per cent.....					1	6	7	19	29	61	66	68	73	77	98	

¹ Less than one-half of 1 per cent.

² At \$1.50 and under \$2.

³ 33 at \$1.50 and under \$2 and 1 at \$2 and under \$2.50.

⁴ 44 at \$1.50 and under \$2 and 1 at \$2 and under \$2.50.

⁵ 7 at \$1.50 and under \$2, 11 at \$2 and under \$2.50, and 13 at \$2.50 and under \$3.

⁶ 20 at \$1.50 and under \$2, 11 at \$2 and under \$2.50, and 1 at \$2.50 and under \$3.

⁷ 62 at \$1.50 and under \$2, 22 at \$2 and under \$2.50, and 14 at \$2.50 and under \$3.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—														\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.					
WELLS—Concluded.																			
Teamsters:																			
New York, Pennsylvania, and West Virginia.....	7	34	\$0.513				3	5	26										
Illinois, Indiana, Kentucky, and Ohio.....	5	12	.490				3	1	7	1									
Kansas, Montana, Oklahoma, Utah, and Wyoming..	11	175	.555				2	23	111	39									
Arkansas, Louisiana, and Texas.....	10	201	.552			10	2	39	107	36	7								
California.....	4	76	.785								59	17							
Total.....	30	498	.583			10	10	68	251	76	66	17							
Cumulative per cent.....					2	4	18	68	83	97	100								
Tool dressers:																			
New York, Pennsylvania, and West Virginia.....	8	226	.808						2	21	23	177	3						
Illinois, Indiana, Kentucky, and Ohio.....	5	191	.675			5		3	35	83	21	44							
Kansas, Montana, Oklahoma, Utah, and Wyoming..	29	831	1.007						5	133	69	32	563	29					
Arkansas, Louisiana, and Texas.....	15	429	.959				1		13	41	70	42	227	29				*6	
California.....	4	217	.949								6	142	69						
Total.....	49	1,894	.934			5	1	3	50	150	247	338	177	859	58			*6	
Cumulative per cent.....					(1)	(1)	1	3	3	11	24	42	51	92	100			100	
Truck drivers:																			
New York, Pennsylvania, and West Virginia.....	4	25	.524				2	5	16	2									
Illinois, Indiana, Kentucky, and Ohio.....	6	18	.522				1	2	13	1	1								
Kansas, Montana, Oklahoma, Utah, and Wyoming..	22	399	.627				3	19	146	142	69	19	1						
Arkansas, Louisiana, and Texas.....	16	263	.600				2	10	109	93	48	1							
California.....	4	88	.850							4	20	57	7						
Total.....	38	793	.633				8	36	284	242	138	77	8						
Cumulative per cent.....							1	6	41	72	80	99	100						
Mechanics:																			
Carpenters—																			
New York, Pennsylvania, and West Virginia.....	6	106	.687			5	8		16	13	48	15		1					
Illinois, Indiana, Kentucky, and Ohio.....	5	64	.591				1	1	32	22	3	4	1						
Kansas, Montana, Oklahoma, Utah, and Wyoming..	17	340	.825				1	1	12	53	70	82	33	83	4			1	

Arkansas, Louisiana, and Texas.....	17	371	.809						7	93	117	66	4	73	8	13
California.....	4	106	1.161									4	22	31	49	
Total.....	38	987	.828			5	10	2	67	181	238	171	60	188	61	24
Cumulative per cent.....						1	2	2	9	27	51	68	74	93	100	100
Machinists—																
New York, Pennsylvania, and West Virginia.....	3	36	.806						1	4	8	18	4		1	
Illinois, Indiana, Kentucky, and Ohio.....	1	17	.652						1	11	5					
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	14	94	.858					1	6	15	14	21	10	22	3	2
Arkansas, Louisiana, and Texas.....	7	71	.869						2	11	10	17	12	15	4	
California.....	4	56	1.104									1	12	38	5	
Total.....	25	274	.890					1	10	41	37	57	38	75	13	22
Cumulative per cent.....								(1)	4	19	32	53	67	95	99	100
Other mechanics—																
New York, Pennsylvania, and West Virginia.....	7	50	.739				1	1	8	2	25	8	1	34		
Illinois, Indiana, Kentucky, and Ohio.....	4	19	.502			2	3	1	10	1	2					
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	18	494	.735					2	90	136	101	98	22	31	4	6
Arkansas, Louisiana, and Texas.....	15	482	.790						27	116	107	133	46	40	10	3
California.....	4	153	1.042								3	28	33	69	14	6
Total.....	36	1,198	.791			2	3	4	135	255	238	267	102	144	28	15
Cumulative per cent.....						(1)	(1)	1	12	34	54	76	84	96	99	100
Mechanics' helpers—																
New York, Pennsylvania, and West Virginia.....	5	45	.598					1	27	13	4					
Illinois, Indiana, Kentucky, and Ohio.....	1	14	.383	1	1	7	3	2								
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	14	181	.634			2		5	62	68	24	16	3	1		
Arkansas, Louisiana, and Texas.....	11	195	.655			3	1	3	37	107	27	13		4		
California.....	4	109	.867								50	24	12	23		
Total.....	29	544	.679	1	4	10	3	11	126	188	105	53	15	28		
Cumulative per cent.....				(1)	1	3	3	5	28	63	82	92	95	100		
Other employees:																
New York, Pennsylvania, and West Virginia.....	8	276	.670		2	5	17	37	20	27	166	2				
Illinois, Indiana, Kentucky, and Ohio.....	7	50	.509				3	26	10	9		1				
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	25	858	.665	4	4	20	32	25	293	204	62	73	46	64	10	21
Arkansas, Louisiana, and Texas.....	21	662	.641	8	7	13	37	40	211	226	20	34	2	26	36	2
California.....	4	226	.785				4			7	161	36	12	1		
Total.....	48	2,072	.663	13	13	38	93	128	538	473	409	146	60	91	47	23
Cumulative per cent.....				1	1	3	8	14	40	63	82	89	92	97	99	100

¹ Less than one-half of 1 per cent.² At \$1.50 and under \$2.³ 5 at \$1.50 and under \$2 and 1 at \$2 and under \$2.50.⁴ 14 at \$1.50 and under \$2 and 1 at \$2 and under \$2.50.⁵ At \$2 and under \$2.50.⁶ 2 at \$1.50 and under \$2 and 21 at \$2 and under 2.50

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—														\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.					
PIPE LINES.																			
Engineers and pumpers:																			
New Jersey, New York, Pennsylvania, and West Virginia.....	9	243	\$0.738						2	42	187	12							
Illinois, Indiana, Kentucky, and Ohio.....	10	252	.718				2	2	11	49	171	17							
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	13	452	.691				1	33	32	87	299								
Arkansas, Louisiana, and Texas.....	12	499	.724				1	4	20	76	364	30	4						
California.....	4	288	.924									143	49		96				
Total.....	40	1,734	.749				4	39	65	254	1,021	202	53		96				
Cumulative per cent.....							(1)	2	6	21	80	91	94		100				
Firemen:																			
New Jersey, New York, Pennsylvania, and West Virginia.....	9	242	.667						21	210	11								
Illinois, Indiana, Kentucky, and Ohio.....	8	156	.648			2			3	145	5		1						
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	7	192	.661				1	1	30	180									
Arkansas, Louisiana, and Texas.....	9	214	.652					8	1	190	15								
California.....	4	270	.829								132	51	85		2				
Total.....	32	1,074	.701			2	1	9	55	705	163	51	86		2				
Cumulative per cent.....						(1)	(1)	1	6	72	87	92	100		100				
Gaugers—deliverymen and oil receivers:																			
New Jersey, New York, Pennsylvania, and West Virginia.....	9	263	.746						11	96	23	131	2						
Illinois, Indiana, Kentucky, and Ohio.....	10	263	.738						19	79	107	56			1				
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	13	375	.811			2	2	6	19	145	45	24	2		130				
Arkansas, Louisiana, and Texas.....	12	338	.758						15	127	98	29	59		10				
California.....	3	64	.966								6	7	30		21				
Total.....	39	1,303	.775			2	2	7	64	447	279	247	93		162				
Cumulative per cent.....						(1)	(1)	1	6	40	61	80	88		100				

Laborers, roustabouts, etc.:

New Jersey, New York, Pennsylvania, and West

Virginia.....

Illinois, Indiana, Kentucky, and Ohio.....

Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....

Arkansas, Louisiana, and Texas.....

California.....

Total.....

Cumulative per cent.....

Linemen:

New Jersey, New York, Pennsylvania, and West

Virginia.....

Illinois, Indiana, Kentucky, and Ohio.....

Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....

Arkansas, Louisiana, and Texas.....

California.....

Total.....

Cumulative per cent.....

Line walkers:

New Jersey, New York, Pennsylvania, and West

Virginia.....

Illinois, Indiana, Kentucky, and Ohio.....

Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....

Arkansas, Louisiana, and Texas.....

California.....

Total.....

Cumulative per cent.....

Oilers:

Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....

Arkansas, Louisiana, and Texas.....

California.....

Total.....

Cumulative per cent.....

Teamsters:

New Jersey, New York, Pennsylvania, and West

Virginia.....

Illinois, Indiana, Kentucky, and Ohio.....

Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....

Arkansas, Louisiana, and Texas.....

California.....

Total.....

Cumulative per cent.....

1 Less than one-half of 1 per cent.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—														\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.			
PIPE LINES—Concluded.																		
Telegraph operators:																		
New Jersey, New York, Pennsylvania, and West Virginia.....	8	148	\$0.664							10	127	11						
Illinois, Indiana, Kentucky, and Ohio.....	7	113	.663							13	91	9						
Iowa, Kansas, Missouri, Oklahoma, and Wyoming...	8	168	.675							1	154	11	1	1				
Arkansas, Louisiana, and Texas.....	8	192	.672							2	158	31	1					
California.....	2	21	.895									6	3	7	5			
Total.....	27	642	.676							26	530	68	5	8	5			
Cumulative per cent.....										4	87	97	98	99	100			
Truck drivers:																		
New Jersey, New York, Pennsylvania, and West Virginia.....	3	5	.495				1	1	3									
Illinois, Indiana, Kentucky, and Ohio.....	4	9	.555			1			8									
Iowa, Kansas, Missouri, Oklahoma, and Wyoming...	10	119	.633		1	2		6	33	21	54	2						
Arkansas, Louisiana, and Texas.....	7	103	.612				1	5	38	41	15	3						
California.....	4	27	.814							1	15	9	1	1				
Total.....	24	263	.635		1	3	2	12	82	63	84	14	1	1				
Cumulative per cent.....						(1)	2	2	7	38	62	94	99	100	100			
Mechanics:																		
Carpenters—																		
New Jersey, New York, Pennsylvania, and West Virginia.....	6	6	.791							1	2	2			1			
Illinois, Indiana, Kentucky, and Ohio.....	6	11	.603				1		4	4	1				1			
Iowa, Kansas, Missouri, Oklahoma, and Wyoming...	10	133	.835						3	7	11	86	8	18				
Arkansas, Louisiana, and Texas.....	8	252	.880						3	22	76	65	15	51	20			
California.....	4	25	1.046									1	6	18				
Total.....	29	427	.853				1		10	34	90	154	29	89	20			
Cumulative per cent.....							(1)		3	11	32	68	74	95	100			

Machinists—														
New Jersey, New York, Pennsylvania, and West Virginia.....														
6	13	.805								4	8	1		
4	13	.762							1	7	5			
7	66	.776						8	9	10	5			
3	50	.877							4	11	7	23	4	
4	31	1.016									1	8	5	
California.....														
Total.....														
Cumulative per cent.....														
24	173	.842						8	14	52	31	37	31	
								5	13	43	61	82	100	
Other mechanics—														
New Jersey, New York, Pennsylvania, and West Virginia.....														
6	194	.546	24	1	43	29	5	36	51	3	2			
6	142	.652					1	87	15	5	3	4	26	1
9	132	.831					1	10	16	27	48	4	11	9
11	292	.780					1	14	83	51	57	20	48	11
4	170	.840							8	90	9	31	29	2
California.....														
Total.....														
Cumulative per cent.....														
30	930	.729	24	1	43	29	8	147	173	176	119	59	114	23
			3	3	7	10	11	27	46	65	77	84	96	100
Mechanics' helpers:														
New Jersey, New York, Pennsylvania, and West Virginia.....														
2	2	.477				1		1						
2	12	.821					1		1			10		
6	60	.633					1	22	16	20	1			
6	82	.625					3	21	33	18	3	2	2	
4	80	.854							1	10	61	6	2	
California.....														
Total.....														
Cumulative per cent.....														
18	236	.710				(1)	5	44	51	48	65	18	4	
							3	21	43	63	91	98	100	
Other employees:														
New Jersey, New York, Pennsylvania, and West Virginia.....														
6	57	.651				1	4	9	21	22				
5	78	.595	1			1		57	18	1				
10	74	.751		1	3		1	14	12	9	6	26	2	
9	157	.636		5	5	14	5	25	53	21	21	1	6	1
3	101	.840						1	3	33	44	12	6	2
California.....														
Total.....														
Cumulative per cent.....														
29	467	.692	1	6	8	16	10	106	107	86	71	39	14	3
			(1)	1	3	7	9	32	54	73	88	96	99	100

¹ Less than one-half of 1 per cent.² At \$1.50 and under \$2.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—													\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.				
REFINERIES.																		
REFINING.																		
Clay roasters:																		
Massachusetts, New Jersey, and New York	3	16	\$0.879							4		7	3	1	1			
Maryland, Pennsylvania, and West Virginia	5	65	.601						50	14	1							
Illinois, Indiana, and Ohio	3	24	.759							2	16	6						
Kansas, Oklahoma, and Wyoming	10	29	.647						5	22	2							
Louisiana and Texas	3	9	.683						1	7								
California	2	2	1.090							1	1					1		
Total	26	145	.676						56	43	27	13	3	1	2			
Cumulative per cent.									39	68	87	96	98	99	100			
Coal passers and ashmen:																		
Massachusetts, New Jersey, and New York	5	137	.745						12	28	72	7	18					
Maryland, Pennsylvania, and West Virginia	1	84	.577						78	5		1						
Illinois, Indiana, and Ohio	4	282	.644						102	117	63							
Louisiana, and Texas	1	158	.473					157	1									
Total	11	661	.620					157	193	150	135	8	18					
Cumulative per cent.								24	63	76	96	97	100					
Engineers and chillermen:																		
Massachusetts, New Jersey, and New York	8	85	.939							15	12	3	18	33	4			
Maryland, Pennsylvania, and West Virginia	8	100	.750					3	13	9	55	1	11	8				
Illinois, Indiana, and Ohio	6	51	.826						1	14	7	11	1	17				
Kansas, Oklahoma, and Wyoming	16	116	.745			3			3	22	61	21	3	3				
Louisiana and Texas	5	73	.831							8	23	28	10	1	3			
California	2	7	.954										6	1				
Total	45	432	.811			3		3	17	68	158	64	49	63	7			
Cumulative per cent.						1		1	6	21	68	72	84	98	100			
Filterers:																		
Massachusetts, New Jersey, and New York	2	7	.990										4	3				
Maryland, Pennsylvania, and West Virginia	3	36	.647						8	24	4							

Kansas, Oklahoma, and Wyoming.....	7	23	.636				1	3	15	4							
Louisiana and Texas.....	6	18	.780						7	4	4				3		
Total.....	18	84	.701				1	11	46	12	4	4	6				
Cumulative per cent.....							1	14	69	83	88	93	100				
Firemen and assistant engineers:																	
Massachusetts, New Jersey, and New York.....	8	905	.820				3	61	108	207	22	495	9				
Maryland, Pennsylvania, and West Virginia.....	9	544	.692				1	38	366	69	4	66					
Illinois, Indiana, and Ohio.....	7	791	.708					3	162	601	23	2					
Kansas, Oklahoma, and Wyoming.....	28	369	.708					35	160	92	79		3				
Louisiana and Texas.....	24	797	.762					31	316	174	14	255	7				
California.....	4	126	.861						35	17	74						
Total.....	80	3,532	.756				4	168	1,112	1,178	159	892	19				
Cumulative per cent.....							(1)	6	36	70	74	99	100				
Gaugers:																	
Massachusetts, New Jersey, and New York.....	6	20	.694					8	4	2	3	3					
Maryland, Pennsylvania, and West Virginia.....	2	4	.602					3		1							
Illinois, Indiana, and Ohio.....	3	15	.681						7	7	1						
Kansas, Oklahoma, and Wyoming.....	18	55	.655			1		9	37	6	2						
Louisiana and Texas.....	19	120	.696					17	50	35	5	11	2				
California.....	4	20	.781						16	3	3	1					
Total.....	52	234	.691			1		37	98	67	14	15	2				
Cumulative per cent.....						(1)		16	68	87	93	99	100				
Molders:																	
Massachusetts, New Jersey, and New York.....	4	68	.754					7	5	23	30	2	1				
Maryland, Pennsylvania, and West Virginia.....	1	9	.745						3	4		2					
Illinois, Indiana, and Ohio.....	2	35	.743					2	3	30							
Kansas, Oklahoma, and Wyoming.....	2	10	.599					6	4								
Louisiana and Texas.....	4	23	.658					2	16	5							
California.....	1	5	.827						1	4							
Total.....	14	150	.727					17	31	63	34	4	1				
Cumulative per cent.....								11	32	74	97	99	100				
Molders (female):																	
Illinois, Indiana, and Ohio.....	2	8	.606			2		1	4	1							
Cumulative per cent.....						25		38	88	100							
Oilers:																	
Massachusetts, New Jersey, and New York.....	4	21	.880					4			4	10	3				
Maryland, Pennsylvania, and West Virginia.....	3	28	.692						21	7							
Kansas, Oklahoma, and Wyoming.....	1	3	.550					3									
Louisiana and Texas.....	1	2	.633						2								
Total.....	9	54	.752					7	23	7	4	10	3				
Cumulative per cent.....								13	66	69	76	94	100				

¹ Less than one-half of 1 per cent.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—													\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.				
REFINERIES—Continued.																		
REFINING—continued.																		
Pressmen:																		
Massachusetts, New Jersey, and New York	6	128	\$0.862					3	1	9	22	3	89	1				
Maryland, Pennsylvania, and West Virginia	6	58	.803						4	16	5	10	11	12				
Illinois, Indiana, and Ohio	6	111	.800							8	6	94	3					
Kansas, Oklahoma, and Wyoming	9	41	.606						10	29	2							
Louisiana and Texas	4	46	.744							4	37	2	3					
Total	31	384	.792					3	15	66	72	109	106	13				
Cumulative per cent								1	6	22	41	69	97	100				
Press runners:																		
Massachusetts, New Jersey, and New York	3	11	.697						5		3	3						
Maryland, Pennsylvania, and West Virginia	1	8	.684							8								
Total	4	19	.692						5	8	3	3						
Cumulative per cent									26	68	84	100						
Pumpmen:																		
Massachusetts, New Jersey, and New York	8	352	.822						9	64	107	35	90	47				
Maryland, Pennsylvania, and West Virginia	8	130	.718						7	47	53	15	8					
Illinois, Indiana, and Ohio	6	100	.887						1	21	11	5	6	56				
Kansas, Oklahoma, and Wyoming	23	179	.673					1	35	84	38	14	4	3				
Louisiana and Texas	21	226	.778			1			6	71	58	46	21	22	1			
California	4	100	.912								9	14	70	7				
Total	70	1,087	.789			1		1	58	287	276	129	199	135	1			
Cumulative per cent						(1)		(1)	6	82	87	99	100	100				
Pumpmen's helpers:																		
Massachusetts, New Jersey, and New York	6	131	.821						2	47	5	14	57	6				
Maryland, Pennsylvania, and West Virginia	4	125	.642						46	52	23	4						
Illinois, Indiana, and Ohio	2	79	.864								5	71	3					
Kansas, Oklahoma, and Wyoming	10	51	.669						7	35	5		4					

Louisiana and Texas	5	44	.653							37	7						
California	2	17	.893								1	5	11				
Total	29	447	.746						55	171	46	94	75	6			
Cumulative per cent.									12	51	31	82	99	100			
Repairmen:																	
Massachusetts, New Jersey, and New York	4	18	.882						1	1	2	8	5	2			
Maryland, Pennsylvania, and West Virginia	2	5	.675						1	1	3						
Kansas, Oklahoma, and Wyoming	3	11	.619						1	10	1						
Louisiana and Texas	2	2	.865								1		1				
Total	11	36	.771						2	12	6	8	6	2			
Cumulative per cent.									6	39	56	78	94	100			
Retort, acid, and kettle men:																	
Massachusetts, New Jersey, and New York	4	28	.726					1	3	12	6		2	4			
Maryland, Pennsylvania, and West Virginia	4	14	.706					1		5	5	3					
Illinois, Indiana, and Ohio	1	23	1.040											23			
Louisiana and Texas	4	19	.723							4	14		1				
California	1	1	.939										1				
Total	14	85	.798					2	3	21	25	3	4	27			
Cumulative per cent.								2	6	51	60	64	68	100			
Still inspectors:																	
Massachusetts, New Jersey, and New York	3	13	1.083										4	7	2		
Maryland, Pennsylvania, and West Virginia	1	6	.844								1	5					
Illinois, Indiana, and Ohio	1	4	.770								4						
Louisiana and Texas	1	2	.950										2				
Total	6	25	.972								5	5	6	7	2		
Cumulative per cent.											20	40	64	92	100		
Stillmen:																	
Massachusetts, New Jersey, and New York	8	254	.997							19	13	45	55	118	4		
Maryland, Pennsylvania, and West Virginia	9	119	.819						6	10	55	8	24	16			
Illinois, Indiana, and Ohio	7	203	.916								40	21	33	109			
Kansas, Oklahoma, and Wyoming	28	255	.819							27	89	80	25	30			
Louisiana and Texas	24	315	.916					1	4	7	52	156	5	91	1		
California	4	59	.992								1	7	18	33			
Total	80	1,205	.905					(1)	12	63	250	317	160	397	5		
Cumulative per cent.									1	53	87	53	67	100	100		
Stillmen's assistants, chargers, and headers-up:																	
Massachusetts, New Jersey, and New York	7	206	.859							12	97	27	38	32			
Maryland, Pennsylvania, and West Virginia	5	179	.730						2	61	83	18	11	4			
Illinois, Indiana, and Ohio	6	315	.836						1	30	27	248	9				

¹ Less than one-half of 1 per cent.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—													
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.	
REFINERIES—Continued.																	
REFINING—concluded.																	
Stillmen's assistants, chargers, and headers-up—Concld.	23	276	\$0.765						8	65	141	1	61				
Kansas, Oklahoma, and Wyoming	14	325	.793				2		3	76	141	6	29	68			
Louisiana and Texas																	
California	4	43	.854								14	13	16				
Total	59	1,344	.799				2		14	244	503	313	164	104			
Cumulative per cent.							(1)		1	19	57	80	92	100			
Sweatermen:																	
Massachusetts, New Jersey, and New York	5	42	.891							5	6	2	24	5			
Maryland, Pennsylvania, and West Virginia	4	17	.716						4	4	5		4				
Illinois, Indiana, and Ohio	6	25	.831							8	1	8	2	6			
Kansas, Oklahoma, and Wyoming	6	16	.637							12	4						
Louisiana and Texas	4	18	.783							4	10		4				
California	1	5	.911										5				
Total	26	123	.806						4	33	26	10	39	11			
Cumulative per cent.									3	30	51	59	91	100			
Testers:																	
Massachusetts, New Jersey, and New York	2	11	.580				4		1	4	1			1			
Maryland, Pennsylvania, and West Virginia	2	26	.579				2	1	14	9							
Illinois, Indiana, and Ohio	3	15	.596				1	3	5	2	4						
Kansas, Oklahoma, and Wyoming	13	34	.684						6	17	5	5	1				
Louisiana and Texas	8	53	.597					8	14	23	8						
Total	28	139	.615				7	12	40	55	18	5	1	1			
Cumulative per cent.							5	14	42	82	95	99	99	100			
Testers (female):																	
Maryland, Pennsylvania, and West Virginia	1	5	.560						5								
Cumulative per cent.									100								

Testers' assistants:												
Massachusetts, New Jersey, and New York	1	1	.865							1		
Maryland, Pennsylvania, and West Virginia	1	8	.410		2	4		2				
Illinois, Indiana, and Ohio	1	6	.780					1	4	2	3	
Kansas, Oklahoma, and Wyoming	5	16	.560					1	11	1		
Louisiana and Texas	1	4	.320					2				
Total	9	35	.574		2	4		3	14	6	2	4
Cumulative per cent					6	17		26	66	83	89	100
Treaters:												
Massachusetts, New Jersey, and New York	8	32	.933					1	1	7	6	1
Maryland, Pennsylvania, and West Virginia	9	41	.790					6	5	15	2	6
Illinois, Indiana, and Ohio	7	28	.913						4	3	3	2
Kansas, Oklahoma, and Wyoming	25	63	.759					1	8	36	13	5
Louisiana and Texas	20	57	.811						11	14	24	3
California	4	14	.982							1	6	6
Total	73	235	.831					8	29	76	49	23
Cumulative per cent								8	3	16	48	69
Treaters' helpers:												
Massachusetts, New Jersey, and New York	7	38	.824					2	8	7	9	6
Illinois, Indiana, and Ohio	5	35	.808						3	11	16	5
Kansas, Oklahoma, and Wyoming	12	37	.653		1	1		10	11	13	1	
Louisiana and Texas	8	60	.718					6	21	22	2	6
California	4	21	.872							7	3	11
Total	36	191	.757		1	1		18	43	60	31	28
Cumulative per cent					1	1		10	33	64	81	96
Water purifiers:												
Massachusetts, New Jersey, and New York	1	5	.819								5	
Maryland, Pennsylvania, and West Virginia	1	6	.677						6			
Kansas, Oklahoma, and Wyoming	4	13	.656					3	5	5		
Total	6	24	.695					3	11	5	5	
Cumulative per cent								15	68	79	100	
Water tenders:												
Massachusetts, New Jersey, and New York	5	99	.967					1	2	6	18	2
Maryland, Pennsylvania, and West Virginia	3	59	.777						2	37	12	8
Illinois, Indiana, and Ohio	6	42	.899						11		6	1
Kansas, Oklahoma, and Wyoming	6	22	.755					6	4	1		11
Louisiana and Texas	5	37	.739					1	13	19	13	7
California	3	34	.943							2	7	25
Total	28	293	.872					8	32	56	56	47
Cumulative per cent								8	14	83	92	100

¹ Less than one-half of 1 per cent.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—												
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.

REFINERIES—Continued.																	
FILLING, PACKING, AND SHIPPING.																	
Branders and painters:																	
Massachusetts, New Jersey, and New York.....	4	32	\$0.808						1	5	4	20	2				
Maryland, Pennsylvania, and West Virginia.....	3	28	.561					1	24	2	1						
Illinois, Indiana, and Ohio.....	2	13	.660						7		4	2					
Kansas, Oklahoma, and Wyoming.....	1	4	.724							1	3						
Louisiana and Texas.....	3	8	.490			1		4	3								
California.....	2	11	.741								10	1					
Total.....	15	96	.675			1		5	35	8	22	23	2				
Cumulative per cent.....						1		6	43	51	74	98	100				
Branders and painters (female):																	
Maryland, Pennsylvania, and West Virginia.....	1	1	.528						1								
Cumulative per cent.....									100								
Fillers:																	
Massachusetts, New Jersey, and New York.....	7	36	.746						4	10	10	9		3			
Maryland, Pennsylvania, and West Virginia.....	6	51	.603				1	3	22	21	1	3					
Illinois, Indiana, and Ohio.....	5	43	.616			8	3	1	10	10	1	10					
Kansas, Oklahoma, and Wyoming.....	3	7	.598						1	6							
Louisiana and Texas.....	8	57	.629		2		1	3	13	24	5	3	6				
California.....	4	44	.734								42	2					
Total.....	33	238	.655		2	8	5	7	50	71	59	27	6	3			
Cumulative per cent.....					1	4	6	9	30	60	85	96	99	100			
Fillers (female):																	
Illinois, Indiana, and Ohio.....	1	52	.383			44	8										
Cumulative per cent.....						85	100										
Inspectors:																	
Massachusetts, New Jersey, and New York.....	4	5	.858							1	1	1	1	1			
Maryland, Pennsylvania, and West Virginia.....	4	20	.708						2	10	3	5					

Illinois, Indiana, and Ohio.....	2	8	.929									8					
Kansas, Oklahoma, and Wyoming.....	8	18	.748						2	6	5	4			1		
Louisiana and Texas.....	3	7	.795								2	5					
California.....	3	5	.840								3	1			1		
Total.....	24	63	.778						4	17	14	16		9	3		
Cumulative per cent.....									6	33	56	81		95	100		
Nailers:																	
Massachusetts, New Jersey, and New York.....	3	9	.653						6	1		2					
Maryland, Pennsylvania, and West Virginia.....	1	2	.596						1	1							
Illinois, Indiana, and Ohio.....	1	7	.669						1	6							
California.....	1	1	.725								1						
Total.....	6	19	.657						8	8		1	2				
Cumulative per cent.....									42	84		89	100				
Nailers (female):																	
Maryland, Pennsylvania, and West Virginia.....	1	3	.502						2	1							
Cumulative per cent.....									67	100							
Packers:																	
Massachusetts, New Jersey, and New York.....	5	31	.670							23	4			4			
Maryland, Pennsylvania, and West Virginia.....	3	17	.755						6		2	3		4	2		
Illinois, Indiana, and Ohio.....	1	5	.745								5						
Kansas, Oklahoma, and Wyoming.....	3	5	.679						1	2	1	1					
Louisiana and Texas.....	1	51	.596				2	18	1	29	1						
Total.....	13	109	.662				2	18	8	54	13	4	8	2			
Cumulative per cent.....							2	18	26	75	87	91	98	100			
Packers (female):																	
Massachusetts, New Jersey, and New York.....	2	123	.385	1	73		1	48									
Maryland, Pennsylvania, and West Virginia.....	1	12	.414			2	10										
Illinois, Indiana, and Ohio.....	1	40	.430			11	20	8	1								
Total.....	4	175	.398	1	73	13	31	56	1								
Cumulative per cent.....				1	42	50	67	99	100								
Tank-car loaders:																	
Massachusetts, New Jersey, and New York.....	6	23	.676						6	9	6	2					
Maryland, Pennsylvania, and West Virginia.....	7	57	.625						19	33	5						
Illinois, Indiana, and Ohio.....	7	31	.589			9			12	2	7		1				
Kansas, Oklahoma, and Wyoming.....	27	75	.617				2		27	36	7	3					
Louisiana and Texas.....	18	64	.598					1	29	27	7						
California.....	4	11	.859								4	4	2	1			
Total.....	69	261	.625			9	2	1	93	107	36	9	3	1			
Cumulative per cent.....						3	4	5	40	81	95	98	100	100			

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—													
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.	
REFINERIES—Continued.																	
FILLING, PACKING, AND SHIPPING—concluded.																	
Testers:																	
Massachusetts, New Jersey, and New York	1	4	\$0.801								2	2					
Maryland, Pennsylvania, and West Virginia	1	9	.540				1										
Total	2	13	.613				1		8		2	2					
Cumulative per cent.							8		69		85	100					
Weighers:																	
Massachusetts, New Jersey, and New York	4	18	.746						2	5	7	2			2		
Maryland, Pennsylvania, and West Virginia	2	13	.691						4	3	1	5					
Illinois, Indiana, and Ohio	2	15	.664							12	1	2					
Kansas, Oklahoma, and Wyoming	2	2	.560						1	1							
California	3	10	.734								9	1					
Total	13	58	.703						7	21	18	10			2		
Cumulative per cent.									12	48	79	97			100		
TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.																	
Brakemen:																	
Massachusetts, New Jersey, and New York	3	36	.953							3	9	2		7	14		1
Maryland, Pennsylvania, and West Virginia	2	10	.658						1	8	1						
Illinois, Indiana, and Ohio	1	2	.815									2					
Total	6	48	.886						1	11	10	4		7	14		1
Cumulative per cent.									2	25	46	54		69	98		100
Chauffeurs:																	
Massachusetts, New Jersey, and New York	6	51	.727						8	19	14	6		3	1		
Maryland, Pennsylvania, and West Virginia	6	37	.618						14	20	3						
Illinois, Indiana, and Ohio	6	47	.654						11	16	19	1					
Kansas, Oklahoma, and Wyoming	18	44	.650					1	10	20	8	5					
Louisiana and Texas	11	65	.671				2	1	5	29	27			1			

California.....	4	31	.815								10	21				
Total.....	51	275	.681				2	2	48	104	81	33	4	1		
Cumulative per cent.....							1	1	19	57	86	98	100	100		
Conductors:																
Massachusetts, New Jersey, and New York.....	3	12	1.128									1		10	1	
Maryland, Pennsylvania, and West Virginia.....	1	3	.687							2	1					
Illinois, Indiana, and Ohio.....	1	12	1.024										4	8		
Total.....	5	27	1.033							2	1	1	4	18	1	
Cumulative per cent.....										7	11	15	30	96	100	
Engineers, railroad:																
Massachusetts, New Jersey, and New York.....	3	23	1.078									2	8	8	5	
Maryland, Pennsylvania, and West Virginia.....	2	7	.770							1	3	3				
Illinois, Indiana, and Ohio.....	1	12	1.024										1	11		
Louisiana and Texas.....	6	18	.980							2	3	4	1	8		
California.....	2	3	.881									2	1			
Total.....	14	63	.996							3	6	11	11	27	5	
Cumulative per cent.....										6	14	32	49	92	100	
Firemen:																
Massachusetts, New Jersey, and New York.....	3	11	.973								1	2	6	2		
Maryland, Pennsylvania, and West Virginia.....	1	3	.615						1	2						
Illinois, Indiana, and Ohio.....	1	14	.818								1	12		1		
Louisiana and Texas.....	3	8	.726						1	1	6					
Total.....	8	36	.828						2	3	8	14	6	3		
Cumulative per cent.....									6	14	36	75	92	100		
Teamsters and drivers:																
Massachusetts, New Jersey, and New York.....	4	23	.639					3	2	14	3			1		
Maryland, Pennsylvania, and West Virginia.....	3	126	.591						78	45	1	1	1			
Illinois, Indiana, and Ohio.....	5	26	.547					1	14	11						
Kansas, Oklahoma, and Wyoming.....	5	16	.642						8		7			1		
Louisiana and Texas.....	5	24	.627						4	19	1					
California.....	4	65	.738							5	56	4				
Total.....	26	280	.630					4	106	94	68	5	1	2		
Cumulative per cent.....								1	39	73	97	99	99	100		
Trackmen:																
Massachusetts, New Jersey, and New York.....	1	8	.740								8					
Maryland, Pennsylvania, and West Virginia.....	1	12	.622							12						
Illinois, Indiana, and Ohio.....	1	48	.556						47				1			
Kansas, Oklahoma, and Wyoming.....	2	4	.713							1	3					
Total.....	5	72	.590						47	13	11		1			
Cumulative per cent.....									65	83	99		100			

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—												\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.					
REFINERIES—Continued.																		
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.																		
Blacksmiths:																		
Massachusetts, New Jersey, and New York	6	18	\$0.940							3	3	1	6	3	2			
Maryland, Pennsylvania, and West Virginia	6	35	.761					1	3	5	9	13	4					
Illinois, Indiana, and Ohio	7	41	.853							1	12	4	21	3				
Kansas, Oklahoma, and Wyoming	13	40	.859						1	4	2	23	7	3				
Louisiana and Texas	11	33	.926							1	6	5	10	11				
California	4	12	.967									2	4	6				
Total	47	179	.867					1	4	14	32	48	52	26	2			
Cumulative per cent.								1	3	11	28	55	84	99	100			
Boiler makers:																		
Massachusetts, New Jersey, and New York	6	377	1.035					2	8	11	42	32	33	229	20			
Maryland, Pennsylvania, and West Virginia	6	137	.908					1	2	5	47	20	20	40	2			
Illinois, Indiana, and Ohio	7	168	.901							15	7	37	93	16				
Kansas, Oklahoma, and Wyoming	23	104	.977								12	29	27	30	5		1	
Louisiana and Texas	14	273	1.011							1	9	63	74	107	19			
California	4	94	1.039									2	12	79	1			
Total	60	1,153	.991					3	10	32	117	183	259	501	47		1	
Cumulative per cent.								(1)	1	4	14	30	52	96	100		100	
Boiler makers' helpers:																		
Massachusetts, New Jersey, and New York	6	470	.764					3	64	54	175	135	39					
Maryland, Pennsylvania, and West Virginia	4	391	.657				1	22	112	141	95	19	1					
Illinois, Indiana, and Ohio	6	580	.714						81	37	352	85	25					
Kansas, Oklahoma, and Wyoming	18	120	.741						2	50	30	18	13	7				
Louisiana and Texas	10	833	.775		1			1	13	348	204	170	64	25	5		2	
California	4	142	.827								40	88	14					
Total	48	2,536	.741		1		1	26	272	630	896	515	156	32	5		2	
Cumulative per cent.					(1)		(1)	1	12	37	27	92	98	100	100		100	
Bricklayers and masons:																		
Massachusetts, New Jersey, and New York	7	101	1.118							1	1		20	78	1			

Maryland, Pennsylvania, and West Virginia.....	5	65	.935					1		9	30	2	15	8	
Illinois, Indiana, and Ohio.....	6	68	1.071						2	2	7		47	10	
Kansas, Oklahoma, and Wyoming.....	20	68	1.275						1		3	1	18	30	15
Louisiana and Texas.....	12	271	1.125					1	1		13	6	225	14	11
California.....	2	25	1.269									1	2	22	
Total.....	52	598	1.115					2	5	12	53	30	385	85	26
Cumulative per cent.....								(1)	1	3	12	17	81	96	100
Carpenters:															
Massachusetts, New Jersey, and New York.....	8	183	.926						24	13	8	68	70		
Maryland, Pennsylvania, and West Virginia.....	7	141	.818					7	8	59	44	3	20		
Illinois, Indiana, and Ohio.....	7	108	.830					1	15	9	53	29	1		
Kansas, Oklahoma, and Wyoming.....	25	121	.956						4	14	28	2	66	7	
Louisiana and Texas.....	14	346	.895						5	50	116	130	44	1	
California.....	4	96	.964								10	44	42		
Total.....	65	995	.894					8	56	145	259	276	243	8	
Cumulative per cent.....								1	6	21	47	75	99	100	
Coopers:															
Massachusetts, New Jersey, and New York.....	4	92	.825					2	28	10	15	30	7		
Maryland, Pennsylvania, and West Virginia.....	6	78	.727		1		1	13	21	18	15	3	5		1
Illinois, Indiana, and Ohio.....	1	4	.703					1		3					
Kansas, Oklahoma, and Wyoming.....	5	8	.737					1	2	1	4				
Louisiana and Texas.....	4	24	.815				2			12	2	7	1		
California.....	3	33	.845							13	14	2	4		
Total.....	23	239	.788		1		3	17	51	57	50	42	17		1
Cumulative per cent.....					(1)		2	9	30	54	75	92	100		100
Crane operators:															
Massachusetts, New Jersey, and New York.....	5	15	1.058							2	1	2	7	3	
Maryland, Pennsylvania, and West Virginia.....	3	13	.782						4	2	5	1	1		
Illinois, Indiana, and Ohio.....	5	45	.822						2	16	25	2			
Kansas, Oklahoma, and Wyoming.....	2	5	.957							1		3	1		
Louisiana and Texas.....	2	8	.877							2	3	3			
California.....	1	1	.982									1			
Total.....	18	87	.869						6	23	34	12	9	3	
Cumulative per cent.....									7	33	72	86	97	100	
Crane riggers:															
Massachusetts, New Jersey, and New York.....	3	48	.830							12	32	3	1		
Maryland, Pennsylvania, and West Virginia.....	2	66	.678					4	45	17					
Illinois, Indiana, and Ohio.....	1	1	.850								1				
Kansas, Oklahoma, and Wyoming.....	1	1	.610												
Louisiana and Texas.....	1	11	.591					5	6						
California.....	3	77	.894							51	22	3	1		
Total.....	11	204	.758					9	52	80	55	6	2		
Cumulative per cent.....								4	30	69	96	99	100		

¹ Less than one-half of 1 per cent.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—													\$1.25 and under \$1.50.	\$1.50 and over.
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.				
REFINERIES—Continued.																		
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—CON.																		
Driving-machine operators:																		
Massachusetts, New Jersey, and New York	1	2	\$0.710							1	1	1						
Maryland, Pennsylvania, and West Virginia	2	7	.634							1	6							
Total	3	9	.649							1	7	1						
Cumulative per cent.										11	79	100						
Electricians:																		
Massachusetts, New Jersey, and New York	7	58	.919							1	7	7	14	10	19			
Maryland, Pennsylvania, and West Virginia	5	39	.783							2	2	19	14	2				
Illinois, Indiana, and Ohio	6	27	.842								4	4	3	16				
Kansas, Oklahoma, and Wyoming	11	30	.978								3	2	2	5	16	2		
Louisiana and Texas	9	68	.976									3	19	21	24	1		
California	4	29	.979										4	5	20			
Total	42	251	.919							3	16	35	56	59	79	3		
Cumulative per cent.										1	8	22	44	67	99	100		
Helpers: 12																		
Massachusetts, New Jersey, and New York	7	362	.699					3	51	85	205	14	4					
Maryland, Pennsylvania, and West Virginia	5	259	.608					1	154	81	22	1						
Illinois, Indiana, and Ohio	7	291	.690					1	32	39	214	5						
Kansas, Oklahoma, and Wyoming	16	122	.710						7	54	37	21	3					
Louisiana and Texas	13	956	.604	2	1	5	103	131	218	279	159	49	5	4				
California	4	282	.801								165	114	3					
Total	52	2,272	.662	2	1	5	103	136	462	538	802	204	15	4				
Cumulative per cent.				(1)	(1)	(1)	6	11	51	55	90	99	100	100				
Laborers:																		
Massachusetts, New Jersey and New York	8	2,183	.677			2	8	17	548	983	451	121	43	10				
Maryland, Pennsylvania, and West Virginia	8	1,661	.542	1	2	3	16	279	1,144	195	14	4	2	1				
Illinois, Indiana, and Ohio	7	1,514	.593			1	1		842	498	169	3						
Kansas, Oklahoma, and Wyoming	28	1,354	.539				39	29	1,126	121	27	11	1					

Louisiana and Texas.....	23	3,832	.520	9	19	17	649	738	1,855	464	64	13	1	2	1	.....
California.....	4	595	.660		2				15	522	50	4		2		.....
Total.....	78	11,139	.575	10	23	23	713	1,063	5,530	2,783	775	156	47	15	1	.....
Cumulative per cent.....				(1)	(1)	1	7	16	66	91	98	99	100	100	100	.....
Laborers (female):																
Maryland, Pennsylvania, and West Virginia.....	1	28	.496		1	2		5	20							.....
Illinois, Indiana, and Ohio.....	1	1	.580						1							.....
Total.....	2	29	.499		1	2		5	21							.....
Cumulative per cent.....					3	10		28	100							.....
Lead burners:																
Massachusetts, New Jersey, and New York.....	4	9	.996							2		1	2	3	1	.....
Maryland, Pennsylvania, and West Virginia.....	3	5	1.076										1	4		.....
Illinois, Indiana, and Ohio.....	2	7	.893								1	2	2	2		.....
Kansas, Oklahoma, and Wyoming.....	4	5	1.130							1			1		2	1
Louisiana and Texas.....	6	15	1.123									1	4	4	6	.....
California.....	4	9	1.042							1				8		.....
Total.....	23	50	1.045							4	1	4	10	21	9	1
Cumulative per cent.....										8	10	18	38	80	98	100
Machinists:																
Massachusetts, New Jersey, and New York.....	7	202	.977						1	7	13	41	29	110	1	.....
Maryland, Pennsylvania, and West Virginia.....	6	195	.733						3	40	51	76	20	5		.....
Illinois, Indiana, and Ohio.....	6	137	.837						6	8	31	20	68	4		.....
Kansas, Oklahoma, and Wyoming.....	18	60	.846						1	7	14	14	15	9		.....
Louisiana and Texas.....	15	144	1.010							2	8	20	45	64	4	1
California.....	4	75	.994							1		11	15	47	1	.....
Total.....	56	813	.905						11	65	117	182	192	239	6	1
Cumulative per cent.....									1	9	24	46	70	99	100	100
Painters:																
Massachusetts, New Jersey, and New York.....	7	69	.744						3	21	32	6	7			.....
Maryland, Pennsylvania, and West Virginia.....	5	51	.685						7	22	21	1				.....
Illinois, Indiana, and Ohio.....	4	73	.730						6	3	50	14				.....
Kansas, Oklahoma, and Wyoming.....	18	57	.717						9	18	15	9	2	4		.....
Louisiana and Texas.....	9	129	.677		1		3	1	5	88	17	10	2	2		.....
California.....	4	29	.733							21	4		3	1		.....
Total.....	47	408	.710		1		3	1	30	173	139	40	14	7		.....
Cumulative per cent.....					(1)		1	1	9	51	85	95	98	100		.....
Pipe fitters:																
Massachusetts, New Jersey, and New York.....	7	271	.891						6	50	26	34	70	84	1	.....
Maryland, Pennsylvania, and West Virginia.....	7	241	.809				1		13	36	76	69	16	30		.....
Illinois, Indiana, and Ohio.....	7	113	.967							9	9	17	19	59		.....
Kansas, Oklahoma, and Wyoming.....	25	143	.743				1		12	44	32	38	9	7		.....

¹ Less than one-half of 1 per cent.

¹² Not including boiler makers' and pipe fitters' helpers.

TABLE D.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR, BY OCCUPATIONS AND DISTRICTS, 1920—Concluded.

Occupation and district.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose classified earnings per hour were—												
				Under 30 cents.	30 and under 35 cents.	35 and under 40 cents.	40 and under 45 cents.	45 and under 50 cents.	50 and under 60 cents.	60 and under 70 cents.	70 and under 80 cents.	80 and under 90 cents.	90 cents and under \$1.	\$1 and under \$1.25.	\$1.25 and under \$1.50.	\$1.50 and over.
REFINERIES—Concluded.																
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—CON.																
Pipe fitters—Concluded.																
Louisiana and Texas.....	18	180	\$0.821					1		31	57	45	29	17		
California.....	4	77	.981									3	36	38		
Total.....	68	1,025	.855				2	1	31	170	200	206	179	235	1	
Cumulative per cent.....							(1)	(1)	3	20	39	60	77	100	100	
Pipe fitters' helpers:																
Massachusetts, New Jersey, and New York.....	7	457	.712						78	98	192	83	6			
Maryland, Pennsylvania, and West Virginia.....	6	488	.581			2	2	103	232	94	55					
Illinois, Indiana, and Ohio.....	7	236	.734						33	54	64	78	6	1		
Kansas, Oklahoma, and Wyoming.....	19	301	.646				1		73	157	57	13				
Louisiana and Texas.....	12	1,377	.671				1	25	142	867	275	57	6	3	1	
California.....	4	361	.802						1		224	121	12	3		
Total.....	55	3,220	.685			2	4	128	559	1,270	867	352	30	7	1	
Cumulative per cent.....						(1)	(1)	4	22	61	88	99	100	100	100	
Property keepers:																
Massachusetts, New Jersey, and New York.....	3	22	.786						1	2	11	5	3			
Maryland, Pennsylvania, and West Virginia.....	2	19	.608						15	1		2		1		
Illinois, Indiana, and Ohio.....	4	21	.756					1	1	7	4	4	3	1		
Kansas, Oklahoma, and Wyoming.....	9	23	.649						6	13	1	3				
California.....	2	2	.830								1		1			
Total.....	20	87	.698					1	23	23	17	14	7	2		
Cumulative per cent.....								1	28	54	74	90	98	100		
Property keepers (female):																
Maryland, Pennsylvania, and West Virginia.....	1	1	.520						1							
Cumulative per cent.....									100							
Tinsmiths:																
Massachusetts, New Jersey, and New York.....	3	12	1.028									3	1	7	1	
Maryland, Pennsylvania, and West Virginia.....	1	10	.772								7	3				

Illinois, Indiana, and Ohio.....	3	14	.906							1		13					
Kansas, Oklahoma, and Wyoming.....	1	1	.670							1							
Louisiana and Texas.....	3	16	.823						1	4	2	8	1				
California.....	2	2	.885								1		1				
Total.....	13	55	.874						1	5	11	6	22	9	1		
Cumulative per cent.....									2	11	31	42	82	98	100		
Welders:																	
Massachusetts, New Jersey, and New York.....	5	33	.894							4	2	10	9	8			
Maryland, Pennsylvania, and West Virginia.....	2	17	.719							6	9	2					
Illinois, Indiana, and Ohio.....	4	35	.923							3	2	3	16	11			
Kansas, Oklahoma, and Wyoming.....	14	27	.889							2	6	10	3	2	3	1	
Louisiana and Texas.....	8	29	.943							4	2	3	11	8	1		
California.....	3	6	.999									1	2	3			
Total.....	36	147	.895							19	21	29	41	32	4	1	
Cumulative per cent.....										13	27	47	75	97	99	100	
Other mechanics:																	
Massachusetts, New Jersey, and New York.....	7	126	.912							2	9	25	28	8	49	5	
Maryland, Pennsylvania, and West Virginia.....	4	96	.650							28	54	4	5	5			
Illinois, Indiana, and Ohio.....	7	142	.729							17	36	48	29	6	5	1	
Kansas, Oklahoma, and Wyoming.....	22	116	.750				3			18	24	21	33	8	7	2	
Louisiana and Texas.....	13	202	.748				1			14	73	51	38	10	10	5	
California.....	4	46	.910									13	16	3	14		
Total.....	57	728	.770				4			79	196	162	149	40	85	13	
Cumulative per cent.....							1			11	38	61	81	87	98	100	
GUARDING, ETC.																	
Watchmen:																	
Massachusetts, New Jersey, and New York.....	8	254	.716			3	7	20		22	3	172	25	2			
Maryland, Pennsylvania, and West Virginia.....	6	118	.582			1	19	3		59	6	30					
Illinois, Indiana, and Ohio.....	6	70	.551			1	1			56	12						
Kansas, Oklahoma, and Wyoming.....	25	91	.571			1	4	2	5	46	16	16	1				
Louisiana and Texas.....	16	170	.625			2	6	10	8	33	58	47	2	3	1		
California.....	4	78	.679							20	27	31					
Total.....	65	781	.638			4	15	38	36	236	122	296	28	5	1		
Cumulative per cent.....						1	2	7	12	42	58	96	99	100	100		
Other employees:																	
Massachusetts, New Jersey, and New York.....	8	514	.779					4	32	118	133	134	73	19	1		
Maryland, Pennsylvania, and West Virginia.....	9	491	.589			7	23	8	25	271	101	37	12	2	5		
Illinois, Indiana, and Ohio.....	7	634	.675			2	27	6	6	113	219	155	58	39	9		
Kansas, Oklahoma, and Wyoming.....	22	370	.676				2	1		83	147	90	30	14	1	2	
Louisiana and Texas.....	17	639	.719			1	2	1	19	139	192	110	29	74	42	3	2
California.....	4	291	.796							1	30	145	62	47	6		
Total.....	67	2,939	.701			3	9	53	40	54	639	807	670	325	249	82	2
Cumulative per cent.....						(1)	(1)	2	4	5	27	55	77	88	97	100	100

¹ Less than one-half of 1 per cent.

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Employees working each specified number of full-time hours per week.										
					44	48	54	56	60	63	66	66½	70	72	84
WELLS.															
Derrick men:															
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	1	7	70.0										1	
Arkansas, Louisiana, and Texas.....	8	775	7	56.7				746		6				12	11
California.....	3	115	7	56.0				115							
Total.....	11	891		56.6				861		6				13	11
Cumulative per cent.....								97		97				99	100
Drillers:															
New York, Pennsylvania, and West Virginia.....	6	152	6	71.0			8		1					143	
Illinois, Indiana, Kentucky, and Ohio.....	2	55	7	84.0										9	55
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	9	6	72.0											
Arkansas, Louisiana, and Texas.....	5	175	7	84.0											175
California.....	2	16	6	56.3			14							2	
Total.....	28	831	7	83.6				5					12		814
Cumulative per cent.....	1	18	6	54.0			18								
Drillers' helpers and clean-out helpers:	20	1,012	7	69.3				507		14				26	465
New York, Pennsylvania, and West Virginia.....	4	307	7	56.0				307							
Illinois, Indiana, Kentucky, and Ohio.....															
Kansas, Montana, Oklahoma, Utah, and Wyoming.....															
Arkansas, Louisiana, and Texas.....															
California.....															
Total.....	54	2,575		73.6			40	819	1	14				38	1,509
Cumulative per cent.....							2	88	88	84				85	100
Drillers' helpers and clean-out helpers:															
New York, Pennsylvania, and West Virginia.....	3	189	6	55.5			171		4					14	
Illinois, Indiana, Kentucky, and Ohio.....	3	28	7	83.0										2	26
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	2	6	57.0			1		1						
Arkansas, Louisiana, and Texas.....	2	25	7	84.0											25
California.....	9	121	6	51.5			62	48	11						
Total.....	8	175	7	80.7				2		13				18	142
Cumulative per cent.....	2	41	6	54.0			41								
Drillers' helpers and clean-out helpers:	13	1,772	7	58.8				1,532		71				18	151
New York, Pennsylvania, and West Virginia.....	3	378	7	59.0				378							
Illinois, Indiana, Kentucky, and Ohio.....															
Kansas, Montana, Oklahoma, Utah, and Wyoming.....															
Arkansas, Louisiana, and Texas.....															
California.....															
Total.....	32	2,731		59.7			62	261	1,912	16	84			38	344
Cumulative per cent.....							2	12	82	82	85			87	100

Firemen:													
New York, Pennsylvania, and West Virginia.....	1	1	6	54.0			1						
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	37	6	48.6		33	4						
Arkansas, Louisiana, and Texas.....	15	75	7	74.6				16		7		8	44
California.....	1	3	6	54.0			3						
	12	963	7	56.8				898		2			63
	2	49	7	56.0				49					
Total.....	29	1,128		57.7		33	8	963		9		8	107
Cumulative per cent.....						3	4	89		90		91	100
Gaugers:													
New York, Pennsylvania, and West Virginia.....	1	3	7	63.0						3			
Illinois, Indiana, Kentucky, and Ohio.....	1	1	7	63.0						1			
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	16	6	48.0		16							
Arkansas, Louisiana, and Texas.....	8	19	7	65.2				2		13		2	2
California.....	10	65	7	64.9				33		9		9	14
	3	19	7	56.0				19					
Total.....	21	123		61.3		16		54		26		11	16
Cumulative per cent.....						13		67		78		87	100
Laborers, roustabouts, and connection men:													
New York, Pennsylvania, and West Virginia.....	8	1,406	6	49.1		1,278	13		104			11	
Illinois, Indiana, Kentucky, and Ohio.....	3	245	7	61.7				122		45		78	
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	4	55	6	57.3			25		30			3	
Arkansas, Louisiana, and Texas.....	5	758	7	62.1				100		655			
California.....	17	2,559	6	51.4		1,439	777		343				33
	17	2,495	7	63.4				316		1,792		354	
	5	366	6	53.2		82	252		32			744	8
	18	3,244	7	61.6				1,433		1,059			
	4	785	7	56.0				785					
Total.....	56	11,913		57.7		2,799	1,067	2,756	509	3,551		1,179	41
Cumulative per cent.....						23	82	66	60	90		100	100
Pumpers and engineers:													
New York, Pennsylvania, and West Virginia.....	8	1,007	6	54.3		4	942		61				4
Illinois, Indiana, Kentucky, and Ohio.....	6	161	7	61.5				89		26		42	
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	43	6	56.0			29		14			31	10
Arkansas, Louisiana, and Texas.....	7	1,192	7	62.9				81		1,070			
California.....	5	397	6	48.6		386	2			842		212	582
	28	1,755	7	70.3				119		426		11	495
	23	2,021	7	64.4				1,089					
	4	626	7	56.0				626					
Total.....	57	7,202		62.5		390	973	2,004	75	2,364		296	9
Cumulative per cent.....						6	19	47	48	81		85	100

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Employees working each specified number of full-time hours per week.										
					44	48	54	56	60	63	66	66½	70	72	84
WELLS—Continued.															
Rig builders:															
New York, Pennsylvania, and West Virginia.....	5	183	6	49.0		168			15						
Illinois, Indiana, Kentucky, and Ohio.....	3	49	7	69.9						1				48	
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	53	7	69.3						5				48	
Arkansas, Louisiana, and Texas.....	2	34	6	49.1		31			3						
California.....	2	3	7	58.3				2			1				
	3	51	7	58.3				34		17					
	1	44	6	48.0		44									
	2	15	7	56.0				15							
Total.....	19	432		55.2		243		51	18	24				9	
Cumulative per cent.....						56		68	72	78				100	
Teamsters:															
New York, Pennsylvania, and West Virginia.....	5	19	6	62.5			2		7		10				
Illinois, Indiana, Kentucky, and Ohio.....	2	15	7	60.7				5		10					
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	4	6	57.0			2		2						
Arkansas, Louisiana, and Texas.....	3	8	7	61.3				2		6					
California.....	4	21	6	54.6		1	17		3						
	11	154	7	62.3				41		87				26	
	2	20	6	54.0			20								
	8	181	7	60.1				90		77				14	
	4	76	7	56.0				76							
Total.....	30	498		59.8		1	41	214	12	180	10			40	
Cumulative per cent.....						(1)	8	51	54	90	92			100	
Tool dressers:															
New York, Pennsylvania, and West Virginia.....	6	165	6	71.4			5		1					159	
Illinois, Indiana, Kentucky, and Ohio.....	2	61	7	84.0											61
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	9	6	72.0										9	
Arkansas, Louisiana, and Texas.....	4	182	7	84.0											182
California.....	2	15	6	56.4			13							2	
	27	816	7	83.7				5						5	806
	1	20	6	54.0			20								
	14	409	7	80.5				38		1				26	344

California.....	4	217	7	56.0				217									
Total.....	49	1,894		78.6			38	260	1	1			31	170		1,393	
Cumulative per cent.....							2	16	16	16			17	26		100	
Truck drivers:																	
New York, Pennsylvania, and West Virginia.....	2	19	6	66.0							19						
Illinois, Indiana, Kentucky, and Ohio.....	2	6	7	68.8						1							
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	2	4	6	57.0			2		2								
Arkansas, Louisiana, and Texas.....	4	14	7	63.5						13							
California.....	10	190	6	50.6	115	67		8									
Total.....	13	209	7	61.9			53		135								
Cumulative per cent.....	4	46	6	54.0		46											
California.....	13	217	7	66.7			15		89								8
Total.....	4	88	7	56.0			88										
Cumulative per cent.....	38	793		59.6		115	115	156	10	238	19		132			8	
Mechanics:							15	29	49	50	80	82	99			100	
Carpenters—																	
New York, Pennsylvania, and West Virginia.....	5	69	6	48.3		67	1		1								
Illinois, Indiana, Kentucky, and Ohio.....	2	37	7	69.8						1							
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	1	6	54.0			1										
Arkansas, Louisiana, and Texas.....	4	63	7	63.0						63							
California.....	10	140	6	51.2	2	68	65		5								
Total.....	10	200	7	61.5			65		112								
Cumulative per cent.....	7	52	6	50.2		36	13		3								
California.....	13	319	7	60.5			142		147								
Total.....	2	79	6	48.0		79											
Cumulative per cent.....	2	27	7	56.0			27										
Machinists—																	
New York, Pennsylvania, and West Virginia.....	1	25	6	54.0			25										
Illinois, Indiana, Kentucky, and Ohio.....	2	11	7	70.0													
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	4	6	48.0		4											
Arkansas, Louisiana, and Texas.....	1	13	7	63.0						13							
California.....	6	52	6	51.7		22	28		2								
Total.....	8	42	7	60.8			14		27								
Cumulative per cent.....	2	28	6	50.1		18	10										
California.....	7	43	7	62.7			17		11								
Total.....	2	48	6	48.0		48											
Cumulative per cent.....	2	8	7	56.0			8										
Total.....	25	274		55.6		92	63	39	2	51			27				
Cumulative per cent.....						34	67	71	72	90			100				

¹ Less than one-half of 1 per cent.

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Employees working each specified number of full-time hours per week.									
					44	48	54	56	60	63	66	66½	70	72	84

WELLS—Concluded.

Mechanics—Concluded.															
Other mechanics—															
New York, Pennsylvania, and West Virginia.....	5	47	6	49.3	.....	39	6	.....	2	.....	.....	.....	1	.....	.....
Illinois, Indiana, Kentucky, and Ohio.....	2	3	7	65.3	.....	.....	1	.....	.....	2	.....	.....	.....	.....	.....
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	1	6	54.0	.....	.....	.....	.....	.....	.....	18	.....	.....	.....	.....
Arkansas, Louisiana, and Texas.....	3	18	7	63.0	.....	.....	.....	.....	.....	.....	.....	.....	24	.....	1
California.....	9	276	6	51.2	1	126	148	.....	1	.....	.....	.....	.....	.....	.....
	12	218	7	62.5	.....	.....	.....	43	.....	150	.....	.....	.....	.....	.....
	6	158	6	53.0	.....	27	131	.....	.....	.....	.....	.....	37	.....	.....
	11	324	7	61.2	.....	.....	.....	121	.....	166	.....	.....	.....	.....	.....
	2	80	6	48.0	.....	80	.....	.....	.....	.....	.....	.....	.....	.....	.....
	4	73	7	56.0	.....	.....	.....	73	.....	.....	.....	.....	.....	.....	.....
Total.....	36	1,198	.....	56.4	1	272	286	237	3	336	.....	.....	62	.....	1
Cumulative per cent.....	.....	.....	.....	.....	(1)	23	47	66	67	95	.....	.....	100	.....	100
Mechanics' helpers:															
New York, Pennsylvania, and West Virginia.....	4	43	6	49.5	.....	32	11	.....	.....	.....	.....	.....	.....	.....	.....
Illinois, Indiana, Kentucky, and Ohio.....	1	2	7	63.0	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Kansas, Montana, Oklahoma, Utah, and Wyoming.....	1	14	7	63.0	.....	.....	.....	.....	.....	14	.....	.....	.....	.....	.....
Arkansas, Louisiana, and Texas.....	5	76	6	50.8	.....	41	35	.....	.....	.....	.....	.....	.....	.....	.....
California.....	10	105	7	61.0	.....	.....	.....	41	.....	53	.....	.....	11	.....	.....
	4	66	6	49.6	.....	48	18	.....	.....	.....	.....	.....	.....	.....	.....
	9	129	7	61.3	.....	.....	.....	58	.....	45	.....	.....	26	.....	.....
	2	38	6	48.0	.....	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
	3	71	7	56.0	.....	.....	.....	71	.....	.....	.....	.....	.....	.....	.....
Total.....	29	544	.....	55.9	.....	159	64	170	.....	114	.....	.....	37	.....	.....
Cumulative per cent.....	.....	.....	.....	.....	.....	29	41	72	.....	93	.....	.....	100	.....	.....
Other employees:															
New York, Pennsylvania, and West Virginia.....	5	232	6	53.7	.....	72	130	.....	12	.....	6	.....	.....	12	.....
	3	44	7	77.2	.....	.....	.....	.....	.....	5	.....	.....	14	.....	25

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of es- tablish- ments.	Number of em- ployees.	Days per week.	Average full-time hours per week.	Employees working each specified number of full-time hours per week.							
					48	54	56	57	60	63	70	84
PIPE LINES—Continued.												
Gaugers—deliverymen and oil receivers:												
New Jersey, New York, Pennsylvania, and West Virginia.....	3	149	6	60.0					149			
	8	114	7	63.1			56				58	
Illinois, Indiana, Kentucky, and Ohio.....	2	105	6	60.0					105			
	10	158	7	58.8			123			7	28	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	2	132	6	54.0		131			1			
	12	243	7	61.7			146			7	85	5
Arkansas, Louisiana, and Texas.....	1	9	6	54.0		9						
	12	329	7	57.6			265			51	13	
California.....	1	45	6	48.0	45							
	2	19	7	56.0			19					
Total.....	39	1,303		58.9	45	140	609		255	65	184	5
Cumulative per cent.....					3	14	61		81	85	100	100
Laborers, roustabouts, etc.:												
New Jersey, New York, Pennsylvania, and West Virginia.....	9	569	6	59.9	3		1	10	556		15	
	2	16	7	69.1								
Illinois, Indiana, Kentucky, and Ohio.....	11	941	6	59.4	2	83	1		856			
	2	30	7	65.3			10				20	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	9	2,282	6	54.3		2,167			115			
	4	554	7	64.4			222				332	
Arkansas, Louisiana, and Texas.....	11	5,615	6	53.0	1,487	3,543			585			
	9	247	7	59.6			181			9	55	2
California.....	1	730	6	48.0	730							
	3	190	7	56.0			190					
Total.....	40	11,174		54.7	2,222	5,793	604	10	2,112	9	422	2
Cumulative per cent.....					20	72	77	77	96	96	100	100
Linemen:												
New Jersey, New York, Pennsylvania, and West Virginia.....	3	10	6	60.0					10		5	
	2	6	7	67.7			1					
Illinois, Indiana, Kentucky, and Ohio.....	2	8	6	60.0					8			
	1	4	7	70.0							4	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	5	47	6	54.0		47						
	5	32	7	64.3			13				19	
Arkansas, Louisiana, and Texas.....	3	17	6	49.8	12	5						
	5	94	7	63.3			25			40	29	

California.....	1	14	6	48.0	14							
	1	5	7	56.0			5					
Total.....	22	237		59.5	26	52	44		18	40	57	
Cumulative per cent.....					11	33	51		59	76	100	
Line walkers:												
New Jersey, New York, Pennsylvania, and West Virginia.....	2	8	6	52.5	5				3			
	7	62	7	64.4			25				37	
Illinois, Indiana, Kentucky, and Ohio.....	2	6	6	57.0		3			3			
	8	59	7	60.3			41				18	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	1	5	6	60.0					5			
	12	165	7	61.6			85			32	46	2
Arkansas, Louisiana, and Texas.....	11	228	7	64.7			74			24	130	
California.....	1	9	6	48.0	9							
	3	13	7	56.0			13					
Total.....	39	555		62.5	14	3	238		11	56	231	2
Cumulative per cent.....					3	3	46		48	58	100	100
Oilers:												
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	6	74	7	56.0			74					
Arkansas, Louisiana, and Texas.....	7	151	7	56.0			151					
California.....	1	71	6	48.0	71							
Total.....	12	296		54.1	71		225					
Cumulative per cent.....					24		100					
Teamsters:												
New Jersey, New York, Pennsylvania, and West Virginia.....	3	10	6	60.0					10			
	3	90	6	60.0					90			
Illinois, Indiana, Kentucky, and Ohio.....	2	11	7	67.5			2				9	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	2	7	6	52.3	2	5						
Arkansas, Louisiana, and Texas.....	3	6	7	67.7			1				5	
California.....	1	4	6	48.0	4							
	2	4	7	56.0			4					
Total.....	14	132		60.1	6	5	7		100		14	
Cumulative per cent.....					5	8	14		89		100	
Telegraph operators:												
New Jersey, New York, Pennsylvania, and West Virginia.....	1	5	6	60.0					5			0
	8	143	7	56.0			143					
Illinois, Indiana, Kentucky, and Ohio.....	7	113	7	56.0			113					
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	8	168	7	56.0			168					
Arkansas, Louisiana, and Texas.....	8	192	7	56.3			190					2
California.....	1	13	6	48.0	13							
	1	8	7	56.0			8					
Total.....	27	642		56.0	13		622		5			2
Cumulative per cent.....					2		99		100			100

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of es- tablish- ments.	Number of em- ployees.	Days per week.	Average full-time hours per week.	Employees working each specified number of full-time hours per week.							
					48	54	56	57	60	63	70	84

PIPE LINES—Concluded.

Truck drivers:												
New Jersey, New York, Pennsylvania, and West Virginia	2	2	6	60.0					2			
Illinois, Indiana, Kentucky, and Ohio	2	3	7	70.0							3	
Iowa, Kansas, Missouri, Oklahoma, and Wyoming	3	4	6	55.5		3			1			
Arkansas, Louisiana, and Texas	1	5	7	56.0			5					
California	6	93	6	54.3		88			5			
Total	4	26	7	64.6			10				16	
Cumulative per cent	4	51	6	53.5	4	47					27	
	4	52	7	63.4			25					
	1	12	6	48.0	12							
	3	15	7	56.0			15					
Total	24	263		57.1	16	138	55		8		46	
Cumulative per cent					6	69	79		83		100	
Mechanics:												
Carpenters—												
New Jersey, New York, Pennsylvania, and West Virginia	6	6	6	49.3	2				4			
Illinois, Indiana, Kentucky, and Ohio	6	9	6	60.0					9			
Iowa, Kansas, Missouri, Oklahoma, and Wyoming	2	2	7	56.0			2					
Arkansas, Louisiana, and Texas	7	109	6	57.8		40			69			
California	4	24	7	57.8			18			6		
Total	6	227	6	55.9	31	95			101			
Cumulative per cent	6	25	7	59.1			19			1	5	
	1	19	6	48.0	19							
	3	6	7	56.0			6					
Total	29	427		56.4	52	135	45		183	7	5	
Cumulative per cent					12	44	54		97	99	100	
Machinists—												
New Jersey, New York, Pennsylvania, and West Virginia	3	5	6	60.0					5			
Illinois, Indiana, Kentucky, and Ohio	3	8	7	56.0			8					
Iowa, Kansas, Missouri, Oklahoma, and Wyoming	3	8	6	60.0					8			
Arkansas, Louisiana, and Texas	1	5	7	56.0			5					
California	4	56	6	58.3		16			40			
Total	3	10	7	64.4			4				6	

Arkansas, Louisiana, and Texas.....	2	38	6	48.0	38								
California.....	2	12	7	56.0			12						
	1	18	6	48.0	18								
	3	13	7	56.0			13						
Total.....	24	173		54.9	56	16	42		53		6		
<i>Cumulative per cent.....</i>					<i>82</i>	<i>42</i>	<i>66</i>		<i>97</i>		<i>100</i>		
Other mechanics—													
New Jersey, New York, Pennsylvania, and West Virginia....	3	177	6	57.6	35				142				
Illinois, Indiana, Kentucky, and Ohio.....	3	17	7	69.2			1				16		
	6	116	6	58.6	13	2			101				
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	2	26	7	56.0			26						
	6	97	6	54.9	13	57			27				
Arkansas, Louisiana, and Texas.....	4	35	7	61.2			17			10	8		
	7	267	6	52.0	140	68			59				
California.....	8	25	7	59.1			18			3	4		
	1	67	6	48.0	67								
	3	103	7	56.0			103						
Total.....	30	930		55.3	268	127	165		329	13	28		
<i>Cumulative per cent.....</i>					<i>89</i>	<i>42</i>	<i>60</i>		<i>96</i>	<i>97</i>	<i>100</i>		
Mechanics' helpers:													
New Jersey, New York, Pennsylvania, and West Virginia.....	2	2	6	54.0	1				1				
Illinois, Indiana, Kentucky, and Ohio.....	2	12	6	50.0	10				2				
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	4	53	6	58.9		10			43				
	2	7	7	60.0			5				2		
Arkansas, Louisiana, and Texas.....	5	73	6	52.8	41	6			26				
	2	9	7	56.0			9						
California.....	1	56	6	48.0	56								
	3	24	7	56.0			24						
Total.....	18	236		53.5	108	16	38		72		2		
<i>Cumulative per cent.....</i>					<i>46</i>	<i>53</i>	<i>69</i>		<i>99</i>		<i>100</i>		
Other employees:													
New Jersey, New York, Pennsylvania, and West Virginia.....	3	48	6	60.0					48				
Illinois, Indiana, Kentucky, and Ohio.....	3	9	7	62.2			5				4		
	1	5	6	60.0					5				
Iowa, Kansas, Missouri, Oklahoma, and Wyoming.....	6	73	7	57.0			70				1	2	
	5	51	6	54.8		44			7				
Arkansas, Louisiana, and Texas.....	7	23	7	60.9			14			2	7		
	6	49	6	52.5	15	31			3				
California.....	8	108	7	65.5			48			18	20	22	
	1	56	6	48.0	56								
	2	45	7	56.0			45						
Total.....	29	467		57.7	71	75	182		63	20	32	24	
<i>Cumulative per cent.....</i>					<i>15</i>	<i>51</i>	<i>70</i>		<i>84</i>	<i>88</i>	<i>95</i>	<i>100</i>	

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																				
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	Over 66 and under 70.	70	72	Over 72 and under 77.	Over 77 and under 84.	84	91	
REFINERIES.																									
REFINING.																									
Clay roasters:																									
Massachusetts, New Jersey, New York...	3	13	6	48.7				12						1											
	1	3	7	56.0									3												
Maryland, Pennsylvania, West Virginia...	2	3	6	50.7					2		1														
	5	62	7	56.9									60										2		
Illinois, Indiana, Ohio...	1	1	6	48.0				1																	
	2	23	7	56.9									20			3									
Kansas, Oklahoma, Wyoming...	1	1	6	48.0				1																	
	9	28	7	56.3									27			1									
Louisiana, Texas...	3	9	7	56.0									9												
California...	2	2	6	48.0				2																	
Total....	26	145		55.6				16	2		1		119	1		4								2	
Cumulative per cent.....								11	12		13		96	96		99								100	
Coal passers and ashmen:																									
Massachusetts, New Jersey, New York...	3	100	6	48.0				100																	
	3	37	7	56.0									37												
Maryland, Pennsylvania, West Virginia...	1	84	7	56.0									84												
Illinois, Indiana, Ohio...	1	20	6	66.0													20								
	4	262	7	59.9									128			121				13					
Louisiana, Texas...	1	158	6	48.0				158																	
Total....	11	661		54.7				258					249			121		20		13					
Cumulative per cent.....								39					77			95		98		100					
Engineers and chillermen:																									
Massachusetts, New Jersey, New York...	4	41	6	48.1				40			1														
	6	44	7	55.9								2	42												
Maryland, Pennsylvania, West Virginia...	3	15	6	48.5				13	1		1														
	7	85	7	58.6									77											8	
Illinois, Indiana, Ohio.....	3	13	6	52.9				6		2						5									
	6	38	7	57.5									36											2	

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																						
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91	
REFINERIES—Continued.																											
REFINING—continued.																											
Molders:																											
Massachusetts, New Jersey, New York...	3	43	6	48.0					43					25													
	2	25	7	56.0																							
Maryland, Pennsylvania, West Virginia...	1	9	6	49.0					9					35													
Illinois, Indiana, Ohio...	2	35	7	56.0																							
Kansas, Oklahoma, Wyoming...	1	4	6	48.0					4																		
	1	6	7	56.0										6													
Louisiana, Texas...	4	23	7	56.0										23													
California...	1	5	6	48.0					5																		
Total.....	14	150		52.8					52	9				89													
Cumulative per cent.....									35	41				100													
Molders (female):																											
Illinois, Indiana, Ohio.....	2	8	6	52.5					2			6															
Cumulative per cent.....									25			100															
Oilers:																											
Massachusetts, New Jersey, New York...	1	13	6	48.0					13																		
	3	8	7	55.5								3	5														
Maryland, Pennsylvania, West Virginia...	2	9	6	48.7					3	6																	
	2	19	7	56.0									19														
Kansas, Oklahoma, Wyoming.....	1	3	7	56.0									3														
Louisiana, Texas.....	1	2	7	59.5									1			1											
Total.....	9	54		52.9					16	6		3	28			1											
Cumulative per cent.....									30	41		46	98			100											
Pressmen:																											
Massachusetts, New Jersey, New York...	4	99	6	48.0					99																		
	3	29	7	55.6								9	20														

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																						
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91	
REFINERIES—Continued.																											
REFINING—Continued.																											
Repairmen:																											
Massachusetts, New Jersey, New York...	3	17	6	48.0					17																		
	1	1	7	54.7									1														
Maryland, Pennsylvania, West Virginia...	2	5	6	48.4					3	2																	
Kansas, Oklahoma, Wyoming.....	2	9	6	48.0					9																		
	1	2	7	56.0									2														
Louisiana, Texas.....	1	1	6	48.0					1																		
	1	1	7	56.0									1														
Total.....	11	36		48.9					30	2			1	3													
Cumulative per cent.....									83	89			92	100													
Retort, acid, and kettle men:																											
Massachusetts, New Jersey, New York...	2	10	6	48.0					10																		
	2	18	7	55.8									3	15													
Maryland, Pennsylvania, West Virginia...	2	4	6	54.0					3												1						
	3	10	7	56.0																							
Illinois, Indiana, Ohio.....	1	23	7	56.0										10													
Louisiana, Texas.....	4	19	7	56.0										23													
California.....	1	1	7	56.0										19													
	1	1	7	56.0										1													
Total.....	14	85		54.9					13				3	68													
Cumulative per cent.....									15				19	96							1						
																					100						
Still inspectors:																											
Massachusetts, New Jersey, New York...	1	4	6	48.0					4																		
	3	9	7	59.1									7							2							
Maryland, Pennsylvania, West Virginia...	1	6	7	56.0									6														
Illinois, Indiana, Ohio.....	1	4	7	56.0									4														

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91

REFINERIES—Continued.

REFINING—concluded.																											
Testers:																											
Massachusetts, New Jersey, New York...	2	8	6	48.0				8						3													
	1	3	7	56.0																							
Maryland, Pennsylvania, West Virginia...	2	12	6	49.1				11	1																		
	1	14	7	56.0										14													
Illinois, Indiana, Ohio...	3	15	7	56.0										15													
Kansas, Oklahoma, Wyoming...	5	17	6	48.0				17																			
	9	17	7	56.8										15		2											
Louisiana, Texas...	2	21	6	48.0				21																			
	7	32	7	56.0										32													
Total...	28	139		52.9				46	11	1				79		2											
Cumulative per cent								83	41	42				89		100											
Testers (female):																											
Maryland, Pennsylvania, West Virginia...	1	5	6	49.0					5																		
Cumulative per cent									100																		
Testers' assistants:																											
Massachusetts, New Jersey, New York...	1	1	6	48				1																			
Maryland, Pennsylvania, West Virginia...	1	8	6	49					8																		
Illinois, Indiana, Ohio...	1	6	7	56										6													
Kansas, Oklahoma, Wyoming...	1	5	6	48				5																			
	4	11	7	56										11													
Louisiana, Texas...	1	4	7	56										4													
Total...	9	35		53.0				6	8					21													
Cumulative per cent								17	40					100													
Treaters:																											
Massachusetts, New Jersey, New York...	6	21	6	49.5				17		2					2												
	3	11	7	56.0										11													

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																					
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91

REFINERIES—Continued.

FILLING, PACKING, AND SHIPPING.																											
Branders and painters:																											
Massachusetts, New Jersey, New York...	4	32	6	47.5	...	5	...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maryland, Pennsylvania, West Virginia...	3	28	6	49.9	...	...	...	21	5	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Illinois, Indiana, Ohio...	2	13	6	48.0	...	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kansas, Oklahoma, Wyoming...	1	4	6	48.0	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Louisiana, Texas...	3	8	6	48.0	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
California...	2	11	6	48.0	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.....	15	96	...	48.4	...	5	...	63	21	5	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Cumulative per cent.....	...	...	...	...	...	5	...	71	93	98	...	...	...	...	100	...	...	...	...	...	...	...	...	...	...	...	...
Branders and painters (female):																											
Maryland, Pennsylvania, West Virginia...	1	1	6	49.0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cumulative per cent.....	...	...	...	...	...	...	...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fillers:																											
Massachusetts, New Jersey, New York...	7	36	6	47.9	...	2	...	32	...	2	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maryland, Pennsylvania, West Virginia...	6	51	6	50.5	...	...	...	27	25	3	5	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Illinois, Indiana, Ohio...	5	43	6	48.4	...	9	...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kansas, Oklahoma, Wyoming...	1	1	6	48.0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Louisiana, Texas...	2	6	7	59.5	...	...	...	...	...	...	...	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...
Louisiana, Texas...	7	48	6	48.0	...	...	...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Louisiana, Texas...	2	9	7	56.0	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
California...	4	44	6	48.0	...	...	...	44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.....	33	238	...	49.2	9	2	...	159	25	5	21	...	12	...	2	3	...	...	...	...	...	...	...	...	...	...	...
Cumulative per cent.....	...	...	...	...	4	5	...	71	82	84	93	...	98	...	99	100	...	...	...	...	...	...	...	...	...	...	...

Fillers (female):

[illegible]

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																			
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	Over 66 and under 70.	70	72	Over 72 and under 77.	Over 77 and under 84.	84	91

REFINERIES—Continued.

FILLING, PACKING, AND SHIPPING—concl'd.																								
Tank-carloaders:																								
Massachusetts, New Jersey, New York...	4	20	6	50.3				14		4				2	1	1				1				
Maryland, Pennsylvania, West Virginia...	2	3	7	60.7																				
Illinois, Indiana, Ohio...	7	57	6	49.4				21	28	1	6					1								
Kansas, Oklahoma, Wyoming...	7	31	6	52.0	2			4		9	12					4								
Louisiana, Texas...	10	21	6	51.1				11			8				2									
California...	17	54	7	56.1									53											
Total...	5	30	6	48.0				30								1								
Cumulative per cent...	13	34	7	57.2									29			4				1				
California...	4	11	6	48.0				11																
Total...	69	261		52.2	2			91	28	10	30		84	3	6	5				2				
Cumulative per cent...					1			36	46	50	62		94	96	97	99				100				
Testers:																								
Massachusetts, New Jersey, New York...	1	4	6	48.0				4																
Maryland, Pennsylvania, West Virginia...	1	9	6	49.0					9															
Total...	2	13		48.7				4	9															
Cumulative per cent...								51	100															
Weighers:																								
Massachusetts, New Jersey, New York...	4	18	6	47.5		5		12			1													
Maryland, Pennsylvania, West Virginia...	2	13	6	48.6				8		5														
Illinois, Indiana, Ohio...	1	4	6	51.0				3								1								
Kansas, Oklahoma, Wyoming...	2	11	7	56.0									11											
Total...	1	1	6	48.0				1																
Cumulative per cent...	1	1	7	63.0												1								

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																					
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91

REFINERIES—Continued.

TRANSPORTATION—RAILROAD, MOTOR, AND TEAM—concluded.																											
Firemen:																											
Massachusetts, New Jersey, New York...	3	11	6	47.7	.....	1	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland, Pennsylvania, West Virginia..	1	1	5	50.0	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1	2	6	52.5	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois, Indiana, Ohio.....	1	14	7	77.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Louisiana, Texas.....	2	5	6	48.0	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	.....	.....	.....
.....	1	3	7	56.0	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	8	36	.....	60.2	.....	1	.....	15	.....	3	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	.....	.....	.....
Cumulative per cent.....	.....	.....	.....	.....	.....	3	.....	44	.....	53	.....	.....	61	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	.....	.....	.....
Teamsters and drivers:																											
Massachusetts, New Jersey, New York...	4	23	6	50.3	.....	.....	.....	16	.....	2	3	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland, Pennsylvania, West Virginia..	3	126	6	49.6	.....	.....	.....	114	.....	10	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois, Indiana, Ohio.....	3	24	6	52.5	.....	.....	.....	10	.....	10	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	2	2	7	64.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kansas, Oklahoma, West Virginia.....	5	16	6	49.9	.....	.....	.....	11	.....	5	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Louisiana, Texas.....	3	19	6	48.3	.....	.....	.....	18	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	2	5	7	56.0	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
California.....	4	65	6	53.6	.....	.....	.....	4	.....	.....	61	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	26	280	.....	51.0	.....	.....	.....	59	114	2	90	.....	5	1	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumulative per cent.....	.....	.....	.....	.....	.....	.....	.....	21	62	63	95	.....	96	97	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trackmen:																											
Massachusetts, New Jersey, New York...	1	8	6	48.0				8																			
Maryland, Pennsylvania, West Virginia..	1	12	6	48.0				12																			

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																						
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91	
REFINERIES—Continued.																											
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.																											
Bricklayers and masons:																											
Massachusetts, New Jersey, New York.....	7	101	6	47.6	13		88			1																	
Maryland, Pennsylvania, West Virginia.....	5	65	6	48.2	6		28	30		2					2												
Illinois, Indiana, Ohio.....	6	68	6	48.0	9		55			1																	
Kansas, Oklahoma, Wyoming.....	20	67	6	47.5	10		56			1																	
Louisiana, Texas.....	1	1	7	56.0								1															
	11	267	6	48.1			265							2													
California.....	1	4	7	56.0								4															
	2	25	6	48.0			25																				
Total.....	52	598		48.0	25	13	517	30		4		5		4													
Cumulative per cent.....					4	6	98	98		98		99		100													
Carpenters:																											
Massachusetts, New Jersey, New York.....	8	183	6	47.1	55		128																				
Maryland, Pennsylvania, West Virginia.....	7	141	6	49.5			27	80	21	10					3												
Illinois, Indiana, Ohio.....	7	108	6	45.3	83		20			2		2			1												
Kansas, Oklahoma, Wyoming.....	23	119	6	47.9	18		91			10																	
Louisiana, Texas.....	2	2	7	56.0								2															
California.....	14	346	6	48.0	3		340			3																	
	4	96	6	48.0			96																				
Total.....	65	995		47.8	104	55	702	80	21	25	2	2		4													
Cumulative per cent.....					10	16	87	95	97	99	99	100		100													
Coopers:																											
Massachusetts, New Jersey, New York.....	4	92	6	47.3	22		70																				
Maryland, Pennsylvania, West Virginia.....	5	69	6	50.2			22	10	26	5				6													
Illinois, Indiana, Ohio.....	1	9	7	63.0											9												
	1	4	6	48.0			4																				

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TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																					
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91
REFINERIES—Continued.																										
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.																										
Helpers: ²																										
Massachusetts, New Jersey, New York...	7	361	6	47.5	59			301		1																
	1	1	7	56.0								1														
Maryland, Pennsylvania, West Virginia	4	255	6	49.0				72	152	26					5											
	1	4	7	63.0												4										
Illinois, Indiana, Ohio.....	7	291	6	48.6	95		4	102		7	58	21		2	2											
Kansas, Oklahoma, Wyoming.....	16	122	6	49.1	5			92			25															
Louisiana, Texas.....	12	953	6	48.0	9			944																		
	2	3	7	56.0									3													
California.....	4	279	6	48.0				279																		
	1	3	7	56.0									3													
Total.....	52	2,272		48.2	109	59	4	1790	152	34	83	21	7	2	7	4										
Cumulative per cent.....					5	7	8	88	93	95	98	99	99	100	100	100										
Laborers:																										
Massachusetts, New Jersey, New York...	8	2,120	6	48.3		150		1856		9	5			94	2						4					
	3	63	7	56.0								2	61													
Maryland, Pennsylvania, West Virginia	7	1,623	6	49.2				239	1101	201	71				11											
	3	38	7	63.0									1			36				1						
Illinois, Indiana, Ohio.....	7	1,301	6	54.5	12			141			872				273	3										
	4	213	7	61.9								49				152				9			2		1	
Kansas, Oklahoma, Wyoming.....	22	1,204	6	48.7				1066			138															
	10	150	7	58.8								90				60										
Louisiana, Texas.....	19	3,688	6	48.2	24			3558			65			15	20			6								
	8	144	7	56.0								144														
California.....	4	595	6	48.0				595																		
Total.....	78	11,139		49.7	36	150		7455	1101	210	1151	2	345	109	306	251		6		10	4		2		1	
Cumulative per cent.....					(1)	2		69	78	80	91	91	94	95	98	100		100		100	100		100		100	

Laborers (female):																			
Maryland, Pennsylvania, West Virginia	1	28	6	44.4	26					2									
Illinois, Indiana, Ohio	1	1	7	56.0											1				
Total	2	29		44.8	26					2					1				
Cumulative per cent					90					97					100				
Lead burners:																			
Massachusetts, New Jersey, New York	4	9	6	47.3		2				7									
Maryland, Pennsylvania, West Virginia	3	5	6	48.9						1	3	1							
Illinois, Indiana, Ohio	2	7	6	48.0						7									
Kansas, Oklahoma, Wyoming	3	4	6	47.0	1					3									
Louisiana, Texas	1	1	7	56.0											1				
California	5	12	6	50.0						8		4							
Total	1	3	7	56.0											3				
Cumulative per cent	4	9	6	48.0						9									
Total	23	50		49.0	1	2				35	3	1	4		4				
Cumulative per cent					2	6				76	82	84	92		100				
Machinists:																			
Massachusetts, New Jersey, New York	7	202	6	47.6		26				176									
Maryland, Pennsylvania, West Virginia	5	193	6	49.1						13	167	10	2						
Illinois, Indiana, Ohio	1	2	7	63.0						7						1			
Kansas, Oklahoma, Wyoming	6	137	6	48.9	72					7			13	37		1	7	2	
Louisiana, Texas	16	58	6	48.8						50			8						
California	2	2	7	56.0											2				
Total	14	142	6	48.0	1					140			1						
Cumulative per cent	2	2	7	56.0											2				
Total	4	73	6	48.0						73					2				
Cumulative per cent	1	2	7	56.0											2				
Total	56	813		48.5	73	26				459	167	10	24	37	6	1	8	2	
Cumulative per cent					9	12				69	89	90	93	98	99	99	100	100	
Painters:																			
Massachusetts, New Jersey, New York	7	69	6	47.8		4				65									
Maryland, Pennsylvania, West Virginia	4	49	6	49.1						11	36		1				1		
Illinois, Indiana, Ohio	1	2	7	63.0													2		
Kansas, Oklahoma, Wyoming	4	73	6	45.5	57					10			5				1		
Louisiana, Texas	15	48	6	48.6						43			5						
California	3	9	7	56.0											9				
Total	9	129	6	48.0						128			1						
Cumulative per cent	4	29	6	48.0						29									
Total	47	408		48.0	57	4				286	36		12		9		2	2	
Cumulative per cent					14	15				85	94		97		99		100	100	

¹ Less than one-half of 1 per cent.² Not including boiler makers' and pipe fitters' helpers.

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Continued.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 56 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	84	91

REFINERIES—Continued.																										
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.																										
Pipe fitters:																										
Massachusetts, New Jersey, New York...	7	268	6	47.7	24	244																				
	2	3	7	56.0							3															
Maryland, Pennsylvania, West Virginia...	6	231	6	49.0		69	149		12				1													
	2	10	7	60.2							4			6												
Illinois, Indiana, Ohio.....	7	107	6	53.6		26			63				18													
	1	6	7	63.0										6												
Kansas, Oklahoma, Wyoming.....	21	127	6	49.1		103			24																	
	6	16	7	58.6							10			6												
Louisiana, Texas.....	16	177	6	48.3	3	166			4				4													
	2	3	7	56.0							3															
California.....	4	77	6	48.0		77																				
Total.....	68	1,025		49.4	3	24	685	149		103	20		23	18												
Cumulative per cent.....					(1)	3	69	84		94	96		98	100												
Pipe fitter's helpers:																										
Massachusetts, New Jersey, New York...	7	456	6	48.0	60	388										8										
	1	1	7	56.0							1															
Maryland, Pennsylvania, West Virginia...	5	473	6	49.1		96	334	33	1				9													
	2	15	7	60.2							6			9												
Illinois, Indiana, Ohio.....	7	230	6	52.2		108			84				38													
	2	6	7	63.0							2			2					2							
Kansas, Oklahoma, Wyoming.....	17	272	6	49.0		228			44																	
	2	29	7	56.0							29															
Louisiana, Texas.....	12	1,328	6	47.9	19	1309																				
	2	49	7	56.0							49															

¹ Less than one-half of 1 per cent.

TABLE E.—AVERAGE AND SPECIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATIONS, DISTRICTS, AND DAYS PER WEEK, 1920—Concluded.

Occupation and district.	Number of establishments.	Number of employees.	Days per week.	Average full-time hours per week.	Number of employees working each classified number of full-time hours per week.																					
					44	45	Over 45 and under 48.	48	49	Over 49 and under 54.	54	Over 54 and under 56.	56	Over 54 and under 60.	60	63	Over 63 and under 66.	66	Over 66 and under 70.	70	72	Over 72 and under 77.	77	Over 77 and under 84.	91	
REFINERIES—Concluded.																										
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—Concluded.																										
Other mechanics:																										
Massachusetts, New Jersey, New York...	7	121	6	47.8	14		104		1			2														
Maryland, Pennsylvania, West Virginia...	2	5	7	56.0							5															
	5	93	6	48.9			5	88																		
	1	3	7	63.0										3												
Illinois, Indiana, Ohio.....	7	134	6	52.5	9		32		1	41	42		9													
	2	8	7	60.4							5			1				2								
Kansas, Oklahoma, Wyoming.....	18	92	6	48.8			80			12																
	9	24	7	56.6							22			2												
Louisiana, Texas.....	12	190	6	47.8	13		176		1																	
	3	12	7	56.0							12															
California.....	4	46	6	48.0			46																			
Total.....	57	728		49.6	22	14	443	88	2	54	42	44	2	9	6				2							
Cumulative per cent.....					3	5	66	78	78	86	91	97	98	99	100				100							
GUARDING, ETC.																										
Watchmen:																										
Massachusetts, New Jersey, New York...	4	168	6	48.4			148	14		2			1	2		1						1		18	6	
	6	86	7	64.6							60				1											
Maryland, Pennsylvania, West Virginia...	1	28	6	48.0			28																			
	5	90	7	63.0							65							2		3		7	13			
Illinois, Indiana, Ohio.....	1	32	6	72.6																						
	6	38	7	73.7							14								29		3		24			
Kansas, Oklahoma, Wyoming.....	1	9	6	48.0			9																			
	24	82	7	61.5							60			5				4			1		12			
Louisiana, Texas.....	3	60	6	48.2			58		2																	
	14	110	7	60.1							94												16			

[illegible]

122 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS PER

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

WELLS.											
Derrick men:											
Kansas, Montana, Oklahoma, Utah, Wyoming.	1	1	10.0	70.0					1		
Arkansas, Louisiana, Texas	8	775	8.1	56.7	11				12	6	746
California	3	115	8.0	56.0							115
Total	11	891	8.1	56.6	11				13	6	861
Drillers:											
New York, Pennsylvania, West Virginia	8	207	11.9	74.4	55						
Illinois, Indiana, Kentucky, Ohio	6	184	12.0	83.4	175						
Kansas, Montana, Oklahoma, Utah, Wyoming.	30	847	11.9	83.1	814				12		5
Arkansas, Louisiana, Texas	21	1,030	9.9	69.1	465				26	14	507
California	4	307	8.0	56.0							307
Total	54	2,575	10.6	73.6	1509				38	14	819
Drillers' helpers and clean-out helpers:											
New York, Pennsylvania, West Virginia	6	217	9.6	59.0	26				2		
Illinois, Indiana, Kentucky, Ohio	4	27	11.8	82.0	25						
Kansas, Montana, Oklahoma, Utah, Wyoming.	16	296	10.3	68.7	142				18	13	2
Arkansas, Louisiana, Texas	15	1,813	8.4	58.7	151				18	71	1532
California	3	378	8.0	56.0							378
Total	32	2,731	8.7	59.7	344				38	84	1912
Firemen:											
New York, Pennsylvania, West Virginia	1	1	9.0	54.0							
Kansas, Montana, Oklahoma, Utah, Wyoming.	17	112	9.8	66.0	44				8	7	16
Arkansas, Louisiana, Texas	12	966	8.3	56.8	63						2 898
California	2	49	8.0	56.0							49
Total	29	1,128	8.4	57.7	107				8	9	963
Gaugers:											
New York, Pennsylvania, West Virginia	1	3	9.0	63.0						3	
Illinois, Indiana, Kentucky, Ohio	1	1	9.0	63.0						1	
Kansas, Montana, Oklahoma, Utah, Wyoming.	9	35	8.7	57.3	2				2	13	2
Arkansas, Louisiana, Texas	10	65	9.3	64.9	14				9	9	33
California	3	19	8.0	56.0							19
Total	21	123	8.9	61.3	16				11	26	54
Laborers, roustabouts, and connection men:											
New York, Pennsylvania, West Virginia	11	1,651	8.3	51.0					78	45	122
Illinois, Indiana, Kentucky, Ohio	9	813	8.9	61.8					3	655	100
Kansas, Montana, Oklahoma, Utah, Wyoming.	31	5,054	8.8	57.3	33				354	1792	316
Arkansas, Louisiana, Texas	22	3,610	8.8	60.7	8				744	1059	1433
California	4	785	8.0	56.0							785
Total	56	11,913	8.7	57.7	41				1179	3551	2756
Pumpers and engineers:											
New York, Pennsylvania, West Virginia	12	1,168	9.0	55.3	4				42	26	89
Illinois, Indiana, Kentucky, Ohio	9	1,235	9.0	62.6	10				31	1070	81
Kansas, Montana, Oklahoma, Utah, Wyoming.	30	2,152	9.7	66.4	532				212	842	119
Arkansas, Louisiana, Texas	23	2,021	9.2	64.4	495				11	425	1089
California	4	626	8.0	56.0							626
Total	57	7,232	9.2	62.5	1091				296	2364	2004

Number of employees working specified customary days per week and hours per day.																
6 days.														5 days.		
Hours per day.																
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

[illegible]

124 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

WELLS—Continued.

Rig builders:										
New York, Pennsylvania, West Virginia.....	8	232	8.5	53.4	.....	.....	.....	48	1	.....
Illinois, Indiana, Kentucky, Ohio.....	2	53	9.9	69.3	.....	.....	.....	48	5	.....
Kansas, Montana, Oklahoma, Utah, Wyoming.....	4	37	8.2	49.8	.....	.....	.....	.....	1	2
Arkansas, Louisiana, Texas.....	3	51	8.3	58.3	.....	.....	.....	.....	17	34
California.....	3	59	8.0	50.0	.....	.....	.....	.....	.....	15
Total.....	19	432	8.6	55.2	.....	.....	.....	96	24	51
Teamsters:										
New York, Pennsylvania, West Virginia.....	7	34	9.6	61.7	.....	.....	.....	.....	19	5
Illinois, Indiana, Kentucky, Ohio.....	5	12	9.0	59.8	.....	.....	.....	.....	6	2
Kansas, Montana, Oklahoma, Utah, Wyoming.....	11	175	8.9	61.4	.....	.....	.....	26	87	41
Arkansas, Louisiana, Texas.....	10	201	8.6	59.5	.....	.....	.....	14	77	90
California.....	4	76	8.0	56.0	.....	.....	.....	.....	.....	76
Total.....	30	498	8.7	59.8	.....	.....	.....	40	180	214
Tool dressers:										
New York, Pennsylvania, West Virginia.....	8	226	11.9	74.8	61	.....	.....	.....	.....	.....
Illinois, Indiana, Kentucky, Ohio.....	5	191	12.0	83.4	182	.....	.....	.....	.....	.....
Kansas, Montana, Oklahoma, Utah, Wyoming.....	29	831	11.9	83.2	806	.....	.....	5	.....	5
Arkansas, Louisiana, Texas.....	15	429	11.4	79.2	344	.....	.....	26	1	38
California.....	4	217	8.0	56.0	.....	.....	.....	.....	.....	217
Total.....	49	1,894	11.4	78.6	1,393	.....	.....	31	1	260
Truck drivers:										
New York, Pennsylvania, West Virginia.....	4	25	10.7	66.7	.....	.....	.....	5	1	.....
Illinois, Indiana, Kentucky, Ohio.....	6	18	9.2	62.1	.....	.....	.....	1	13	.....
Kansas, Montana, Oklahoma, Utah, Wyoming.....	22	399	8.7	56.5	.....	.....	.....	21	135	53
Arkansas, Louisiana, Texas.....	16	263	9.4	64.5	8	.....	.....	105	89	15
California.....	4	88	8.0	56.0	.....	.....	.....	.....	.....	88
Total.....	38	793	8.9	59.6	8	.....	.....	132	238	156
Mechanics:										
Carpenters—										
New York, Pennsylvania, West Virginia.....	6	106	8.7	55.8	.....	.....	.....	36	1	.....
Illinois, Indiana, Kentucky, Ohio.....	5	64	9.0	62.9	.....	.....	.....	.....	63	.....
Kansas, Montana, Oklahoma, Utah, Wyoming.....	17	340	8.7	57.3	.....	.....	.....	23	112	65
Arkansas, Louisiana, Texas.....	17	371	8.6	59.1	.....	.....	.....	30	147	142
California.....	4	106	8.0	50.0	.....	.....	.....	.....	.....	27
Total.....	38	987	8.6	57.4	.....	.....	.....	89	323	234
Machinists:										
New York, Pennsylvania, West Virginia.....	3	36	9.3	58.9	.....	.....	.....	11	.....	.....
Illinois, Indiana, Kentucky, Ohio.....	1	17	8.8	59.5	.....	.....	.....	.....	13	.....
Kansas, Montana, Oklahoma, Utah, Wyoming.....	14	94	8.6	55.8	.....	.....	.....	1	27	14
Arkansas, Louisiana, Texas.....	7	71	8.7	57.7	.....	.....	.....	15	11	17
California.....	4	56	8.0	49.1	.....	.....	.....	.....	.....	8
Total.....	25	274	8.6	55.6	.....	.....	.....	27	51	39

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.																			
6 days.															5 days.				
Hours per day.																			
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½	8½, but less on 1 day.	8	8, but less on 1 day.	10

WELLS—Continued.

					15											168	
					3											31	
																44	
					18											243	
			10		7					2							
					2					2							
					3					17						1	
										20							
			10		12					41						1	
	159				1					5							
	9																
	2									13							
										20							
	170				1					38							
			19		2					2							
					8					67						110	
										46			5				
			19		10					115			5			110	
					1		1									67	
					5					1							
					3					65		19				49	2
										13						36	
																79	
					9		1			79		19				231	2
							25										
					2					28		10				4	
										10						12	
																18	
																48	
					2		25			38		10				82	

126 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

WELLS—Concluded.

Mechanics—Concluded.										
Other mechanics:										
New York, Pennsylvania, West Virginia.....	7	50	8.3	50.2				1	2	
Illinois, Indiana, Kentucky, Ohio.....	4	19	9.0	62.5					18	
Kansas, Montana, Oklahoma, Utah, Wyoming.	18	494	8.7	56.2	1			24	150	43
Arkansas, Louisiana, Texas.....	15	482	8.8	58.5				37	166	121
California.....	4	153	8.0	51.8						73
Total.....	36	1,198	8.6	56.4	1			62	336	237
Mechanics' helpers:										
New York, Pennsylvania, West Virginia.....	5	45	8.3	50.1					2	
Illinois, Indiana, Kentucky, Ohio.....	1	14	9.0	63.0					14	
Kansas, Montana, Oklahoma, Utah, Wyoming.	14	181	8.6	56.7				11	53	41
Arkansas, Louisiana, Texas.....	11	195	8.6	57.3				26	45	58
California.....	4	109	8.0	53.2						71
Total.....	29	544	8.5	55.9				37	114	170
Other employees:										
New York, Pennsylvania, West Virginia.....	8	276	9.3	57.4	25			14	5	
Illinois, Indiana, Kentucky, Ohio.....	7	50	10.6	73.1	25			3	16	
Kansas, Montana, Oklahoma, Utah, Wyoming.	25	858	9.3	62.1	157			72	204	113
Arkansas, Louisiana, Texas.....	21	662	9.4	64.6	104			134	145	206
California.....	4	226	8.0	56.0						226
Total.....	48	2,072	9.2	61.9	311			223	370	545

PIPE LINES.

Engineers and pumpers:										
New Jersey, New York, Pennsylvania, West Virginia.....	9	243	8.3	56.8				5		207
Illinois, Indiana, Kentucky, Ohio.....	10	252	8.1	56.4	2			3	2	242
Iowa, Kansas, Missouri, Oklahoma, Wyoming.	13	452	8.5	59.6	54			8	3	387
Arkansas, Louisiana, Texas.....	12	499	8.3	57.7	31				1	464
California.....	4	288	8.0	53.4						195
Total.....	40	1,734	8.3	57.2	87			16	6	1495
Firemen:										
New Jersey, New York, Pennsylvania, West Virginia.....	9	242	8.0	56.0						239
Illinois, Indiana, Kentucky, Ohio.....	8	156	8.1	56.4	2					154
Iowa, Kansas, Missouri, Oklahoma, Wyoming.	7	192	8.0	56.3	2					190
Arkansas, Louisiana, Texas.....	9	214	8.2	57.1	8				3	203
California.....	4	270	8.0	53.4						182
Total.....	32	1,074	8.1	55.7	12				3	968
Gaugers—deliverymen and oil receivers:										
New Jersey, New York, Pennsylvania, West Virginia.....	9	263	9.6	61.4				58		56
Illinois, Indiana, Kentucky, Ohio.....	10	263	9.0	59.3				28	7	123
Iowa, Kansas, Missouri, Oklahoma, Wyoming.	13	375	8.9	59.0	5			85	7	146
Arkansas, Louisiana, Texas.....	12	338	8.3	57.5				13	51	265
California.....	3	64	8.0	50.4						19
Total.....	39	1,303	8.8	58.9	5			184	65	609

¹ Includes 2 at 9½ hours.

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.															
6 days.															5 days.
Hours per day.															
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.
10															

WELLS—Concluded.

					2		6								39
					1						1				
										148			22		104
										131					27
															80
					3		6				280		22		250
							11								32
											35		14		27
											18				48
															38
							11				53		14		145
	12		6		12						130				72
					2						4				
	1				18						107		25		161
											67				6
	13		6		32						308		25		239

PIPE LINES.

					31										
											3				
											3				
														93	
					31						6			93	
					3										
														88	
					3									88	
					149										
					105										
					1						131				
											9				
														45	
					255						140			45	

128 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

PIPE LINES—Continued.

Laborers, roustabouts, etc.:											
New Jersey, New York, Pennsylvania, West Virginia.....	9	585	10.0	60.1				15		1	
Illinois, Indiana, Kentucky, Ohio.....	10	971	9.9	59.6				20		10	
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	13	2,836	9.1	56.3				332		222	
Arkansas, Louisiana, Texas.....	12	5,862	8.8	52.1	2			55	9	181	
California.....	4	920	8.0	49.7						190	
Total.....	40	11,174	9.0	54.7	2			422	9	604	
Linemen:											
New Jersey, New York, Pennsylvania, West Virginia.....	5	16	9.9	62.9				5		1	
Illinois, Indiana, Kentucky, Ohio.....	3	12	10.0	63.3				4			
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	10	79	9.1	58.2				19		13	
Arkansas, Louisiana, Texas.....	6	111	8.9	61.2				29	40	25	
California.....	2	19	8.0	50.1						5	
Total.....	22	237	9.0	59.5				57	40	44	
Line walkers:											
New Jersey, New York, Pennsylvania, West Virginia.....	9	70	8.6	63.0				37		25	
Illinois, Indiana, Kentucky, Ohio.....	10	65	8.7	60.0				18		41	
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	13	170	8.8	61.6	2			46	32	85	
Arkansas, Louisiana, Texas.....	11	228	9.4	64.7				130	24	74	
California.....	4	22	8.0	52.7						13	
Total.....	39	555	9.0	62.5	2			231	56	238	
Oilers:											
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	6	74	8.0	56.0						74	
Arkansas, Louisiana, Texas.....	7	151	8.0	56.0						151	
California.....	1	71	8.0	48.0							
Total.....	12	296	8.0	54.1						225	
Teamsters:											
New Jersey, New York, Pennsylvania, West Virginia.....	3	10	10.0	60.0							
Illinois, Indiana, Kentucky, Ohio.....	3	90	10.0	60.0							
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	2	11	9.6	67.5				9		2	
Arkansas, Louisiana, Texas.....	4	13	9.2	59.4				5		1	
California.....	3	8	8.0	52.0						4	
Total.....	14	132	9.8	60.1				14		7	
Telegraph operators:											
New Jersey, New York, Pennsylvania, West Virginia.....	8	148	8.1	56.1						143	
Illinois, Indiana, Kentucky, Ohio.....	7	113	8.0	56.0						113	
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	8	168	8.0	56.0						168	
Arkansas, Louisiana, Texas.....	8	192	8.0	56.3	2					190	
California.....	2	21	8.0	51.0						8	
Total.....	27	642	8.0	56.0	2					622	

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.																		
6 days.															5 days.			
Hours per day.																		
13	12	11½	11	10½	10	10, but less on 1 day.	9¾, but less on 1 day.	9½	9¾, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8¾, but less on 1 day.	8½, but less on 1 day.	8¼	8¾, but less on 1 day.	8, but less on 1 day.	10

PIPE LINES—Continued.

					556			10							3	
					856					83					2	
					115					2167						
					585					3543					1487	
															730	
					2112			10		5793					2222	
					10											
					8					47					12	
										5					14	
					18					52					26	
					3					3					5	
					3											
					5										9	
					11					3					14	
															71	
															71	
					10											
					90					5					2	
															4	
					100					5					6	
					5											
															13	
					5										13	

130 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	
PIPE LINES—Concluded.											
Truck drivers:											
New Jersey, New York, Pennsylvania, West Virginia.....	3	5	10.0	66.0				3			
Illinois, Indiana, Kentucky, Ohio.....	4	9	8.6	55.8							5
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	10	119	9.1	56.6				16			10
Arkansas, Louisiana, Texas.....	7	103	9.0	58.5				27			25
California.....	4	27	8.0	52.4							15
Total.....	24	263	8.9	57.1				46			55
Mechanics:											
Carpenters—											
New Jersey, New York, Pennsylvania, West Virginia.....	0	6	9.3	56.0							2
Illinois, Indiana, Kentucky, Ohio.....	6	11	9.6	59.3							18
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	10	133	9.4	57.8					6		18
Arkansas, Louisiana, Texas.....	8	252	9.2	56.2				5	1		19
California.....	4	25	8.0	49.9							6
Total.....	29	427	9.2	56.4				5	7		45
Machinists—											
New Jersey, New York, Pennsylvania, West Virginia.....	6	13	8.8	57.5							8
Illinois, Indiana, Kentucky, Ohio.....	4	13	9.2	58.5							5
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	7	66	9.6	59.2				6			4
Arkansas, Louisiana, Texas.....	3	50	8.0	49.9							12
California.....	4	31	8.0	51.4							13
Total.....	24	173	8.8	54.9				6			42
Other mechanics—											
New Jersey, New York, Pennsylvania, West Virginia.....	6	194	9.6	58.6				16			1
Illinois, Indiana, Kentucky, Ohio.....	6	142	9.4	58.1							26
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	9	132	9.0	56.5				8	10		17
Arkansas, Louisiana, Texas.....	11	292	8.7	52.0				4	3		18
California.....	4	170	8.0	52.8							103
Total.....	30	930	8.9	55.3				28	13		165
Mechanics' helpers:											
New Jersey, New York, Pennsylvania, West Virginia.....	2	2	9.0	54.0							
Illinois, Indiana, Kentucky, Ohio.....	2	12	8.3	50.0							
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	6	60	9.7	59.0				2			5
Arkansas, Louisiana, Texas.....	6	82	8.7	53.1							9
California.....	4	80	8.0	50.4							24
Total.....	18	236	8.7	53.5				2			38
Other employees:											
New Jersey, New York, Pennsylvania, West Virginia.....	6	57	9.8	60.4				4			5
Illinois, Indiana, Kentucky, Ohio.....	5	78	8.3	57.2	2			1			70
Iowa, Kansas, Missouri, Oklahoma, Wyoming.....	10	74	9.0	56.7				7	2		14
Arkansas, Louisiana, Texas.....	9	157	9.2	61.4	22			20	18		48
California.....	3	101	8.0	51.6							45
Total.....	29	467	8.8	57.7	24			32	20		152

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.																			
6 days.																5 days.			
Hours per day.																			
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9¼, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8¼, but less on 1 day.	8½	8¼, but less on 1 day.	8	8, but less on 1 day.	10

PIPE LINES—Concluded.

						2											
						1						3					
						5						88					
												47				4	
																12	
						8						138				16	
						4										2	
						9						40					
						69						95				31	
						101										19	
						183						135				52	
						5											
						8											
						40						16				38	
																18	
						53						16				56	
						142						2				35	
						101						57				13	
						27						68				140	
						59										67	
						329						127				268	
						1										1	
						2										10	
						43						10				41	
						26						6				56	
						72						16				108	
						48											
						5											
						7						44				15	
						3						31				56	
						63						75				71	

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES.

REFINING.										
Clay roasters:										
Massachusetts, New Jersey, New York	3	16	8.1	53.1						3
Maryland, Pennsylvania, West Virginia	5	65	8.1	56.6	2					60
Illinois, Indiana, Ohio	3	24	8.1	56.5					3	20
Kansas, Oklahoma, Wyoming	10	29	8.0	56.0					1	27
Louisiana, Texas	3	9	8.0	56.0						9
California	2	2	8.0	48.0						
Total	26	145	8.1	55.6	2				4	119
Coal passers and ashmen:										
Massachusetts, New Jersey, New York	5	137	8.0	50.2						37
Maryland, Pennsylvania, West Virginia	1	84	8.0	56.0						84
Illinois, Indiana, Ohio	4	282	8.7	60.4				13	121	128
Louisiana, Texas	1	158	8.0	48.0						
Total	11	661	8.3	54.7				13	121	249
Engineers and chillermen:										
Massachusetts, New Jersey, New York	8	85	8.0	52.2						44
Maryland, Pennsylvania, West Virginia	8	100	8.3	57.1	8					77
Illinois, Indiana, Ohio	6	51	8.4	56.3	2					36
Kansas, Oklahoma, Wyoming	16	116	8.1	56.9	3				5	106
Louisiana, Texas	5	73	8.0	53.8						53
California	2	7	8.0	51.4						3
Total	45	432	8.2	55.3	13				5	319
Filterers:										
Massachusetts, New Jersey, New York	2	7	8.0	48.0						
Maryland, Pennsylvania, West Virginia	3	36	8.0	56.0						36
Kansas, Oklahoma, Wyoming	7	23	8.6	60.0	3				1	19
Louisiana, Texas	6	18	8.0	54.7						15
Total	18	84	8.2	56.1	3				1	70
Firemen and assistant engineers:										
Massachusetts, New Jersey, New York	8	905	8.0	51.2						366
Maryland, Pennsylvania, West Virginia	9	544	8.0	54.4	5					413
Illinois, Indiana, Ohio	7	791	8.2	57.2	29			3		729
Kansas, Oklahoma, Wyoming	28	369	8.0	52.8	2				1	211
Louisiana, Texas	24	797	8.0	53.2						517
California	4	126	8.0	51.0						47
Total	80	3,532	8.1	53.6	36			3	1	2,283
Gaugers:										
Massachusetts, New Jersey, New York	6	20	8.2	52.6						9
Maryland, Pennsylvania, West Virginia	2	4	8.3	55.5						3
Illinois, Indiana, Ohio	3	15	8.4	58.8				3		12
Kansas, Oklahoma, Wyoming	18	55	8.2	57.0	2					52
Louisiana, Texas	19	120	8.0	54.6				1	1	93
California	4	20	8.0	54.4						16
Total	52	234	8.1	55.2	2			4	1	185

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.																	
6 days.														5 days.			
Hours per day.																	
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

REFINERIES.

								1				1	2			12
															1	
															1	
															2	
								1			1	2				16
													3			97
					20											158
					20								3			255
											1	1			3	37
						5						2			13	6
															2	20
															4	
					5						2	3			3	82
																7
															3	
																10
												13			2	537
					29										113	1
															155	
															2	278
															79	
					29							13			4	1163
											3				2	6
											1					
											1				4	20
															4	
											6				6	30

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

REFINING—Continued.										
Molders:										
Massachusetts, New Jersey, New York.....	4	68	8.0	50.9						25
Maryland, Pennsylvania, West Virginia.....	1	9	8.2	49.0						
Illinois, Indiana, Ohio.....	2	35	8.0	56.0						35
Kansas, Oklahoma, Wyoming.....	2	10	8.0	52.8						6
Louisiana, Texas.....	4	23	8.0	56.0						23
California.....	1	5	8.0	48.0						
Total.....	14	150	8.0	52.8						89
Molders (female):										
Illinois, Indiana, Ohio.....	2	8	8.8	52.5						
Oilers:										
Massachusetts, New Jersey, New York.....	4	21	8.0	50.9						8
Maryland, Pennsylvania, West Virginia.....	3	28	8.0	53.6						19
Kansas, Oklahoma, Wyoming.....	1	3	8.0	56.0						3
Louisiana, Texas.....	1	2	8.5	59.5					1	1
Total.....	9	54	8.0	52.9					1	31
Pressmen:										
Massachusetts, New Jersey, New York.....	6	128	8.0	49.7						29
Maryland, Pennsylvania, West Virginia.....	6	58	8.3	57.0	4					47
Illinois, Indiana, Ohio.....	6	111	8.0	56.3				2		109
Kansas, Oklahoma, Wyoming.....	9	41	8.0	56.0						41
Louisiana, Texas.....	4	46	8.0	50.3						13
Total.....	31	384	8.1	53.4	4			2		239
Press runners:										
Massachusetts, New Jersey, New York.....	3	11	8.0	56.0						11
Maryland, Pennsylvania, West Virginia.....	1	8	8.0	56.0						8
Total.....	4	19	8.0	56.0						19
Pumpmen:										
Massachusetts, New Jersey, New York.....	8	352	8.1	51.3						139
Maryland, Pennsylvania, West Virginia.....	8	130	8.2	56.0	7					98
Illinois, Indiana, Ohio.....	6	100	8.2	56.9	4					90
Kansas, Oklahoma, Wyoming.....	23	179	8.0	55.4					1	164
Louisiana, Texas.....	21	226	8.0	54.3					5	169
California.....	4	100	8.0	49.8						23
Total.....	70	1,087	8.1	53.6	11				6	683
Pumpmen's helpers:										
Massachusetts, New Jersey, New York.....	6	131	8.0	50.8						48
Maryland, Pennsylvania, West Virginia.....	4	125	8.0	55.2						112
Illinois, Indiana, Ohio.....	2	79	8.1	56.2					3	74
Kansas, Oklahoma, Wyoming.....	10	51	8.0	54.7						43
Louisiana, Texas.....	5	44	8.1	56.6					5	38
California.....	2	17	8.0	49.4						3
Total.....	29	447	8.0	54.0					8	318
Repairmen:										
Massachusetts, New Jersey, New York.....	4	18	8.0	48.4						1
Maryland, Pennsylvania, West Virginia.....	2	5	8.1	48.4						
Kansas, Oklahoma, Wyoming.....	3	11	8.0	49.5						2
Louisiana, Texas.....	2	2	8.0	52.0						1
Total.....	11	36	8.0	48.9						4

Number of employees working specified customary days per week and hours per day.																			
6 days.														5 days.					
Hours per day.																			
13	12	11½	11	10½	10	10, but less on 1 day.	9¾, but less on 1 day.	9½	9¼, but less on 1 day.	9¼, but less on 1 day.	9	9, but less on 1 day.	8¾, but less on 1 day.	8¾, but less on 1 day.	8½	8¼, but less on 1 day.	8, but less on 1 day.	8, but less on 1 day.	10

[illegible]

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

REFINERIES—Continued.

REFINING—continued.											
Retort, acid, and kettle men:											
Massachusetts, New Jersey, New York	4	28	8.0	53.0							18
Maryland, Pennsylvania, West Virginia	4	14	8.3	55.4							10
Illinois, Indiana, Ohio	1	23	8.0	56.0							23
Louisiana, Texas	4	19	8.0	56.0							19
California	1	1	8.0	56.0							1
Total	14	85	8.0	54.9							71
Still inspectors:											
Massachusetts, New Jersey, New York	3	13	8.3	55.7					2		7
Maryland, Pennsylvania, West Virginia	1	6	8.0	56.0							6
Illinois, Indiana, Ohio	1	4	8.0	56.0							4
Louisiana, Texas	1	2	8.0	56.0							2
Total	6	25	8.2	55.8					2		19
Stillmen:											
Massachusetts, New Jersey, New York	8	254	8.0	51.6							119
Maryland, Pennsylvania, West Virginia	9	119	8.3	56.8	8						95
Illinois, Indiana, Ohio	7	203	8.3	57.7	11						190
Kansas, Oklahoma, Wyoming	28	255	8.0	54.2	3						185
Louisiana, Texas	24	315	8.0	53.5							215
California	4	59	8.0	53.0							37
Total	80	1,205	8.1	54.2	22						841
Stillmen's assistants, chargers, and headers up:											
Massachusetts, New Jersey, New York	7	206	8.0	50.0							56
Maryland, Pennsylvania, West Virginia	5	179	8.1	55.6	2					6	149
Illinois, Indiana, Ohio	6	315	8.0	56.0							315
Kansas, Oklahoma, Wyoming	23	276	8.0	52.6							159
Louisiana, Texas	14	325	8.0	53.5							224
California	4	43	8.0	53.0							27
Total	59	1,344	8.0	53.6	2					6	930
Sweatermen:											
Massachusetts, New Jersey, New York	5	42	8.0	50.5							12
Maryland, Pennsylvania, West Virginia	4	17	8.0	53.6							12
Illinois, Indiana, Ohio	6	25	8.3	57.4	1						22
Kansas, Oklahoma, Wyoming	6	16	8.1	56.4					1		15
Louisiana, Texas	4	18	8.0	54.2							14
California	1	5	8.0	48.0							
Total	26	123	8.1	53.5	1					1	75
Testers:											
Massachusetts, New Jersey, New York	2	11	8.0	50.2							3
Maryland, Pennsylvania, West Virginia	2	26	8.1	52.8							14
Illinois, Indiana, Ohio	3	16	8.0	56.0							15
Kansas, Oklahoma, Wyoming	13	34	8.1	52.4					2		15
Louisiana, Texas	8	53	8.0	52.8							32
Total	28	139	8.0	52.9						2	79
Testers (female):											
Maryland, Pennsylvania, West Virginia	1	5	8.2	49.0							

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

[Number of employees working specified customary days per week and hours per day.																	
6 days.														5 days.			
Hours per day.																	
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8¾, but less on 1 day.	8¾, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

REFINERIES—Continued.

	1														103	
	1														13	
															4	
															4	
															13516	
	2														6710022	
	2														340	
															15022	
															11710116	
															406	
												1			295	
					2										45	
					2							1			43	
					1							11			8	
															1721	
					1							11			46	
												5				

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

REFINERIES—Continued.

REFINING—concluded.											
Testers' assistants:											
Massachusetts, New Jersey, New York	1	1	8.0	48.0							
Maryland, Pennsylvania, West Virginia	1	8	8.2	49.0							6
Illinois, Indiana, Ohio	1	6	8.0	56.0							4
Kansas, Oklahoma, Wyoming	5	16	8.0	53.5							11
Louisiana, Texas	1	4	8.0	56.0							4
Total	9	35	8.0	53.0							21
Treaters:											
Massachusetts, New Jersey, New York	8	32	8.2	51.7							11
Maryland, Pennsylvania, West Virginia	9	41	8.2	54.9	1						27
Illinois, Indiana, Ohio	7	28	8.6	58.9	2			1			16
Kansas, Oklahoma, Wyoming	25	63	8.2	56.6	2				2		55
Louisiana, Texas	20	57	8.1	55.2					4		44
California	4	14	8.0	52.6							8
Total	73	235	8.2	55.3	5			1	10		16
Treaters' helpers:											
Massachusetts, New Jersey, New York	7	38	8.2	51.2							10
Illinois, Indiana, Ohio	5	35	8.2	57.0				1	2		30
Kansas, Oklahoma, Wyoming	12	37	8.0	54.9					1		30
Louisiana, Texas	8	60	8.1	55.2					5		44
California	4	21	8.0	51.4							9
Total	36	191	8.1	54.3				1	8		123
Water purifiers:											
Massachusetts, New Jersey, New York	1	5	8.0	48.0							
Maryland, Pennsylvania, West Virginia	1	6	8.0	56.0							6
Kansas, Oklahoma, Wyoming	4	13	8.0	56.0							13
Total	6	24	8.0	54.3							19
Water tenders:											
Massachusetts, New Jersey, New York	5	99	8.0	50.1							27
Maryland, Pennsylvania, West Virginia	3	59	8.0	54.9							51
Illinois, Indiana, Ohio	6	42	8.2	54.0	2			1			20
Kansas, Oklahoma, Wyoming	6	22	8.4	54.5	2						9
Louisiana, Texas	5	37	8.0	56.0							37
California	3	34	8.0	50.1							9
Total	28	293	8.1	52.7	4			1			153
FILLING, PACKING, AND SHIPPING.											
Branders and painters:											
Massachusetts, New Jersey, New York	4	32	7.9	47.5							
Maryland, Pennsylvania, West Virginia	3	28	8.3	49.9							
Illinois, Indiana, Ohio	2	13	8.0	48.0							
Kansas, Oklahoma, Wyoming	1	4	8.0	48.0							
Louisiana, Texas	3	8	8.0	48.0							
California	2	11	8.0	48.0							
Total	15	96	8.1	48.4							
Branders and painters (female):											
Maryland, Pennsylvania, West Virginia	1	1	8.2	49.0							

Number of employees working specified customary days per week and hours per day.																			
6 days.														5 days.					
Hours per day.																			
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8¾, but less on 1 day.	8¾, but less on 1 day.	8½	8½, but less on 1 day.	8	8, but less on 1 day.	10

[illegible]

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

FILLING, PACKING, AND SHIPPING—continued.										
Fillers:										
Massachusetts, New Jersey, New York.....	7	36	8.0	47.9						
Maryland, Pennsylvania, West Virginia.....	6	51	8.4	50.5						
Illinois, Indiana, Ohio.....	5	43	8.1	48.4						
Kansas, Oklahoma, Wyoming.....	3	7	8.4	57.9					3	3
Louisiana, Texas.....	8	57	8.0	49.3						9
California.....	4	44	8.0	48.0						
Total.....	33	238	8.1	49.2					3	12
Fillers (female):										
Illinois, Indiana, Ohio.....	1	52	7.3	44.0						
Inspectors:										
Massachusetts, New Jersey, New York.....	4	5	8.0	48.0						
Maryland, Pennsylvania, West Virginia.....	4	20	8.2	49.2						
Illinois, Indiana, Ohio.....	2	8	8.9	53.3						
Kansas, Oklahoma, Wyoming.....	8	18	8.1	50.6					1	4
Louisiana, Texas.....	3	7	8.0	49.1						1
California.....	3	5	8.0	48.0						
Total.....	24	63	8.2	49.9					1	5
Mailers:										
Massachusetts, New Jersey, New York.....	3	9	8.0	48.0						
Maryland, Pennsylvania, West Virginia.....	1	2	8.2	49.0						
Illinois, Indiana, Ohio.....	1	7	9.0	54.0						
California.....	1	1	8.0	48.0						
Total.....	6	19	8.4	50.3						
Mailers (female):										
Maryland, Pennsylvania, West Virginia.....	1	3	7.3	44.0						
Packers:										
Massachusetts, New Jersey, New York.....	5	31	8.0	48.0						
Maryland, Pennsylvania, West Virginia.....	3	17	8.4	50.1						
Illinois, Indiana, Ohio.....	1	5	8.0	48.0						
Kansas, Oklahoma, Wyoming.....	3	5	8.0	52.8						3
Louisiana, Texas.....	1	51	8.0	48.0						
Total.....	13	109	8.1	48.6						3
Packers (female):										
Massachusetts, New Jersey, New York.....	2	123	8.0	48.0						
Maryland, Pennsylvania, West Virginia.....	1	12	7.3	44.0						
Illinois, Indiana, Ohio.....	1	40	7.8	46.7						
Total.....	4	175	7.9	47.4						
Tank-car loaders:										
Massachusetts, New Jersey, New York.....	6	23	8.4	51.6				1		2
Maryland, Pennsylvania, West Virginia.....	7	57	8.2	49.4						
Illinois, Indiana, Ohio.....	7	31	8.7	52.0						
Kansas, Oklahoma, Wyoming.....	27	75	8.2	47.7					1	53
Louisiana, Texas.....	18	64	8.1	52.9				1	4	29
California.....	4	11	8.0	48.0						
Total.....	69	261	8.2	52.2				2	5	84

Number of employees working specified customary days per week and hours per day.																	
6 days.														5 days.			
Hours per day.																	
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

[illegible]

142 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Num-ber of estab-lish-ments.	Num-ber of em-ploy-ees.	Aver-age hours per day.	Aver-age full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

FILLING, PACKING, AND SHIPPING—concluded.										
Testers:										
Massachusetts, New Jersey, New York	1	4	8.0	48.0						
Maryland, Pennsylvania, West Virginia	1	9	8.2	49.0						
Total	2	13	8.1	48.7						
Weighers:										
Massachusetts, New Jersey, New York	4	18	7.9	47.5						
Maryland, Pennsylvania, West Virginia	2	13	8.1	48.6						
Illinois, Indiana, Ohio	2	15	8.1	54.7						11
Kansas, Oklahoma, Wyoming	2	2	8.5	55.5					1	
California	3	10	8.0	48.0						
Total	13	58	8.0	50.0					1	11
TRANSPORTATION—RAILROAD, MOTOR, AND TEAM.										
Brakemen:										
Massachusetts, New Jersey, New York	3	36	7.9	47.5						
Maryland, Pennsylvania, West Virginia	2	10	8.8	49.5						
Illinois, Indiana, Ohio	1	2	8.0	48.0						
Total	6	48	8.1	47.9						
Chauffeurs:										
Massachusetts, New Jersey, New York	6	51	8.0	48.0						
Maryland, Pennsylvania, West Virginia	6	37	8.4	50.3						
Illinois, Indiana, Ohio	6	47	9.3	56.0						
Kansas, Oklahoma, Wyoming	18	44	8.3	52.1					14	8
Louisiana, Texas	11	65	8.2	50.1	2					3
California	4	31	8.0	48.0						
Total	51	275	8.4	50.8	2				14	11
Conductors:										
Massachusetts, New Jersey, New York	3	12	8.0	48.0						
Maryland, Pennsylvania, West Virginia	1	3	8.8	49.7						
Illinois, Indiana, Ohio	1	12	10.7	75.0		5	7			
Total	5	27	9.3	60.2		5	7			
Engineers, railroad:										
Massachusetts, New Jersey, New York	3	23	8.0	48.0						
Maryland, Pennsylvania, West Virginia	2	7	8.5	49.6						
Illinois, Indiana, Ohio	1	12	11.0	77.0		12				
Louisiana, Texas	6	18	8.0	49.1						2
California	2	3	8.0	48.0						
Total	14	63	8.6	54.0		12				2
Firemen:										
Massachusetts, New Jersey, New York	3	11	8.0	47.7						
Maryland, Pennsylvania, West Virginia	1	3	9.2	51.7						
Illinois, Indiana, Ohio	1	14	11.0	77.0		14				
Louisiana, Texas	3	8	8.0	51.0						3
Total	8	36	9.3	60.2		14				3

¹3 work less than 9 hours on 1 day of each week.

Number of employees working specified customary days per week and hours per day.																
6 days.													5 days.			
Hours per day.																
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

[illegible]

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

TRANSPORTATION—RAILROAD, MOTOR, AND TEAM—concluded.										
Teamsters and drivers:										
Massachusetts, New Jersey, New York	4	23	8.4	50.3						
Maryland, Pennsylvania, West Virginia	3	126	8.3	50.0						
Illinois, Indiana, Ohio	5	26	8.8	53.4				1	* 1	
Kansas, Oklahoma, Wyoming	5	16	8.3	49.9						
Louisiana, Texas	5	24	8.0	49.9						5
California	4	65	8.9	53.6						
Total	26	280	8.5	51.0				1	* 1	5
Trackmen:										
Massachusetts, New Jersey, New York	1	8	8.0	48.0						
Maryland, Pennsylvania, West Virginia	1	12	8.0	48.0						
Illinois, Indiana, Ohio	1	48	9.0	54.0						
Kansas, Oklahoma, Wyoming	2	4	8.0	48.0						
Total	5	72	8.7	52.0						
MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR.										
Blacksmiths:										
Massachusetts, New Jersey, New York	6	18	7.9	47.3						
Maryland, Pennsylvania, West Virginia	6	35	8.2	49.6						
Illinois, Indiana, Ohio	7	41	8.1	48.6					1	
Kansas, Oklahoma, Wyoming	13	40	7.6	45.7						
Louisiana, Texas	11	33	8.1	48.4						
California	4	12	8.0	48.0						
Total	47	179	8.0	47.9						1
Boiler makers:										
Massachusetts, New Jersey, New York	6	377	8.0	47.8						2
Maryland, Pennsylvania, West Virginia	6	137	8.1	48.8					1	1
Illinois, Indiana, Ohio	7	168	8.1	48.8				2		
Kansas, Oklahoma, Wyoming	23	104	7.9	47.6						2
Louisiana, Texas	14	273	8.0	48.1						2
California	4	94	8.0	48.0						
Total	60	1,153	8.0	48.1				2	1	7
Boiler makers' helpers:										
Massachusetts, New Jersey, New York	6	470	7.9	47.6						
Maryland, Pennsylvania, West Virginia	4	391	8.1	48.9						5
Illinois, Indiana, Ohio	6	580	7.7	46.1						
Kansas, Oklahoma, Wyoming	18	120	8.0	48.1						3
Louisiana, Texas	10	833	8.0	48.0						
California	4	142	8.0	48.0						
Total	48	2,536	7.9	47.6						8
Bricklayers and masons:										
Massachusetts, New Jersey, New York	7	101	7.9	47.6						
Maryland, Pennsylvania, West Virginia	5	65	8.0	48.2						
Illinois, Indiana, Ohio	6	68	8.0	48.0						
Kansas, Oklahoma, Wyoming	20	68	7.9	47.6						1
Louisiana, Texas	12	271	8.0	48.2						4
California	2	25	8.0	48.0						
Total	52	598	8.0	48.0						5

* Works less than 9 hours on 1 day of each week.

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Continued.

Number of employees working specified customary days per week and hours per day.																	
6 days.															5 days.		
Hours per day.																	
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

REFINERIES—Continued.

						2			5				16			
					2				8		2	114				
					4						10				10	
											5				11	
											1				18	
											61				4	
					8				13		79	114	16		43	
															8	
											48				12	
															4	
											48				12	12
															6	5
											2	28	3		4	4
					2	12					1				4	22
											1				14	25
					1										6	26
															12	
					3	12					4	28	3		16	61
																51
											4	61	35	183	90	42
					41						5				70	25
											5				11	109
											1				75	22
															81	188
															94	1
					41						15	61	35	183	241	410
																157
											1		52	215	106	31
											11	284	10		101	66
					50						1				68	441
															111	5
															363	1
															469	
															142	
					50						13	294	52	215	570	821
																513
											1		13	36	31	8
											2	30			26	2
					2						1					55
															56	10
					2										62	203
															25	
					4						4	30	13	36	119	349
																38

146 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.										
Carpenters:										
Massachusetts, New Jersey, New York	3	183	7.8	47.1						
Maryland, Pennsylvania, West Virginia	7	141	8.2	49.5						
Illinois, Indiana, Ohio	7	108	7.5	45.3						
Kansas, Oklahoma, Wyoming	25	121	8.0	48.0						2
Louisiana, Texas	14	346	8.0	48.0						
California	4	96	8.0	48.0						
Total	65	995	8.0	47.8						2
Coopers:										
Massachusetts, New Jersey, New York	4	92	7.9	47.3						
Maryland, Pennsylvania, West Virginia	6	78	8.4	51.7					9	
Illinois, Indiana, Ohio	1	4	8.0	48.0						
Kansas, Oklahoma, Wyoming	5	8	8.2	51.5						2
Louisiana, Texas	4	24	8.0	48.0						
California	3	33	8.0	48.0						
Total	23	239	8.1	49.0					9	2
Crane operators:										
Massachusetts, New Jersey, New York	5	15	8.1	48.6						
Maryland, Pennsylvania, West Virginia	3	13	8.2	49.4						
Illinois, Indiana, Ohio	5	45	9.4	58.3				7		1
Kansas, Oklahoma, Wyoming	2	5	7.9	47.2						
Louisiana, Texas	2	8	8.0	48.0						
California	1	1	8.0	48.0						
Total	18	87	8.8	53.6				7		1
Crane riggers:										
Massachusetts, New Jersey, New York	3	48	8.0	47.9						
Maryland, Pennsylvania, West Virginia	2	66	8.2	49.1						
Illinois, Indiana, Ohio	1	1	8.0	48.0						
Kansas, Oklahoma, Wyoming	1	1	9.0	54.0						
Louisiana, Texas	1	11	8.0	48.0						
California	3	77	8.0	48.0						
Total	11	204	8.1	48.4						
Driving-machine operators:										
Massachusetts, New Jersey, New York	1	2	8.0	48.0						
Maryland, Pennsylvania, West Virginia	2	7	8.2	49.3						
Total	3	9	8.2	49.0						
Electricians:										
Massachusetts, New Jersey, New York	7	58	7.9	48.1						4
Maryland, Pennsylvania, West Virginia	5	39	8.2	50.2					1	3
Illinois, Indiana, Ohio	6	27	8.0	49.0						3
Kansas, Oklahoma, Wyoming	11	30	8.0	48.9						4
Louisiana, Texas	9	68	8.0	48.1						
California	4	29	8.0	48.8						3
Total	42	251	8.0	48.7					1	17

Number of employees working specified customary days per week and hours per day.																		
6 days.													5 days.					
Hours per day.																		
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8¾, but less on 1 day.	8¾, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	8, but less on 1 day.	10

[illegible]

148 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.					
					7 days.					
					Hours per day.					
					12	11	10½	10	9	8

REFINERIES—Continued.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—continued.										
Helpers: ⁴										
Massachusetts, New Jersey, New York.....	7	362	7.9	47.5						1
Maryland, Pennsylvania, West Virginia.....	5	259	8.2	49.2					4	
Illinois, Indiana, Ohio.....	7	291	8.1	48.6						
Kansas, Oklahoma, Wyoming.....	16	122	8.2	49.1						
Louisiana, Texas.....	13	956	8.0	48.0						3
California.....	4	282	8.0	48.0						3
Total.....	52	2,272	8.0	48.2					4	7
Laborers:										
Massachusetts, New Jersey, New York.....	8	2,183	8.0	48.5						63
Maryland, Pennsylvania, West Virginia.....	8	1,661	8.2	49.5				1	36	1
Illinois, Indiana, Ohio.....	7	1,514	9.1	55.6	⁵ 3			9	152	49
Kansas, Oklahoma, Wyoming.....	28	1,354	8.1	49.8					60	90
Louisiana, Texas.....	23	3,832	8.0	48.5						144
California.....	4	595	8.0	48.0						
Total.....	78	11,139	8.2	49.7	⁵ 3			10	248	347
Laborers (female):										
Maryland, Pennsylvania, West Virginia.....	1	28	7.4	44.4						
Illinois, Indiana, Ohio.....	1	1	8.0	56.0						1
Total.....	2	29	7.4	44.8						1
Lead burners:										
Massachusetts, New Jersey, New York.....	4	9	7.9	47.3						
Maryland, Pennsylvania, West Virginia.....	3	5	8.2	48.9						
Illinois, Indiana, Ohio.....	2	7	8.0	48.0						
Kansas, Oklahoma, Wyoming.....	4	5	7.9	48.8						1
Louisiana, Texas.....	6	15	8.3	51.2						3
California.....	4	9	8.0	48.0						
Total.....	23	50	8.1	49.0						4
Machinists:										
Massachusetts, New Jersey, New York.....	7	202	7.9	47.6						
Maryland, Pennsylvania, West Virginia.....	6	195	8.2	49.2					2	
Illinois, Indiana, Ohio.....	6	137	8.2	48.9						
Kansas, Oklahoma, Wyoming.....	18	60	8.1	49.1						2
Louisiana, Texas.....	15	144	8.0	48.1						2
California.....	4	75	8.0	48.2						2
Total.....	56	813	8.1	48.5					2	6
Painters:										
Massachusetts, New Jersey, New York.....	7	69	8.0	47.8						
Maryland, Pennsylvania, West Virginia.....	5	51	8.2	49.6					2	
Illinois, Indiana, Ohio.....	4	73	7.6	45.5						
Kansas, Oklahoma, Wyoming.....	18	57	8.1	49.8						9
Louisiana, Texas.....	9	129	8.0	48.0						
California.....	4	29	8.0	48.0						
Total.....	47	408	8.0	48.0					2	9

⁴ Not including boiler makers' and pipe fitters' helpers.

⁵ 2 work less than 12 hours on 2 days of each week.

Number of employees working specified customary days per week and hours per day.																
6 days.														5 days.		
Hours per day.																
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8, but less on 1 day.	10

				5					1				17	94		178	12	59	
				2	23				1	58	178	6				72	102	95	
										25						4	92	5	
																355	589	9	
				7	23				1	1	83	184	17	94		609	1074	168	
	4			2			94	1		5		134	608			617	505	150	
			3	11						71	1,302					221	18		
				273						872							141	12	
			6	20			15			138							1066		
										65						771	2787	24	
																	595		
	4		6	3	306		109	1		1151	1,302	134	608		1,609	5112	186		
											2							26	
											2							26	
											4					3	4	2	
																1	7		
										4						3	3	1	
																5	9		
										4	4					7	28	3	
				1						2	177	22	62			81	11	26	
				7	38					13						13			
										8							7	72	
										1						29	50		
																111	73	1	
				8	38					24	177	22	62		123	252	99		
				1						1	36	16	20		25	4	4		
				1						5					11				
										5						10	57		
										1						43			
																56			
																29			
				2						12	36	16	20		108	142	61		

150 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

REFINERIES—Continued.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIRS—continued.											
Pipe fitters:											
Massachusetts, New Jersey, New York	7	271	8.0	47.8							3
Maryland, Pennsylvania, West Virginia	7	241	8.2	49.5						6	4
Illinois, Indiana, Ohio	7	113	8.9	54.1						6	
Kansas, Oklahoma, Wyoming	25	143	8.2	50.2						6	10
Louisiana, Texas	18	180	8.1	48.5							3
California	4	77	8.0	48.0							
Total	68	1,025	8.2	49.4						18	20
Pipe fitters' helpers:											
Massachusetts, New Jersey, New York	7	457	8.0	48.0							1
Maryland, Pennsylvania, West Virginia	6	488	8.2	49.4						9	6
Illinois, Indiana, Ohio	7	236	8.7	52.4					2	2	2
Kansas, Oklahoma, Wyoming	19	301	8.1	49.6							29
Louisiana, Texas	12	1,377	8.0	48.2							49
California	4	361	8.0	48.0							
Total	55	3,220	8.1	48.8					2	11	87
Property keepers:											
Massachusetts, New Jersey, New York	3	22	8.0	48.0							
Maryland, Pennsylvania, West Virginia	2	19	8.1	48.8							
Illinois, Indiana, Ohio	4	21	8.0	48.3						1	
Kansas, Oklahoma, Wyoming	9	23	8.2	56.5						3	18
California	2	2	8.0	52.0							1
Total	20	87	8.1	50.6						4	19
Property keepers (female):											
Maryland, Pennsylvania, West Virginia	1	1	8.2	49.0							
Tinsmiths:											
Massachusetts, New Jersey, New York	3	12	8.0	48.0							
Maryland, Pennsylvania, West Virginia	1	10	8.2	49.0							
Illinois, Indiana, Ohio	3	14	7.4	44.3							
Kansas, Oklahoma, Wyoming	1	1	8.0	48.0							
Louisiana, Texas	3	16	8.0	48.0							
California	2	2	8.0	48.0							
Total	13	55	7.9	47.2							
Welders:											
Massachusetts, New Jersey, New York	5	33	7.9	47.5							
Maryland, Pennsylvania, West Virginia	2	17	8.2	49.0							
Illinois, Indiana, Ohio	4	36	7.4	44.5							
Kansas, Oklahoma, Wyoming	14	27	8.0	48.5							1
Louisiana, Texas	8	29	8.0	48.0							
California	3	6	8.0	48.0							
Total	36	147	7.9	47.3							1

Number of employees working specified customary days per week and hours per day.															
6 days.													5 days.		
Hours per day.															
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8	8, but less on 1 day.	10

[illegible]

152 WAGES AND HOURS OF LABOR IN PETROLEUM INDUSTRY.

TABLE F.—EMPLOYEES CLASSIFIED BY SPECIFIED CUSTOMARY DAYS
1920—

Occupation and district.	Number of establishments.	Number of employees.	Average hours per day.	Average full-time hours per week.	Number of employees working specified customary days per week and hours per day.						
					7 days.						
					Hours per day.						
					12	11	10½	10	9	8	

REFINERIES—Concluded.

MISCELLANEOUS LABOR, MAINTENANCE, AND REPAIR—concluded.											
Other mechanics:											
Massachusetts, New Jersey, New York	7	126	8.0	48.1							5
Maryland, Pennsylvania, West Virginia	4	96	8.2	49.4					3		
Illinois, Indiana, Ohio	7	142	8.7	52.9				2	1		5
Kansas, Oklahoma, Wyoming	22	116	8.1	50.4					2		22
Louisiana, Texas	13	202	8.0	43.2							12
California	4	46	8.0	48.0							
Total	57	723	8.2	49.6					2	6	44
GUARDING, ETC.											
Watchmen:											
Massachusetts, New Jersey, New York	8	254	8.5	53.9	6	24	1			1	60
Maryland, Pennsylvania, West Virginia	6	118	8.9	59.4	7	22		1	2		65
Illinois, Indiana, Ohio	6	70	11.2	73.2	24						14
Kansas, Oklahoma, Wyoming	25	91	8.7	60.1	12	1			4	5	60
Louisiana, Texas	16	170	8.4	55.9	16						94
California	4	78	8.0	52.8							47
Total	65	781	8.7	57.5	8	98	2	1	6	6	340
Other employees:											
Massachusetts, New Jersey, New York	8	514	8.1	50.5							127
Maryland, Pennsylvania, West Virginia	9	491	8.5	52.1	18			1			32
Illinois, Indiana, Ohio	7	634	8.5	53.4				24	24		111
Kansas, Oklahoma, Wyoming	22	370	8.1	52.6	2				3	19	159
Louisiana, Texas	17	639	8.0	52.7						7	360
California	4	291	8.0	49.2							41
Total	67	2,939	8.2	52.0	20			25	27	61	830

⁶ Includes 6 at 13 hours.

⁷ Includes 7 at 13 hours.

⁸ Includes 13 at 13 hours.

PER WEEK AND HOURS PER DAY, BY OCCUPATIONS AND DISTRICTS,
Concluded.

Number of employees working specified customary days per week and hours per day.																			
6 days.															5 days.				
Hours per day.																			
13	12	11½	11	10½	10	10, but less on 1 day.	9½, but less on 1 day.	9½	9½, but less on 1 day.	9½, but less on 1 day.	9	9, but less on 1 day.	8½, but less on 1 day.	8½, but less on 1 day.	8½	8½, but less on 1 day.	8	8, but less on 1 day.	10

REFINERIES—Concluded.

.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	1	2	45	.....	43	14	14	.....
.....	.....	.....	.....	.....	9	42	.....	.....	.....	41	88	.....	.....	.....	1	4	32	9	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	80	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2	174	13	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46	.....	.....	.....
.....	.....	.....	.....	.....	9	44	.....	.....	.....	54	89	2	45	1	49	347	36	.....	.....
.....	.....	.....	.....	.....	3	.....	.....	1	.....	2	.....	.....	.....	.....	.....	162	.....	.....	.....
3	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	9	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	58	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31	.....	.....	.....
3	29	.....	.....	.....	3	.....	.....	1	.....	4	.....	.....	.....	.....	.....	288	.....	.....	.....
.....	9	.....	1	.....	.....	.....	.....	10	2	3	.....	30	110	.....	62	130	30	.....	.....
.....	.....	.....	.....	.....	31	.....	.....	.....	2	19	359	.....	.....	.....	13	3	.....	.....	.....
.....		1		76	1		1			92				2	1	165	114		
.....										3					2	178	6		
.....										3					2	264	3		
.....										2						248			
.....	9		2		107	1		11	4	122	359	30	110	2	78	988	153		

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