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WAGES AND HOURS OF LABOR SERIES

**WAGES AND HOURS OF LABOR
IN THE AUTOMOBILE INDUSTRY
1922**



OCTOBER, 1923

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BULLETIN OF THE U. S. BUREAU OF LABOR STATISTICS

NO. 348

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WAGES AND HOURS OF LABOR IN THE AUTOMOBILE INDUSTRY, 1922.

INTRODUCTION AND SUMMARY.

This report presents the results of a study of wages and hours of labor in the automobile industry in 1922.

The information herein compiled covers 54,930 male wage earners and 1,379 female wage earners working in 49 representative establishments in 7 States: namely, Michigan, Ohio, New York, Indiana, Pennsylvania, Wisconsin, and Illinois.

The establishments canvassed are engaged in the manufacture of passenger cars, trucks, bodies, or parts.

The data were drawn from a representative pay roll in 1922. October records were taken for 24 establishments, November for 14 establishments, September for 5 establishments, December for 3 establishments, August for 2 establishments, and July records for 1 establishment. All of the data, therefore, except for 11 establishments are for October and November.

The tables show earnings per hour, full-time or customary hours of labor per week, hours and days actually worked, and earnings actually received in the representative pay period taken. These figures are shown by occupation, sex, and State. In addition the report presents other pertinent information concerning this industry.

A summary of the average full-time hours per week, average earnings per hour, average full-time earnings per week, and classified full-time hours per week for each occupation, and for all occupations combined are shown in Table 1. The group designated as "Other employees" includes employees in occupations each too few in number to warrant a separate classification. It will be observed at the end of the table that the average full-time hours per week are 50.1 for males and 50.3 for females; that the average earnings per hour are \$0.662 for males and \$0.438 for females; and that the average full-time earnings per week are \$33.19 for males and \$22.05 for females.

An inspection of the averages for the several occupations shows that the average earnings per hour of males (apprentices excepted) range from \$0.495 for laborers to \$0.931 for varnishers, stripers, and letterers, and of females from \$0.352 for inspectors to \$0.680 for other skilled employees.

TABLE 1.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION AND SEX, 1922.

Occupation and sex.	Number of establishments.	Number of employees.	Average full-time hours per week.	Average earnings per hour.	Average full-time earnings per week.	Per cent of employees whose full-time hours per week were—												
						44½	48	Over 48 and under 49½	49½	50	Over 50 and under 54.	54	55	Over 55 and under 60.	60	Over 60 and under 72.	72	Over 72.
Apprentices, male.....	19	300	52.5	\$0.385	\$20.21	.....	23	(1)	1	16	1	.....	59	.....	.....	.....	.....	.....
Assemblers, axle and frame, male.....	37	1,127	49.6	.675	33.45	14	19	(1)	2	49	1	6	9	.....	.....	.....	.....	.....
Assemblers, chassis, male.....	41	1,357	50.2	.647	32.48	7	16	(1)	5	49	3	8	12	.....	.....	.....	.....	.....
Assemblers, final, male.....	46	3,108	50.3	.672	33.82	2	23	(1)	9	44	1	7	13	.....	.....	.....	.....	.....
Assemblers, final, female.....	7	170	49.1	.621	30.52	.....	58	.....	6	24	13	.....	.....	.....	.....	.....	.....	.....
Assemblers, motor, male.....	41	2,147	50.0	.661	33.03	5	27	(1)	6	45	1	8	9	.....	.....	.....	.....	.....
Assemblers, motor, female.....	2	2	52.5	.485	25.47	.....	.....	.....	.....	50	.....	.....	.....	.....	.....	.....	.....	.....
Bench hands, machine shop, male.....	35	2,176	50.0	.670	33.47	9	21	(1)	3	47	1	8	11	.....	.....	.....	.....	.....
Bench hands, machine shop, female.....	4	14	49.6	.546	27.10	.....	36	.....	.....	50	14	.....	.....	.....	.....	.....	.....	.....
Blacksmiths, skilled, male.....	34	388	50.0	.810	40.54	1	43	.....	2	34	.....	3	17	.....	.....	.....	.....	.....
Blacksmiths, general, male.....	34	656	49.6	.698	34.62	5	53	(1)	1	21	1	4	14	.....	1	.....	(1)	.....
Body builders, male.....	26	1,604	50.7	.718	36.41	.....	24	(1)	2	47	1	9	16	.....	.....	.....	.....	.....
Boring-mill operators, male.....	30	392	50.2	.701	35.22	5	22	.....	5	46	(1)	11	11	.....	.....	.....	.....	.....
Drill-press operators, male.....	42	3,443	49.6	.644	31.96	9	26	(1)	4	47	(1)	3	11	.....	.....	.....	.....	.....
Drill-press operators, female.....	5	44	51.4	.447	22.99	.....	2	23	.....	11	57	.....	7	.....	.....	.....	.....	.....
Gear-cutter operators, male.....	30	497	50.2	.678	34.07	9	22	.....	2	41	(1)	13	13	.....	.....	.....	.....	.....
Grinding-machine operators, male.....	38	2,574	50.0	.710	35.47	5	30	(1)	2	46	(1)	2	15	.....	.....	.....	.....	.....
Grinding-machine operators, female.....	2	3	52.9	.572	30.28	.....	.....	33	.....	.....	.....	67	.....	.....	.....	.....	.....	.....
Hardeners, male.....	29	667	51.7	.676	34.97	6	42	.....	1	23	(1)	2	16	.....	1	.....	8	.....
Helpers, male.....	43	1,042	50.8	.531	26.95	2	26	.....	1	8	39	1	6	17	(1)	.....	1	.....
Helpers, female.....	1	7	44.5	.381	16.95	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Inspectors, male.....	44	2,808	50.1	.608	30.45	6	21	.....	5	50	(1)	5	13	.....	.....	.....	.....	.....
Inspectors, female.....	7	197	51.2	.352	18.03	.....	.....	3	7	45	38	.....	7	.....	.....	.....	.....	.....
Laborers, male.....	47	5,982	50.2	.495	24.86	3	26	(1)	5	46	(1)	4	14	(1)	(1)	(1)	.....	.....
Laborers, female.....	5	46	50.5	.385	19.46	.....	.....	.....	80	17	.....	.....	2	.....	.....	.....	.....	.....
Lathe operators, male.....	41	2,950	49.5	.689	34.13	10	30	(1)	4	42	(1)	2	12	.....	.....	.....	.....	.....
Lathe operators, female.....	3	12	52.0	.463	24.07	.....	.....	8	.....	83	.....	.....	.....	.....	.....	.....	.....	.....
Machinists, male.....	41	1,291	50.0	.715	35.78	5	29	(1)	2	46	(1)	3	15	.....	.....	.....	.....	.....
Milling-machine operators, male.....	39	1,591	50.0	.659	32.94	9	24	(1)	5	47	(1)	4	10	.....	.....	.....	.....	.....
Milling-machine operators, female.....	3	14	50.7	.394	19.98	.....	.....	43	.....	7	50	.....	.....	.....	.....	.....	.....	.....
Painters, general, male.....	47	2,114	50.7	.733	37.17	2	23	.....	10	47	1	6	11	.....	.....	.....	.....	.....
Paint sprayers, male.....	34	177	50.6	.723	36.56	2	12	.....	7	56	2	7	13	.....	.....	.....	.....	.....
Planer and shaper operators, male.....	21	165	49.3	.738	36.40	2	60	.....	.....	25	1	2	10	.....	.....	.....	.....	.....
Polishers and buffers, male.....	28	564	50.4	.756	38.08	5	27	.....	2	40	(1)	13	13	.....	.....	.....	.....	.....
Punch-press operators, male.....	27	1,096	49.4	.715	35.31	3	61	.....	1	19	(1)	1	14	.....	.....	.....	.....	.....
Sand blasters, male.....	32	480	50.6	.618	31.29	4	27	(1)	2	48	(1)	4	14	.....	.....	.....	1	.....
Screw-machine operators, male.....	34	1,673	50.2	.688	34.56	9	19	.....	1	47	(1)	6	18	.....	.....	.....	.....	.....

Screw-machine operators, female	1	10	50.0	.399	19.95				100									
Sewing-machine operators, male	11	101	49.0	.748	36.65		76		11		12	1						
Sewing-machine operators, female	27	505	50.5	.442	22.32		18	1	14	39	10	4	12					
Sheet-metal workers, skilled, male	32	779	50.7	.780	39.53	16	9	(1)	2	30	1	17	24					
Sheet-metal workers, general, male	35	1,304	50.2	.656	32.92	(1)	27	(1)	6	48	1	10	8					
Testers, final and road, male	41	666	50.5	.610	30.80	6	9	(1)	4	59	1	7	14					
Testers, motor, male	38	489	51.2	.633	32.43	2	5		8	54	1	12	18					
Toolmakers, male	40	1,097	50.0	.769	38.47	(1)	28	(1)	6	52	(1)	6	8					
Top builders, male	36	1,410	50.8	.778	39.55	1	18	(1)	13	39	1	11	17					
Top builders, female	5	18	51.8	.468	24.26			22		17	22	39						
Trim bench hands, male	19	182	49.4	.595	29.40	3	54		7	18	2	15	2					
Trim bench hands, female	18	202	50.6	.458	22.14	1	14		5	49	25	2	4					
Varnishers, strippers, and letterers, male	37	762	50.8	.931	47.26	3	19	(1)	9	38	1	13	16					
Varnish rubbers, male	25	501	50.9	.870	44.27		18		16	39	1	(1)	26					
Other skilled employees, male	37	1,659	49.5	.710	35.15		47	1	5	37	(1)	3	8					
Other skilled employees, female	3	15	49.0	.680	33.34		73		7	20								
Other employees, male	47	3,611	49.9	.644	32.13	13	20	(1)	5	48	(1)	2	7	1	(1)	(1)	1	2
Other employees, female	10	120	49.1	.471	23.15	10	35			44	6		5					
All occupations, male	49	54,930	50.1	.662	33.19	5	26	(1)	5	44	(1)	6	13	(1)	(1)	(1)	(1)	(1)
All occupations, female	29	1,379	50.3	.438	22.05	2	20	2	8	39	19	2	7					
All occupations, male and female	49	56,309	50.1	.657	32.92	5	26	(1)	5	44	1	5	13	(1)	(1)	(1)	(1)	(1)

¹ Less than 1 per cent.

Table 2 shows for each of 14 of the most important occupations the number of establishments, the number of employees, the average earnings per hour, and the per cent of employees at each classified group of earnings per hour.

Data are shown for males in all and for females in 7 of the 14 selected occupations, no females being found in the other 7. The males in these particular occupations represent 38 per cent of the total number of males covered by the study, and the females represent 43 per cent of the total number of females. The males and females combined represent 38 per cent of all employees (56,309) covered.

In reading line 1 of the table it will be observed that data are shown for "Assemblers, axle and frame, male," for 37 establishments and 1,127 employees; that the average earnings per hour were \$0.675; that less than 1 per cent of the 1,127 employees earned 25 and under 30 cents per hour; 1 per cent earned 30 and under 40 cents; 6 per cent earned 40 and under 50 cents; 19 per cent earned 50 and under 60 cents; 29 per cent earned 60 and under 70 cents; 29 per cent earned 70 and under 80 cents; 13 per cent earned 80 and under 90 cents; 2 per cent earned 90 and under 100 cents; and that less than 1 per cent earned 100 and under 125 cents per hour.

TABLE 2.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR FOR EMPLOYEES IN 14 SELECTED OCCUPATIONS, BY SEX, 1922.

Occupation and sex.	Number of establishments.	Number of employees.	Average earnings per hour.	Per cent of employees whose earnings per hour were—																
				Under 20 cents.	20 and under 25 cents.	25 and under 30 cents.	30 and under 40 cents.	40 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 and under 100 cents.	100 and under 125 cents.	125 and under 150 cents.	150 and under 175 cents.	175 and under 200 cents.	200 and under 225 cents.	225 cents and over.	
Assemblers, axle and frame, male.....	37	1, 127	\$0.675	.....	.....	(1)	1	6	19	29	29	13	2	(1)	.....	.....	.....	.....	.....
Assemblers, chassis, male.....	41	1, 357	.647	.....	.....	(1)	2	11	20	33	17	15	2	(1)	.....	.....	.....	.....	.....
Assemblers, motor, male.....	41	2, 147	.661	.....	.....	(1)	1	11	15	34	25	14	1	(1)	(1)	(1)	.....	.....	.....
Assemblers, motor, female.....	2	2	.485	.....	.....	.....	.....	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Drill-press operators, male.....	42	3, 443	.644	.....	.....	(1)	4	13	22	21	23	15	2	(1)	(1)	.....	.....	.....	.....
Drill-press operators, female.....	5	44	.447	.....	.....	2	23	57	16	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Grinding-machine operators, male.....	38	2, 574	.710	.....	.....	(1)	1	4	18	24	28	19	5	1	.....	.....	.....	.....	.....
Grinding-machine operators, female.....	2	3	.572	.....	.....	.....	33	.....	.....	33	33	.....	.....	.....	.....	.....	.....	.....	.....
Lathe operators, male.....	41	2, 950	.689	.....	.....	.....	1	6	18	28	26	16	4	1	.....	.....	.....	.....	.....
Lathe operators, female.....	3	12	.463	.....	.....	.....	17	60	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milling-machine operators, male.....	39	1, 591	.659	.....	.....	(1)	2	10	22	25	25	11	2	2	.....	.....	.....	.....	.....
Milling-machine operators, female.....	3	14	.394	.....	.....	29	21	43	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Screw-machine operators, male.....	34	1, 673	.688	(1)	.....	.....	1	4	17	33	26	13	5	(1)	.....	.....	.....	.....	.....
Screw-machine operators, female.....	1	10	.399	.....	.....	.....	40	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sewing-machine operators, male.....	11	101	.748	.....	1	.....	.....	4	9	17	15	49	4	1	.....	.....	.....	.....	.....
Sewing-machine operators, female.....	27	505	.442	.....	2	6	26	38	22	5	1	(1)	.....	.....	.....	.....	.....	.....	.....
Sheet-metal workers, skilled, male.....	32	779	.780	.....	.....	.....	.....	1	18	17	24	20	10	7	1	(1)	(1)	(1)	(1)
Testers, final and road, male.....	41	666	.610	.....	.....	.....	(1)	13	40	26	11	6	2	1	(1)	(1)	(1)	(1)	(1)
Toolmakers, male.....	40	1, 097	.769	.....	.....	(1)	(1)	4	23	39	20	7	7	.....	(1)	(1)	(1)	(1)	(1)
Varnishers, strippers and letterers, male.....	37	762	.931	.....	.....	.....	.....	1	4	10	16	18	13	31	7	(1)	(1)	(1)	(1)
Varnish rubbers, male.....	25	501	.870	.....	.....	1	3	2	5	6	15	18	11	39	.....	.....	.....	.....	.....

¹ Less than 1 per cent.

IMPORTANCE OF THE INDUSTRY.

The automobile industry is comparatively new. It has been less than 25 years since the first American made automobile was sold. In 1899 the industry was so new and of so little importance that data concerning it were reported by the United States census as part of the carriage and wagon industry. Since 1899 its growth has been phenomenal, as is shown in Table 3, which has been drawn from the Census of United States Manufactures, 1919. From this table it is seen that the number of establishments in the industry increased from 178 in 1904 to 2,830 in 1919; that capital increased from \$23,000,000 in 1904 to \$1,781,000,000 in 1919; that the number of wage earners increased from 12,049 in 1904 to 343,115 in 1919; that the amount paid to wage earners increased from \$7,000,000 in 1904 to \$491,000,000 in 1919; that the average yearly earnings of wage earners increased from \$594 in 1904 to \$1,431 in 1919; and that the number of automobiles produced increased from 21,692 in 1904 to 1,683,916 in 1919.

The statistical number of automotive industries published in February, 1923, reports a production of 2,334,000 passenger cars and 243,000 trucks in the United States in 1922. According to the May, 1923, issue of American Industries, 289,011 passenger cars and trucks were produced in June, 1922. This was the largest monthly production in 1922 or in any other month in any year prior to 1923.

The United States Census Bureau and the National Automobile Chamber of Commerce in a joint news article released April 14, 1923, gave the production of cars and trucks for each of the nine months, July, 1922, to March, 1923. The total output during the first three months of 1923 according to this article was 872,565 cars, which indicates a production in 1923 greater than in 1922. The output in March, 1923, was 353,017 cars and trucks, which was 22 per cent more than the June, 1922, production.

TABLE 3.—ESTABLISHMENTS, CAPITAL, COST OF MATERIALS, VALUE OF PRODUCTS, WAGE EARNERS, EARNINGS, AND NUMBER OF AUTOMOBILES PRODUCED, BY YEARS, 1904, 1909, 1914, AND 1919.

(From United States Census of Manufactures, 1919.)

Year.	Number of establishments.	Capital (in millions).	Cost of materials (in millions).	Value of all products (in millions).	Average number of employees.	Average number of wage earners.	Amount paid to wage earners (in millions).	Average yearly earnings of wage earners.	Number of automobiles produced. ¹		
									Passenger cars.	Business cars.	All classes.
1904....	178	\$23	\$13	\$30	13,230	12,049	\$7	\$594	21,281	411	21,692
1909....	743	174	132	249	84,954	75,721	49	643	121,868	4,725	126,593
1914....	1,271	408	356	633	145,191	127,092	102	802	543,679	25,375	569,054
1919....	2,830	1,781	1,941	3,080	393,939	343,115	491	1,431	1,557,480	126,436	1,683,916

¹ Includes, in 1919, 4,660 automobiles made as subsidiary products by establishments classified in other industries, but does not include in 1914, 3,985; in 1909, 694; and in 1904, 1,133.

EXPLANATION OF SCOPE AND METHOD.

This report is compiled from data drawn from the records of establishments manufacturing passenger cars or trucks and from a few establishments manufacturing bodies or parts, and covers the wage earners through all the processes of manufacture from those unloading the material and supplies to those loading the finished product for shipment and excepts only executive employees, clerks, power-house employees, and employees engaged in the construction or repair of buildings.

Data for a few large establishments are for only a part of the total number of employees in such establishments, because the inclusion of the total number would have tended to give undue weighting to those establishments and therefore to impair the representative character of the averages, especially for the States in which such large establishments are located.

In selecting establishments from which to obtain data the bureau undertook to represent all States in which automobile manufacturing is of material importance, the measure of importance being the number of wage earners as reported by the United States Census of Manufactures.

Table 4, which follows, shows by States the number of wage earners in this industry according to the 1919 census; the number of establishments from which the bureau obtained 1922 data; the number of employees in such establishments; and average hours and earnings for all wage earners in each State and for all States combined for 1922. Data are shown on line 1 for Michigan, because it is in every way the most important State in the industry, followed by other States in order of importance as determined by the number of wage earners.

Average full-time hours per week by States range from 47.6 for the 10,214 wage earners covered in Ohio to 54.6 for the 2,921 wage earners covered in Wisconsin. Average earnings per hour range from \$0.529 for the 2,500 wage earners covered in Pennsylvania to \$0.707 for the 29,163 wage earners covered in Michigan, and average full-time earnings per week range from \$27.40 in Pennsylvania to \$35.49 in Michigan.

These averages are for wage earners of representative establishments. It is therefore assumed that the averages are at least approximately the same as they would have been had data been taken for all employees in the industry in each State and in all States combined.

A very large majority of the employees in the industry are pieceworkers with their average earnings per hour dependent upon the number of pieces or jobs completed in a given period of time. Since 1899 the industry has passed through a period of many experiments and radical changes. Improved organization and the development and installation of improved machinery have increased the output per man per hour.

TABLE 4.—NUMBER OF WAGE EARNERS IN THE AUTOMOBILE INDUSTRY IN 1919, AND NUMBER OF ESTABLISHMENTS AND WAGE EARNERS COVERED AND AVERAGE HOURS AND EARNINGS, IN 1922.

State.	Wage earners reported by U. S. census, 1919.	Number of establishments and wage earners for which 1922 data are presented in this report.				
		Estab-lish-ments.	Wage earners.	Average full-time hours per week.	Average earnings per hour.	Average full-time earnings per week.
Michigan.....	175,985	10	29,163	50.2	\$0.707	\$35.49
Ohio.....	45,882	5	10,214	47.6	.627	29.85
New York.....	30,483	8	5,350	51.0	.610	31.11
Indiana.....	25,773	6	4,302	50.6	.592	29.96
Pennsylvania.....	14,708	10	2,500	51.8	.529	27.40
Wisconsin.....	13,585	4	2,921	54.6	.633	34.56
Illinois.....	8,805	6	1,859	50.0	.609	30.45
New Jersey.....	5,519	.....	.....	.....	.....	.....
Massachusetts.....	4,530	.....	.....	.....	.....	.....
Missouri.....	3,240	.....	.....	.....	.....	.....
California.....	3,008	.....	.....	.....	.....	.....
Iowa.....	564	.....	.....	.....	.....	.....
Other States.....	11,033	.....	.....	.....	.....	.....
Total.....	343,115	49	56,309	50.1	.657	32.92

The above table shows that according to the 1919 census approximately 92 per cent of the total number of wage earners in the industry are found in the States in which the establishments furnishing information to the Bureau of Labor Statistics are located and that the number of wage earners for which detailed information for 1922 is presented in this report is 16 per cent of the total wage earners in the industry in 1919.

The average earnings per hour for employees of each occupation, as presented in the various tables of this report, were computed by dividing the total earnings of all employees in the occupation during the pay period covered by the total hours worked by all employees in the occupation.

Average full-time hours per week were computed by dividing the total full-time hours per week of all employees in the occupation by the number of employees in the occupation during the pay period covered. The full-time hours per week for each employee were used in arriving at this average even though some employees worked more or less than full time on account of overtime, sickness, disability, or some other cause.

Average full-time earnings per week for employees of each occupation were computed by multiplying the average earnings per hour of all employees in the occupation by the average full-time hours per week. This assumes that the earnings for full time would have been at the same average rate per hour as during the time that was actually worked in the week covered.

REGULAR OR CUSTOMARY HOURS OF OPERATION.

The regular or customary hours of operation of an establishment are the hours of operation when the establishment is working its recognized standard of full time; in other words, the regular or usual time between beginning work in the morning and closing in the afternoon, less the regular time off duty for midday lunch or dinner.

The amount of employment and conversely of unemployment within the pay period covered is indicated in the comparison of "Average full-time hours per week" with "Average hours actually worked in pay period," which averages are shown in parallel columns in general Table A, pages 20 to 41 for employees of establishments having weekly pay periods. The average in one column shows the possible hours of opportunity for work in one week under normal conditions, while the average in the other column shows what was actually done in one week.

Some employees of an occupation or of an establishment may have worked more than full time during the pay period taken, due to overtime work, while others may have worked less than full time on account of having been sick, disabled, or laid off part time, or of having been in service less than full time on account of termination of service before the end of the pay period covered or of having entered service after the beginning of the period.

Table 1, pages 2 and 3, shows the *per cent* of employees at each classified group of regular or customary full-time hours per week, while Table A shows the *number* of employees within each group.

The regular or customary full-time hours per day under normal conditions of 94 per cent of the employees covered in this report are the same on each of the days Monday to Friday and less on Saturday. The hours per day of over 99 per cent of the employees range from 8 to 10 Monday to Friday and from $4\frac{1}{2}$ to 8 on Saturday. The full-time hours per week of 5 per cent of the 56,309 employees covered in 1922, as shown in Table 1, are $44\frac{1}{2}$; of 26 per cent are 48; of 5 per cent are $49\frac{1}{2}$; of 44 per cent are 50; of 1 per cent are over 50 and under 54; of 5 per cent are 54; of 13 per cent are 55; and the full-time hours per week of less than 1 per cent of the employees covered are over 55.

Between December 31, 1918, and the period covered in 1922, regular or customary full-time hours per week of 1 establishment were increased from $44\frac{1}{2}$ to $49\frac{1}{2}$, of 1 from 44 to $52\frac{1}{2}$; of 4 from 44 to 55. The hours of 1 were reduced from 51 to 50; and in 1 establishment the hours of female employees were increased from 44 to $48\frac{1}{2}$, and hours of male employees reduced from 55 to 50. No change was made in the regular or customary hours of 41 establishments.

REDUCTION IN WAGE RATES SINCE DECEMBER 31, 1918.

Thirty-four of the 49 establishments for which data are presented in this report made one or more changes in wage rates between December 31, 1918, and the period for which 1922 data are shown. All changes except eight, as shown in Table 5, were reductions. The reductions by establishments during the period ranged from 10 to 30 per cent.

Thirteen establishments made no change in wage rates, and 2 establishments at various times made changes applying only to individuals.

10 WAGES AND HOURS OF LABOR IN THE AUTOMOBILE INDUSTRY.

TABLE 5.—CHANGE IN WAGE RATES OF EMPLOYEES IN THE AUTOMOBILE INDUSTRY IN THE UNITED STATES BETWEEN DECEMBER 31, 1918, AND THE PERIOD COVERED BY THE 1922 STUDY.

Number of establishments.	Employees affected.	Per cent of increase (+) or decrease (—) in wage rates.			
		First change.	Second change.	Third change.	Fourth change.
1	All.....	+10	.....	.....	.....
2	do.....	+10	—10	.....	.....
7	do.....	—10	.....	.....	.....
3	do.....	—12	.....	.....	.....
1	do.....	—10—15	.....	.....	.....
1	do.....	—15	.....	.....	.....
5	do.....	—20	.....	.....	.....
1	do.....	—10	—5	.....	.....
2	do.....	—10	—10	.....	.....
1	do.....	—15	.....	.....	.....
1	do.....	—20	+10	.....	.....
1	do.....	—20	—10	.....	.....
1	Night shift only.....	—10	.....	.....	.....
1	(Time workers.....	—20	.....	.....	.....
1	(Piece workers.....	—30	.....	.....	.....
1	do.....	(1)	+10	—5	—10
1	do.....	—20	—5	+10	.....
1	do.....	—10	—10	—5	.....
1	do.....	—30	+30	(2)	.....
1	do.....	—5	—5	—5	+5
1	do.....	(4)	(4)	(4)	(4)
1	(5).....	(5)	(5)	(5)	(5)
13	(6).....	(6)	(6)	(6)	(6)

¹ Increase of 2½ cents per hour.

² 40 per cent of employees, but class or occupations of such employees were not specified.

³ Piece workers, 15 per cent; time workers, 20 per cent.

⁴ Increase according to length of service, but per cent was not available.

⁵ No general changes at any one time. Individual changes at various times.

⁶ No change.

BONUS OR PREMIUM SYSTEMS.

Twenty-three of the 49 establishments that furnished information for this report had bonus or premium systems in operation all or part of the time between December 31, 1918, and October and November, 1922, by which the earnings of wage earners were increased by the addition of a specified amount or per cent of their earnings at regular time or piece rates. The systems of 14 of the 23 establishments were still in operation when the 1922 data were collected for this report, the systems of 9 having been discontinued and the amount of the bonus of 1 having been changed before the 1922 data were obtained. Twenty-six establishments did not have bonus or premium systems at any time between December 31, 1918, and October and November, 1922.

Bonus systems are based on attendance, earnings, efficiency or production, night work, or on service.

Attendance bonus.—Four establishments had bonus systems based on attendance all or part of the time that there was work in the establishments for the wage earners during the pay period. One establishment paid each wage earner who worked *full time* a bonus of 5 per cent of his earnings at his regular rate for each pay-roll period up to August 1, 1920, when the bonus was discontinued. Example: If an employee whose rate per hour was 50 cents worked full time or 48 hours and earned \$24, he was paid a bonus of 5 per cent of the \$24, or \$1.20, which made his earnings \$25.20 in the 48 hours. One establishment paid each wage earner who worked *95 per cent of full time* a bonus of 5 per cent of his earnings until October, 1921, when

the bonus was discontinued. One establishment paid each wage earner who worked *full time* a bonus of \$1 per week up to October, 1920, when the bonus was discontinued. One establishment paid each wage earner who worked *full time and earned \$20 or more per week*, a bonus of \$1 per week, and paid each wage earner who worked *full time and earned less than \$20 per week* a bonus of 5 per cent of his earnings. The system of this latter establishment was in operation when the 1922 data were collected.

Earnings bonus.—Two establishments had bonus systems based on earnings. One establishment paid a bonus of 10 per cent of earnings to each wage earner earning less than \$40 per week, and \$3.60 per week to each one earning \$40 or more per week. Example: If an employee earned \$35 in one week, he was paid a bonus of 10 per cent of the \$35, or \$3.50, which made his total earnings for the week \$38.50. If an employee earned \$45, he was paid a bonus of \$3.60, making his total earnings \$48.60. The other establishment paid a bonus of 10 per cent of earnings to each employee. These systems were discontinued before the 1922 data were collected.

Efficiency or production bonus.—Eleven establishments had bonus systems based on efficiency or production.

Establishments 1 and 2 had systems based on a fixed standard of time for the completion of each job or operation. Any employee who completed a job or operation in less than the standard time was paid for the time consumed in the completion of the job at his regular rate and was also paid for one-half of the time saved. Example: If the standard for the job was 1 hour and an employee whose rate was 60 cents per hour or 1 cent per minute completed the job in 40 minutes, saving 20 minutes, he was paid 40 cents for the 40 minutes worked and was also paid 10 cents for one-half of the 20 minutes, making his earnings 50 cents for 40 minutes' work. In both establishments the system was in operation when the 1922 data were collected.

Establishments 3 and 4 had systems based on departmental efficiency of at least 71 of a possible 100 per cent. For an efficiency of 71 to 100 per cent in any department each wage earner of the department was paid for the time worked at his regular rate plus 1 per cent of such earnings for each per cent of efficiency over 70 and up to 100. By this system employees of a department may be paid from 1 to 30 per cent more than their earnings at their regular rates. In both establishments the system was in operation when the 1922 data were collected.

Establishments 5 and 6 had systems based on efficiency of at least 74 of a possible 100 per cent. For an efficiency of 74 to 100 per cent each wage earner was paid for the time worked at his regular rate plus 1 per cent of such earnings for each per cent over 73 and up to 100. In both establishments the system was in operation when the 1922 data were collected.

Establishments 7 and 8 had systems by which a specified amount is provided for the work of a department or of a subdivision of a department. The employees of the department or subdivision were paid at their regular rates for the time worked plus the per cent that the amount provided for the work is above the amount earned at regular rates. Example: The amount provided was \$200. The earnings at regular rates were \$150. Each employee was paid 133

per cent of his earnings at his regular rate. In both establishments the system was in operation when the 1922 data were collected.

Establishment 9 had a system based on a fixed or standard day's production or 100 per cent. For any production over 60 per cent of the standard each wage earner was paid a bonus in addition to his earnings at his regular rate, the amount of the bonus varying with the excess of production over 60 per cent of the standard. This system was in operation when the 1922 data were collected.

Establishment 10 had a system based on set tasks for each operation. For an efficiency of 90 per cent a bonus of 5 per cent of earnings at regular rates was paid, for 95 per cent $7\frac{1}{2}$ per cent was paid, for $97\frac{1}{2}$ per cent 10 per cent was paid, for 100 per cent 15 per cent was paid, for 105 per cent $17\frac{1}{2}$ per cent was paid, for 110 per cent 20 per cent was paid, and in like manner for every 5 per cent of efficiency over 110 per cent of the set task for each operation, an additional $2\frac{1}{2}$ per cent of earnings at regular rates was paid. This system was still in operation when the 1922 data were collected.

Establishment 11 had a system based on departmental production. The basis and the amount of the bonus were not reported for this system which was inaugurated the latter part of 1922 and was in operation when the 1922 data were collected.

Night work bonus.—One establishment had a bonus system in operation when the 1922 data were collected by which the earnings of all wage earners who worked at night were increased by the addition of 10 per cent to their earnings at their regular rates.

Service bonus.—Five establishments had bonus systems based on length of continuous service of wage earners in the establishments.

One establishment paid a bonus of 5 per cent of earnings at regular rates for 6 months and less than 1 year of service and 10 per cent of earnings for 1 year or more of service to January, 1920, when the system was discontinued.

One establishment paid a bonus of 10 per cent of earnings at regular rates for 1 year or more of service to May, 1920, when the system was discontinued.

One establishment paid a bonus of 1 per cent of earnings at regular rate for each year of service to 10 years or more, to August, 1919, after which 1 per cent was paid for each year of service up to including 4 years, and 10 per cent was paid for service of 5 years or more. This system was in operation when the 1922 data were collected.

One establishment paid a bonus based on length of service and rates of wages, the amount of bonus varying for each individual according to service and wage rates. This system was discontinued by increasing the wage rate of each individual enough to cover the bonus.

One establishment paid a bonus of $2\frac{1}{2}$ per cent of earnings at regular rate for service of 3 months and less than 6 months, 5 per cent for service of 6 months and less than 9 months, $7\frac{1}{2}$ per cent for service of 9 months and less than 1 year, and 10 per cent for service of 1 year or more, to August, 1919, when the system was discontinued.

PAY FOR OVERTIME AND FOR SUNDAYS AND HOLIDAYS.

Between December 31, 1918, and the period for which 1922 (October and November) data are presented in this report, 45 of the 49 establishments covered paid, as shown in Table 6, all or part of the

employees extra for any time worked over and above the regular or customary full-time hours per day or per week and for work on Sundays and holidays. Four establishments paid the regular or single rate for overtime and for work on Sundays and holidays during the entire period between December 31, 1918, and October and November, 1922.

It will be observed from Table 6, lines 4 to 8, that 7 of the 45 establishments paid extra for overtime work and for work on Sundays and holidays for only part of the time between December 31, 1918, and the period covered by the 1922 data; that before the 1922 data were obtained these 7 establishments discontinued extra pay for overtime, and that 38 establishments paid extra for such work during the entire period between December 31, 1918, to the period covered by the 1922 data.

TABLE 6.—NUMBER OF ESTABLISHMENTS PAYING EXTRA FOR OVERTIME AND FOR SUNDAY AND HOLIDAY WORK, EMPLOYEES ENTITLED, PERIOD, AND RATE.

Number of establishments.	Employees entitled.	Period during which entitled, from December 31, 1918, to—	Times regular rate for—	
			Overtime.	Sundays and holidays.
22	All employees.....	Date covered by 1922 study.....	1½	1½
6	.....do.....	.....do.....	1½	2
4	.....do.....	.....do.....	1½	1½
2	.....do.....	Dec. 31, 1919.....	1½	1½
2	.....do.....	Oct. 1, 1920.....	1½	1½
1	.....do.....	June 1, 1920.....	1½	1½
1	.....do.....	June 1, 1921.....	1½	1½
1	.....do.....	Sept. 1, 1921.....	1½	1½
1	.....do.....	May 1, 1922.....	1½	1½
1	.....do.....	From May 1, 1922, to date covered by 1922 study.....	1½	1½
2	All time workers.....	Date covered by 1922 study.....	1½	1½
1	.....do.....	Jan. 1, 1920.....	1½	2
1	.....do.....	From Jan. 1, 1920, to date covered by 1922 study.....	1½	1½
1	All except bonus workers.....	Date covered by 1922 study.....	1½	1½
1	Toolmakers and millwrights.....	.....do.....	1½	1½

NUMBER OF DAYS WORKED IN ONE PAY PERIOD.

Table 7 shows for 14 of the principal occupations average and specified number of days of operation for establishments and days worked for employees during the pay periods for which data are presented in this report. The data are presented in two separate parts or divisions. The first section covers establishments in which employees are paid weekly and the second establishments in which employees are paid every two weeks or semimonthly.

The word "days" means the number of calendar days or parts of days that establishments were in operation during one pay period or the number of days or parts of days that employees worked during one pay period. Any part of a day worked is counted a day for the purpose of this table.

The average number of days of operation for establishments was obtained by weighting the days of operation of each establishment by the number of employees, without regard to the days worked by individual employees.

The average number of days for employees of the occupation is a simple average obtained by dividing the aggregate number of days worked by all employees of the occupation in all establishments by the total number of employees in the occupation.

Reading line 1 of the first section of the table, it is seen that for the occupation of "Assemblers, axle and frame, male," data are presented for 20 establishments for a weekly pay period; that the average number of days of operation of the establishments in one week is 5.7; that employees of this occupation in 1 establishment had the opportunity to work on only 4 days during the week; that employees of 3 establishments had the opportunity to work on 5 days; and that the employees of 16 establishments had the opportunity to work on 6 days during the week. Continuing on the same line, it is seen that there were 358 employees in the occupation in the 20 establishments; that the average number of days in one week worked by them were 5.5; that 2 of the 358 employees actually worked on 1 day only during the week; that 4 worked on 2 days only; that 5 worked on 3 days; that 20 worked on 4 days; that 114 worked on 5 days; and that 213 worked on 6 days during the week and none worked more than 6 days.

In each occupation except "Grinding machine operators, female," "Lathe operators, female," "Milling-machine operators, female," and "Sewing-machine operators, male," the average for the employees is less than the average for the establishments, due to the fact that some employees did not work the entire time the establishment was in operation. In the cases of the occupations where the average for the employees equals the average for the establishments, the small number of employees in the occupations worked full time during the pay period covered.

TABLE 7.—NUMBER OF ESTABLISHMENTS AND NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING EACH SPECIFIED NUMBER OF DAYS IN THE PAY PERIOD IN 1922, BY OCCUPATIONS.

ONE WEEK PAY PERIOD.

Occupation.	Sex.	Establishments.								Employees.								
		Num-ber.	Average number of days of operation in one week.	Number in which days of operation in one week were—						Num-ber.	Average number of days worked in one week.	Number who in one week worked on—						
				1	2	3	4	5	6			1 day.	2 days.	3 days.	4 days.	5 days.	6 days.	7 days.
Assemblers, axle and frame.	Male	20	5.7	.....	.....	.....	1	3	16	358	5.5	2	4	5	20	114	213	.....
Assemblers, chassis.	do	19	5.7	.....	.....	.....	1	3	15	582	5.5	3	3	11	24	164	377	.....
Assemblers, motor.	do	20	5.6	.....	.....	.....	1	3	16	838	5.4	4	10	9	35	343	437	.....
Drill-press operators.	do	21	5.6	.....	.....	.....	.....	3	18	918	5.3	6	16	38	49	364	444	1
Do.	Female	1	6.0	.....	.....	.....	.....	.....	1	10	5.9	.....	.....	.....	.....	1	9	.....
Grinding-machine operators.	Male	18	5.6	.....	.....	.....	.....	3	15	630	5.3	5	13	15	33	231	332	1
Do.	Female	1	6.0	.....	.....	.....	.....	.....	1	1	6.0	.....	.....	.....	.....	.....	1	.....
Lathe operators.	Male	20	5.8	.....	.....	.....	.....	3	17	719	5.4	9	10	11	42	197	450	.....
Do.	Female	1	6.0	.....	.....	.....	.....	.....	1	1	6.0	.....	.....	.....	.....	.....	1	.....
Milling-machine operators.	Male	19	5.6	.....	.....	.....	.....	3	16	486	5.3	5	6	15	25	187	248	.....
Do.	Female	1	6.0	.....	.....	.....	.....	.....	1	6	6.0	.....	.....	.....	.....	.....	6	.....
Screw-machine operators.	Male	15	5.6	.....	.....	.....	.....	3	12	444	5.3	2	6	15	29	174	218	.....
Sewing-machine operators.	do	6	5.9	.....	.....	.....	.....	1	5	30	5.9	.....	.....	.....	.....	3	27	.....
Do.	Female	11	5.6	.....	.....	.....	.....	.....	11	214	4.9	7	6	19	30	61	91	.....
Sheet-metal workers, skilled.	Male	14	5.8	.....	.....	.....	.....	3	11	252	5.5	4	1	6	10	62	168	1
Testers, final and road.	do	21	6.0	.....	.....	.....	.....	2	19	227	5.7	1	1	3	12	23	186	1
Toolmakers.	do	20	5.9	.....	.....	.....	.....	2	18	465	5.7	.....	4	6	21	86	335	13
Varnishers, strippers, and letterers.	do	20	5.7	.....	.....	.....	.....	2	18	363	5.6	1	3	5	12	94	248	.....
Varnish rubbers.	do	12	5.6	.....	.....	.....	.....	2	10	176	5.5	2	2	5	6	44	117	.....

NUMBER OF DAYS WORKED IN ONE PAY PERIOD.

TABLE 7.—NUMBER OF ESTABLISHMENTS AND NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING EACH SPECIFIED NUMBER OF DAYS IN THE PAY PERIOD IN 1922, BY OCCUPATIONS—Concluded.

TWO WEEKS OR HALF MONTH PAY PERIOD

Occupation.	Sex.	Establishments.										Employees.																
		Num- ber.	Average number of days of operation in one pay pe- riod.	Number in which days of operation in two weeks or half month pay period were—							Num- ber.	Average number of days worked in one pay pe- riod.	Number who in two weeks or half month pay period worked on—															
				8	9	10	11	12	13	14			1 day.	2 days.	3 days.	4 days.	5 days.	6 days.	7 days.	8 days.	9 days.	10 days.	11 days.	12 days.	13 days.	14 days.	15 days.	16 days.
Assemblers, axle and frame	Male	16	12.3	...	1	1	2	5	2	5	615	11.3	4	7	2	1	16	7	15	55	70	68	164	109	90	...	...
Assemblers, chassis	do.....	21	11.6	...	1	1	...	7	6	6	675	11.1	2	7	3	4	12	11	12	25	116	72	28	151	91	141	...	...
Assemblers, motor	do.....	20	11.8	...	1	...	1	7	7	4	1,211	10.9	10	15	7	15	13	15	26	38	119	171	116	416	157	93	...	...
Do.....	Female.....	2	13.5	...	...	...	...	1	1	2	2	13.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drill-press operators.....	Male.....	20	12.0	...	...	2	1	7	5	5	2,217	11.2	19	18	24	18	26	34	31	79	138	279	262	860	219	210	...	...
Do.....	Female.....	4	12.2	...	...	...	...	3	...	1	34	10.5	...	...	...	...	1	...	2	7	19	1	2	...	...	...	...	...
Grinding-machine operators.....	Male.....	19	12.1	...	...	1	1	8	4	5	1,814	11.3	4	9	8	15	19	19	20	43	98	197	243	746	190	203	...	...
Do.....	Female.....	1	14.0	...	...	...	...	...	1	2	2	14.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lathe operators.....	Male.....	20	11.6	...	...	...	1	9	5	5	1,936	11.4	9	12	11	14	15	16	34	38	78	160	283	853	215	197	1	...
Do.....	Female.....	2	12.0	...	...	...	...	2	...	...	11	10.9	...	...	...	...	1	...	...	...	...	...	6	4	...	...	...	...
Milling-machine operators.....	Male.....	19	12.0	...	...	1	...	8	4	6	958	11.1	4	7	7	9	6	11	19	31	89	107	117	354	66	131	...	...
Do.....	Female.....	2	12.0	...	...	...	...	2	...	...	8	11.8	...	...	...	...	...	2	...	...	...	...	...	5	...	...	...	...
Screw-machine operators.....	Male.....	18	11.9	...	...	...	...	10	3	5	1,078	11.0	6	10	10	16	16	19	22	23	97	95	127	418	48	171	...	...
Do.....	Female.....	1	12.0	...	...	...	...	1	...	...	10	11.2	...	...	...	...	...	...	...	1	...	...	1	2	6	...	...	...
Sewing-machine operators.....	Male.....	5	12.1	...	...	1	...	2	...	2	71	11.6	...	...	...	...	...	...	1	4	3	13	46	1	3	...	...	...
Do.....	Female.....	15	12.8	...	...	1	...	4	4	6	283	11.2	1	8	3	2	10	7	4	6	12	30	27	64	33	76	...	...
Sheet-metal workers, skilled.....	Male.....	17	12.5	1	...	...	...	4	5	7	399	11.4	...	...	3	3	3	4	5	64	9	15	35	117	54	84	...	...
Testers, final and road.....	do.....	19	12.1	...	1	...	...	6	5	7	402	11.2	5	4	4	7	3	6	3	8	32	33	56	127	27	87	...	...
Toolmakers.....	do.....	19	12.2	...	...	...	...	9	5	5	631	11.6	5	3	3	2	5	6	4	11	14	24	77	363	46	68	...	...
Varnishers, strippers, and letterers.....	do.....	16	12.5	...	...	...	1	4	6	5	375	11.3	2	7	3	2	3	3	6	7	23	34	48	137	31	66	3	...
Varnishers, rubbers.....	do.....	13	12.3	1	...	...	...	4	4	4	325	11.1	4	3	2	2	...	4	13	28	9	17	26	146	40	30	1	...

Table 8 shows for each State and for all States combined, average and classified days of operation during the year ending October 31, 1922.

The days of operation of 48 of the 49 establishments covered in 1922 ranged from 104 to 308; the average was 283 days. The average by States ranged from 235 for Pennsylvania to 302 for Illinois and New York. Thirty establishments worked as much as 300 days; 2 worked not more than 105 days. One establishment did not begin operations until January 1, 1922, and is not included in this table.

TABLE 8.—AVERAGE AND CLASSIFIED DAYS OF OPERATION DURING ONE YEAR ENDING OCTOBER 31, 1922, BY STATES.

State.	Number of establishments.	Average number of days of operation in 1 year.	Number of establishments in which days of operation were—						
			104 and 105.	161	206	241 and 242.	255 and under 265.	287 and under 300	300 and under 309.
Illinois.....	6	302	.....	.....	.....	.....	.....	1	5
Indiana.....	6	273	.....	1	.....	.....	1	.....	4
Michigan.....	10	296	.....	.....	.....	.....	1	3	6
New York.....	8	302	.....	.....	.....	.....	.....	3	5
Ohio.....	5	295	.....	.....	.....	.....	1	.....	4
Pennsylvania.....	9	235	2	.....	1	2	.....	.....	4
Wisconsin.....	4	290	.....	.....	.....	.....	1	1	2
Total.....	48	283	2	1	1	2	4	8	30

The difference between the average days of operation, 283, and a possible full time of 313 week days was due, as shown in Table 9, to the 48 establishments as a whole being closed an average of 2 Saturdays during the year, an average of 6 holidays, 1 day for inventory, 19 days on account of slack business or lack of orders, 1 day on account of lack of materials, and 1 day for other causes.

Two establishments, 1 in Ohio and 1 in Pennsylvania, were not in operation on any of the 52 Saturdays during the year, resulting in an average of 10 days idle for the 5 establishments in Ohio, of 6 days for the 9 establishments in Pennsylvania, and of 2 days for the 48 establishments in all States covered.

All 48 establishments were idle on holidays, ranging from 5 to 8 days during the year, making an average of 6 or 7 days for the establishments in each State, or an average of 6 days for all establishments in all States.

Eleven establishments were idle from 2 to 16 days during the year on account of inventory. Fifteen establishments were idle from 2 to 203 days during the year on account of slack business or lack of orders. Two establishments were idle 11 to 13 days during the year on account of lack of materials. Eight establishments were idle from 1 to 6 days during the year for "other causes."

18 WAGES AND HOURS OF LABOR IN THE AUTOMOBILE INDUSTRY.

TABLE 9.—AVERAGE NUMBER OF DAYS OF OPERATION AND AVERAGE NUMBER OF DAYS IDLE BY SPECIFIED CAUSES DURING YEAR ENDING OCTOBER 31, 1922, BY STATES.

State.	Number of establishments.	Average number of days of operation in year.	Average number of days idle during year on account of—						
			Satur-day.	Sun-day.	Holi-day.	Inven-tory.	Slack business or lack of orders.	Lack of materials.	Other causes.
Illinois.....	6	302	.....	52	6	1	3	.....	1
Indiana.....	6	273	.....	52	6	1	32	.....	1
Michigan.....	10	296	.....	52	7	4	4	.....	2
New York.....	8	302	.....	52	6	.....	3	2	.....
Ohio.....	5	295	10	52	6	1	1	.....	.....
Pennsylvania.....	9	235	6	52	6	.....	64	1	1
Wisconsin.....	4	290	.....	52	7	1	14	.....	1
Total.....	48	283	2	52	6	1	19	1	1

GENERAL TABLES.

In addition to the text tables already shown, four general tables are presented as follows:

TABLE A.—Average hours and earnings and classified full-time hours per week, by occupation, length of pay period, sex, and State, 1922.

TABLE B.—Average and classified earnings per hour for employees in 14 selected occupations, by sex and State, 1922.

TABLE C.—Number of employees in 14 selected occupations working on as many days as factory was in operation during pay period, classified by hours actually worked, by sex and State, 1922.

TABLE D.—Number of employees in 14 selected occupations working on as many days as factory was in operation during pay period, classified by earnings actually received, by sex and State, 1922.

The presentation in Table A in parallel columns of "Average full-time hours per week" and "Average hours actually worked in one pay period" is for the purpose of comparing the regular hours during which under normal conditions it is possible for employees in an occupation to work with the hours actually worked. One shows the possible hours for work under normal conditions while the other shows what was actually done during one pay period by all employees in the occupation, including those who worked less than the hours of opportunity.

Tables B, C, and D are limited to 14 of the most important occupations.

Tables C and D are shown in two sections because some establishments had two-weeks or half-month pay rolls, and a separation of the data to get a one-week pay roll therefrom was impossible, or at least so difficult as to be prohibitive.

In Tables C and D the average full-time hours and earnings per pay period are given for all of the employees covered in each of the 14 selected occupations. In addition these tables show the average and classified hours actually worked and the average and classified earnings actually received by such employees making as many starts to work as there were days of opportunity for work in the occupation in the pay period covered.

All employees who made less than the number of days for which there was opportunity for work were excluded from the average and classified hours actually worked and average and classified earnings actually received, because it is the purpose of these tables to show as nearly as possible the hours and earnings actually made by employees who worked all the time that there was opportunity to work and to compare therewith the average hours and earnings that would have been made had each employee worked the regular or customary full-time hours per week. This assumes that each employee would have earned the same average per hour during the full time as was earned during the time actually worked in the pay period covered.

Some employees worked less than the number of days on which there was opportunity for work on account of being sick, disabled, laid off, absent of own accord, termination of service before end of week, or entering service after beginning of pay period.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Apprentices, male—1 week:																		
New York.....	4	51	6.0	5.9	48.1	46.9	98	.....	48	3	.....	.....	.....	.....	.....	\$0.276	\$13.27	\$12.94
Pennsylvania.....	4	24	5.6	5.3	49.2	47.1	96	.....	12	.....	11	.....	.....	1	.....	.308	15.16	14.52
Other States.....	2	22	5.9	5.7	49.5	45.3	92	.....	6	.....	16	.....	.....	.....	.....	.505	24.97	22.87
Total.....	10	97	5.9	5.7	48.7	46.6	96	.....	66	3	27	.....	.....	1	.....	.334	16.26	15.58
Apprentices, male—2 weeks or half month:																		
Michigan.....	6	184	12.0	10.3	54.4	93.2	86	.....	3	2	17	.....	.....	162	.....	.414	22.51	38.59
Other States.....	3	19	14.0	13.6	53.9	115.4	91	.....	.....	.....	3	2	.....	14	.....	.369	19.91	42.59
Total.....	9	203	12.2	10.6	54.3	95.3	86	.....	3	2	20	2	.....	176	.....	.409	22.22	38.97
Assemblers, axle and frame, male—1 week:																		
Illinois.....	3	22	5.6	5.6	50.4	46.2	92	.....	.....	7	12	.....	3	.....	.....	.631	31.80	29.14
Indiana.....	5	61	6.0	5.3	50.8	45.5	90	.....	.....	.....	49	.....	12	.....	.....	.605	30.73	27.54
New York.....	6	95	6.0	5.9	51.8	50.3	97	.....	31	3	.....	4	56	.....	.....	.582	30.14	29.23
Pennsylvania.....	4	30	5.7	5.6	49.6	49.2	99	.....	13	.....	14	.....	.....	3	.....	.545	27.05	26.83
Other States.....	2	150	4.5	4.2	49.2	44.6	91	.....	61	.....	89	.....	.....	.....	.....	.727	35.76	32.42
Total.....	20	358	5.7	5.5	50.3	46.7	93	.....	105	10	164	4	71	4	.....	.643	32.32	30.07
Assemblers, axle and frame, male—2 weeks or half month:																		
Illinois.....	2	3	12.3	10.3	50.0	82.4	76	.....	.....	.....	3	.....	.....	.....	.....	.497	24.85	41.00
Michigan.....	8	538	12.1	10.5	50.1	96.6	91	.....	114	.....	366	.....	.....	58	.....	.722	36.18	69.75
Ohio.....	3	171	14.0	12.5	45.8	88.4	95	154	.....	10	7	.....	.....	.....	.....	.598	27.38	51.96
Wisconsin.....	2	43	13.7	12.9	54.1	117.0	92	.....	.....	.....	8	.....	.....	35	.....	.677	36.61	79.25
Other States.....	2	14	13.4	12.1	51.8	103.5	88	.....	.....	.....	4	10	.....	.....	.....	.624	32.31	64.59
Total.....	17	769	12.3	10.7	49.2	95.6	92	154	114	10	388	10	.....	93	.....	.690	33.97	65.99

Assemblers, chassis, male—1 week:																		
Illinois.....	3	19	4.9	4.9	50.4	42.5	84			10	6		3			.581	29.27	24.72
Indiana.....	5	74	5.7	5.4	50.8	45.1	89				60		14			.641	32.54	28.91
New York.....	7	187	6.0	5.7	51.9	49.1	95		54	5		26	90	12		.540	28.00	26.54
Pennsylvania.....	2	77	6.0	5.7	49.7	50.4	101		10		67					.588	29.25	29.68
Other States.....	2	225	5.4	5.4	48.8	42.1	86		134		91					.710	34.65	29.91
Total.....	19	582	5.7	5.5	50.2	45.9	91		198	15	224	26	107	12		.621	31.18	28.50
Assemblers, chassis, male—2 weeks or half-month:																		
Illinois.....	2	16	13.0	11.8	50.0	105.6	97				16					.652	32.60	68.90
Michigan.....	9	487	11.4	10.7	50.7	89.2	85		15	43	351			78		.719	36.45	64.18
Ohio.....	4	176	^a 13.7	^a 11.7	46.8	97.4	96	100		20	56					.631	29.54	61.51
Pennsylvania.....	2	25	13.4	11.7	54.0	106.4	87					10		15		.451	24.35	47.97
Wisconsin.....	4	58	13.5	13.1	54.7	120.8	97				4			54		.550	30.06	66.39
Other States.....	1	13	12.0	12.0	50.0	100.2	100				13					.470	23.50	47.11
Total.....	22	775	^a 11.9	^a 11.1	50.2	94.5	89	100	15	63	440	10		147		.667	33.48	63.03
Assemblers, final, male—1 week:																		
Illinois.....	4	86	4.7	5.0	49.9	43.4	87			64	16		6			.586	29.25	25.45
Indiana.....	5	327	6.0	5.7	50.9	49.8	98				251		76			.591	30.10	29.45
New York.....	8	304	6.0	5.8	51.0	48.8	96		137	18		7	140	2		.645	32.87	31.46
Pennsylvania.....	5	80	5.9	5.7	50.4	49.5	98		20		46			14		.528	26.60	26.15
Other States.....	2	499	5.5	5.3	48.9	39.0	80		263		236					.752	36.81	29.33
Total.....	24	1,296	5.7	5.5	50.1	45.0	90		420	82	549	7	222	16		.654	32.75	29.41
Assemblers, final, male—2 weeks or half-month:																		
Illinois.....	2	122	13.0	12.2	50.0	105.1	96				122					.691	34.55	75.20
Michigan.....	9	1,241	12.4	11.3	50.2	95.1	91		292	177	598			174		.714	35.81	67.92
Ohio.....	4	167	^a 14.0	^a 13.2	47.4	103.8	99	75		28	64					.705	33.45	73.22
Pennsylvania.....	2	32	12.8	10.3	54.1	92.9	76					12		20		.477	25.79	44.36
Wisconsin.....	4	232	13.7	12.9	54.4	120.5	95				29			203		.576	31.32	69.41
Other States.....	1	18	12.0	10.6	50.0	89.2	89				18					.601	30.05	53.64
Total.....	22	1,812	^a 12.7	^a 11.6	50.5	100.0	93	75	292	205	831	12		397		.685	34.60	68.53
Assemblers, final, female—1 week:																		
All States.....	2	4	6.0	5.7	49.4	47.6	96			2	2					.409	20.20	19.49
Assemblers, final, female—2 weeks or half-month:																		
All States.....	5	166	12.2	11.4	49.1	92.6	92		96	10	38	22				.626	30.76	57.95

¹ Not including data for 154 employees in 1 establishment whose days were not reported.

² Not including data for 100 employees in 1 establishment whose days were not reported.

³ Not including data for 75 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Assemblers, motor, male—1 week:																		
Illinois.....	3	33	5.4	5.4	49.8	48.7	98	.....	.....	10	23	.....	.....	.....	.....	\$0.612	\$30.51	\$29.80
Indiana.....	5	159	6.0	5.5	51.0	45.8	90	.....	.....	.....	118	.....	41	.....	.....	.553	28.22	25.31
New York.....	6	229	6.0	5.9	51.6	50.2	97	.....	74	21	.....	7	127	.....	.....	.585	30.17	29.36
Pennsylvania.....	4	75	5.9	5.8	50.1	49.7	99	.....	9	.....	61	.....	.....	5	.....	.524	26.25	26.06
Other States.....	2	342	5.0	5.0	49.0	42.7	87	.....	179	.....	163	.....	.....	.....	.....	.715	35.00	30.52
Total.....	20	838	5.6	5.4	50.2	46.2	92	.....	262	31	365	7	168	5	.....	.623	31.27	28.79
Assemblers, motor, male—2 weeks or half month:																		
Illinois.....	2	4	13.0	13.0	50.0	111.4	102	.....	.....	.....	4	.....	.....	.....	.....	.617	30.85	68.71
Michigan.....	7	951	11.5	10.6	49.7	92.3	92	.....	317	68	482	.....	.....	84	.....	.727	36.16	67.13
Ohio.....	4	188	13.6	11.9	47.0	94.4	93	.....	98	35	55	.....	.....	.....	.....	.612	28.79	57.78
Pennsylvania.....	3	68	12.4	10.7	54.9	99.4	85	.....	.....	.....	.....	4	64	.....	.....	.496	27.21	49.25
Wisconsin.....	4	53	13.8	13.6	54.4	116.3	91	.....	.....	.....	6	.....	47	.....	.....	.634	34.51	73.74
Other States.....	1	45	12.0	10.5	50.0	88.8	89	.....	.....	.....	45	.....	.....	.....	.....	.526	26.30	46.70
Total.....	21	1,309	11.8	10.9	49.8	93.9	91	.....	98	317	103	592	4	195	.....	.686	34.17	64.43
Assemblers, motor, female—2 weeks or half month:																		
All States.....	2	2	13.0	13.0	52.5	109.8	92	.....	.....	.....	1	.....	.....	1	.....	.485	25.47	53.24
Bench hands, male—1 week:																		
Illinois.....	3	20	6.0	5.9	49.9	53.4	107	.....	.....	3	17	.....	.....	.....	.....	.489	24.41	26.13
Indiana.....	5	83	6.0	5.6	50.4	49.7	99	.....	.....	.....	74	.....	9	.....	.....	.576	29.05	28.59
New York.....	5	247	6.0	5.6	52.1	48.2	93	.....	74	1	.....	4	168	.....	.....	.568	30.56	28.23
Pennsylvania.....	3	50	5.9	5.7	49.7	48.1	97	.....	8	.....	42	.....	.....	.....	.....	.529	26.28	25.49
Other States.....	2	152	5.1	4.8	49.6	42.8	89	.....	33	.....	119	.....	.....	.....	.....	.716	35.49	30.64
Total.....	18	552	5.8	5.4	50.9	47.1	93	.....	115	4	252	4	177	.....	.....	.608	30.93	28.62

Bench hands, male—2 weeks or half month:																
Michigan.....	8	1,161	11.3	10.4	50.2	90.8	90	343	23	604			191	.751	37.72	68.26
Ohio.....	3	361	⁶ 14.0	⁶ 12.8	46.8	94.4	93	205	31	125				.546	25.57	51.56
Pennsylvania.....	2	19	12.9	11.8	53.8	107.4	90				9		10	.461	24.81	49.52
Wisconsin.....	2	52	13.9	13.5	54.4	118.1	92			6			46	.627	34.12	73.99
Other States.....	2	31	12.2	10.1	50.0	89.4	88			31				.507	25.35	45.34
Total.....	17	1,624	⁶ 11.7	⁶ 10.7	49.6	92.7	91	205	343	54	766	9	247	.691	34.30	64.07
Bench hands, female—2 weeks or half month:																
All States.....	4	14	12.0	10.9	49.6	91.7	91	5		7	2			.546	27.10	50.05
Blacksmiths, skilled, male—1 week:																
Illinois.....	3	12	5.5	5.6	49.8	48.5	97		6	6				.633	26.27	30.74
Indiana.....	5	66	6.0	5.5	50.5	48.7	96			58		8		.674	34.03	32.80
New York.....	4	17	6.0	6.0	49.4	50.4	102	13				4		.790	39.04	39.85
Pennsylvania.....	4	5	5.8	5.4	48.8	41.3	85	3		2				.784	38.26	32.36
Other States.....	1	27	5.0	5.0	48.0	41.9	87	27						.859	41.23	35.98
Total.....	17	127	5.7	5.5	49.7	47.2	95	43	6	66		12		.725	36.02	34.21
Blacksmiths, skilled, male—2 weeks or half month:																
Illinois.....	2	4	13.0	13.0	50.0	111.7	102			4				.844	42.20	94.25
Michigan.....	9	201	11.9	11.5	49.4	96.0	97	124	1	52			24	.842	41.56	80.78
Ohio.....	2	6	⁶ 14.0	⁶ 14.0	45.4	94.4	101	5		1				.735	33.73	69.35
Wisconsin.....	3	49	13.8	13.0	54.3	120.6	94			7			42	.899	48.80	108.44
Other States.....	1	1	13.0	13.0	55.0	124.0	103						1	.500	27.50	62.00
Total.....	17	261	⁶ 12.3	⁶ 11.8	50.2	100.9	96	5	124	1	64		67	.851	42.74	85.85
Blacksmiths, general, male—1 week:																
Illinois.....	2	10	5.8	5.7	50.4	48.9	97			9		1		.488	24.60	23.90
Indiana.....	3	54	6.0	5.3	50.7	47.1	93			45		9		.626	31.72	29.48
New York.....	5	39	5.7	5.7	50.2	48.0	96	24	1			14		.603	30.26	28.95
Pennsylvania.....	4	18	5.7	5.6	49.7	50.1	101	8		8			2	.603	29.95	30.20
Other States.....	2	104	5.1	4.8	48.6	41.3	85	93		9			2	.653	31.76	26.99
Total.....	16	225	5.5	5.2	49.6	44.9	91	125	1	71		24	2	.624	30.92	28.05

⁴ Not including data for 98 employees in 1 establishment whose days were not reported.

⁶ Not including data for 205 employees in 1 establishment whose days were not reported.

⁶ Not including data for 5 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—								Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55	Over 55.			
Blacksmiths, general, male—2 weeks or half month:																		
Illinois.....	2	3	13.0	13.0	50.0	117.4	108				3					\$0.657	\$33.15	\$77.14
Michigan.....	8	339	11.9	11.3	49.5	97.0	97		223	3	57			51	5	.789	38.07	74.60
Ohio.....	4	46	14.0	10.1	45.9	84.9	88	34		5	7					.573	26.29	48.63
Pennsylvania.....	2	15	12.7	11.6	54.2	110.0	93					5		10		.599	32.45	65.86
Wisconsin.....	2	28	14.0	13.7	54.8	127.8	99				1			27		.689	37.77	87.97
Total.....	18	431	12.2	11.5	49.6	98.3	96	34	223	8	68	5		88	5	.737	36.58	72.41
Body builders, male—1 week:																		
Indiana.....	2	305	6.0	5.4	50.0	47.7	95				305					.642	32.10	30.62
New York.....	6	238	6.0	5.8	51.8	49.9	96		84	6			145	3		.675	34.94	33.68
Pennsylvania.....	3	39	5.7	5.5	48.9	48.3	99		34					5		.727	35.55	35.12
Other States.....	2	208	5.0	4.2	48.0	32.9	69		205		3					.770	36.98	25.34
Total.....	13	790	5.7	5.2	50.0	44.5	89		323	6	308		145	8		.683	34.12	30.37
Body builders, male—2 weeks or half month:																		
Illinois.....	2	181	13.0	12.1	50.0	107.2	98				181					.804	40.20	86.17
Michigan.....	5	254	12.8	11.3	49.5	90.2	86		58	2	194					.789	38.10	69.31
Ohio.....	2	108	14.0	12.2	49.8	111.2	94			35	73					.758	37.78	84.23
Pennsylvania.....	2	35	13.6	11.6	53.5	107.2	88					21		14		.654	34.99	70.16
Wisconsin.....	2	236	14.0	11.4	55.0	100.9	78							236		.703	38.67	70.91
Total.....	13	814	13.4	11.6	51.4	100.6	87		58	37	448	21		250		.751	38.63	75.57
Boring-mill operators, male—1 week:																		
Indiana.....	3	8	6.0	6.0	52.0	50.9	98				4		4			.625	32.50	31.81
New York.....	3	65	6.0	5.6	51.5	47.9	93		27				38			.628	32.30	30.04
Pennsylvania.....	4	27	5.7	5.4	49.3	48.4	98		12		14			1		.646	31.85	31.32
Other States.....	3	31	5.1	4.7	49.3	41.1	83		11		20					.708	34.90	29.13
Total.....	13	131	5.7	5.4	50.6	46.6	92		50		38		42	1		.648	32.76	30.20

Boring-mill operators, male—2 weeks or half month:																			
Michigan.....	8	184	11.8	10.7	49.9	91.4	89		35	9	127			13			.756	37.76	69.07
Ohio.....	4	42	⁹ 14.0	⁹ 12.8	47.1	99.7	97	21		9	12						.645	30.41	64.27
Pennsylvania.....	2	3	12.7	12.7	54.2	118.2	100					1		2			.565	30.60	66.74
Wisconsin.....	3	32	13.8	13.1	54.4	111.0	87				4			28			.702	38.17	77.94
Total.....	17	261	⁹ 12.3	⁹ 11.2	50.1	95.4	90	21	35	18	143	1		43			.727	36.42	69.36
Drill-press operators, male—1 week:																			
Illinois.....	4	52	6.0	5.8	50.0	51.3	103			13	38		1				.430	21.48	22.06
Indiana.....	5	205	6.0	5.7	50.4	49.2	98				182		23				.553	27.89	27.19
New York.....	5	150	6.0	5.6	51.3	48.4	94		66	3			81				.542	27.78	26.23
Pennsylvania.....	5	119	5.8	5.7	49.6	50.1	101		29		89		1				.560	27.75	28.05
Other States.....	2	392	5.1	4.7	49.3	40.2	82		131		261						.683	33.69	27.48
Total.....	21	918	5.6	5.3	50.0	45.5	91		226	16	570		105	1			.593	29.63	26.98
Drill-press operators, male—2 weeks or half month:																			
Illinois.....	2	22	13.0	12.5	50.0	122.7	113				22						.611	30.55	74.95
Michigan.....	9	1,814	11.7	10.7	49.8	91.4	90		665	61	880			208			.712	35.47	65.07
Ohio.....	4	485	¹⁰ 13.8	¹⁰ 11.9	46.4	91.3	92	308		62	115						.527	24.48	48.15
Pennsylvania.....	2	34	12.4	10.4	54.6	94.9	81					6		28			.455	24.82	43.21
Wisconsin.....	3	149	13.8	13.2	54.4	121.3	95				17			132			.594	32.33	72.01
Other States.....	1	21	12.0	10.3	50.0	86.3	86				21						.467	23.35	40.33
Total.....	21	2,525	¹⁰ 12.0	¹⁰ 11.0	49.5	93.4	91	308	665	123	1,055	6		368			.662	32.78	61.82
Drill-press operators, female—1 week:																			
All States.....	1	10	6.0	5.9	48.8	47.5	97			10							.381	18.57	18.08
Drill-press operators, female—2 weeks or half month:																			
Michigan.....	3	31	12.0	11.2	48.3	96.7	93		1		5	25					.466	24.21	41.84
Other States.....	1	3	14.0	13.7	55.0	128.3	99							3			.480	26.40	61.65
Total.....	4	34	12.2	11.4	52.2	99.5	94		1		5	25		3			.467	24.39	46.50
Gear-cutter operators, male—1 week:																			
Indiana.....	4	30	6.0	5.6	50.9	49.6	97				23		7				.625	31.83	30.98
New York.....	4	75	6.0	5.8	52.7	50.7	96		14	3			58				.607	31.99	30.75
Pennsylvania.....	3	17	6.0	6.0	50.1	50.7	101		2		14			1			.650	32.54	32.95
Other States.....	3	56	5.3	4.5	49.3	38.6	78		19		37						.728	35.91	28.13
Total.....	14	178	5.8	5.4	51.1	46.7	91		35	3	74		65	1			.646	33.00	30.17

⁷ Not including data for 34 employees in 1 establishment whose days were not reported.

⁸ Not including data for 35 employees in 1 establishment whose days were not reported.

⁹ Not including data for 21 employees in 1 establishment whose days were not reported.

¹⁰ Not including data for 308 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—								Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55	Over 55.			
Gear-cutter operators, male—2 weeks or half month:																		
Michigan.....	8	207	11.6	10.6	50.0	91.0	91	.....	73	1	102	.....	.....	31	.....	\$0.745	\$37.28	\$67.78
Ohio.....	3	65	11.4.0	11.3.9	46.2	92.4	94	44	.....	5	16	.....	.....	.....	.....	.614	28.39	56.71
Pennsylvania.....	2	3	12.7	12.7	53.3	124.3	103	.....	.....	.....	.....	2	.....	1	.....	.633	33.76	78.75
Wisconsin.....	2	35	13.9	13.3	54.4	123.5	96	.....	.....	.....	4	.....	.....	31	.....	.632	34.40	78.03
Other States.....	1	9	12.0	10.3	50.0	87.1	87	.....	.....	.....	9	.....	.....	.....	.....	.560	28.00	48.76
Total.....	16	319	11.2.1	11.1.2	49.8	95.0	92	44	73	6	131	2	.....	63	.....	.696	34.65	66.19
Grinding-machine operators, male—1 week:																		
Illinois.....	2	28	6.0	5.8	49.9	53.7	108	.....	.....	3	25	.....	.....	.....	.....	.504	25.17	27.10
Indiana.....	5	105	6.0	5.7	50.5	51.0	101	.....	.....	.....	91	.....	14	.....	.....	.594	30.02	30.27
New York.....	5	154	6.0	5.9	49.3	48.0	97	.....	116	6	.....	.....	32	.....	.....	.806	39.73	38.68
Pennsylvania.....	4	53	5.9	5.7	49.6	48.7	98	.....	12	.....	40	.....	.....	1	.....	.584	28.99	28.46
Other States.....	2	290	5.2	4.8	49.4	42.0	85	.....	90	.....	200	.....	.....	.....	.....	.722	35.65	30.33
Total.....	18	630	5.6	5.3	49.6	46.1	93	.....	218	9	356	.....	46	1	.....	.696	34.52	32.06
Grinding-machine operators, male—2 weeks or half month:																		
Michigan.....	9	1,464	11.8	11.0	49.9	93.3	93	.....	552	24	702	4	.....	182	.....	.739	36.85	68.97
Ohio.....	4	232	13.9	13.0	46.9	96.2	95	130	.....	19	83	.....	.....	.....	.....	.629	29.49	60.53
Pennsylvania.....	2	42	12.1	10.7	54.9	104.0	90	.....	.....	.....	.....	2	.....	40	.....	.587	32.22	61.03
Wisconsin.....	3	182	13.9	13.5	54.8	123.8	96	.....	.....	.....	9	.....	.....	173	.....	.685	37.51	84.83
Other States.....	2	24	12.1	10.9	50.0	93.7	93	.....	.....	.....	24	.....	.....	.....	.....	.618	30.90	57.94
Total.....	20	1,944	12.1.3	12.0.6	50.1	96.7	93	130	552	43	818	6	.....	395	.....	.715	35.80	69.14
Grinding-machine operators, female—1 week:																		
All States.....	1	1	6.0	6.0	48.8	48.8	100	.....	.....	1	.....	.....	.....	.....	.....	.377	18.40	18.40

Grinding-machine operators, female—2 weeks or half month:																		
All States.....	1	2	14.5	14.0	55.0	129.3	99							2		.670	36.85	86.60
Hardeners, male—1 week:																		
Illinois.....	2	6	6.0	5.5	52.0	47.6	92			1	5					.540	28.08	25.73
Indiana.....	3	21	6.0	5.6	51.3	60.8	119				14		7			.454	24.85	29.44
New York.....	4	61	6.0	5.8	48.5	48.1	99		55	1			5			.627	30.42	30.17
Pennsylvania.....	3	29	5.9	5.7	49.7	49.2	99		5		24					.522	25.92	25.66
Other States.....	2	66	5.3	5.0	68.7	55.8	81				10			56		.544	37.35	30.34
Total.....	14	183	5.7	5.4	56.4	52.5	93		60	2	53		12		56	.558	31.47	29.29
Hardeners, male—2 weeks or half month:																		
Michigan.....	7	384	11.8	10.9	49.8	96.3	94		222	1	92			61	8	.738	36.79	71.11
Ohio.....	3	46	13 14.0	13 13.9	45.5	88.1	93	37		3	6					.574	26.14	50.53
Pennsylvania.....	2	3	12.7	10.3	54.2	95.8	81					1		2		.644	34.88	61.70
Wisconsin.....	2	50	13.9	13.5	54.6	131.3	102				4			46		.718	39.20	94.32
Other States.....	1	1	12.0	12.0	50.0	120.8	121				1					.803	40.15	97.01
Total.....	15	484	13 12.1	13 11.3	50.0	99.2	95	37	222	4	103	1		109	8	.721	36.02	71.55
Helpers, male—1 week:																		
Illinois.....	2	5	6.0	6.0	49.8	52.4	105			2	3					.423	21.07	22.16
Indiana.....	5	97	6.0	5.6	51.8	48.8	94				53		44			.402	20.83	19.60
New York.....	6	140	6.0	5.4	48.8	43.5	89		113	10			16	1		.491	23.96	21.40
Pennsylvania.....	5	56	5.5	5.5	48.9	49.0	100		35		19			2		.456	22.31	22.34
Other States.....	2	91	5.3	5.2	52.4	47.1	90		55		21				15	.559	29.30	26.37
Total.....	20	389	5.8	5.4	50.4	46.6	92		203	12	96		60	3	15	.478	24.11	22.26
Helpers, male—2 weeks or half month:																		
Illinois.....	2	33	13.0	10.0	50.0	87.7	80				33					.513	25.65	45.02
Michigan.....	9	367	11.9	10.2	50.3	93.1	89			60	189			50	1	.634	31.87	58.96
Ohio.....	4	109	14 14.0	14 11.9	49.1	104.9	92	16	67	23	70					.491	24.10	51.55
Pennsylvania.....	3	74	12.9	11.1	54.8	103.0	86									.338	18.52	34.87
Wisconsin.....	4	57	13.8	12.7	54.7	116.2	91				3			54		.620	33.94	72.09
Other States.....	1	13	12.0	9.8	50.0	83.7	84				13					.426	21.30	35.67
Total.....	23	653	14 12.6	14 10.8	51.0	97.7	89	16	67	83	308	6		172	1	.562	28.63	54.97
Helpers, female—2 weeks or half month:																		
All States.....	1	7	(15)	(15)	44.5	83.4	94	7								.381	16.95	31.78

¹¹ Not including data for 44 employees in 1 establishment whose days were not reported.

¹² Not including data for 130 employees in 1 establishment whose days were not reported.

¹³ Not including data for 37 employees in 1 establishment whose days were not reported.

¹⁴ Not including data for 16 employees in 1 establishment whose days were not reported.

¹⁵ Not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Inspectors, male—1 week:																		
Illinois.....	4	41	6.0	5.9	50.1	56.5	113	.....	.....	10	29	.....	2	.....	.....	\$0.495	\$24.79	\$28.01
Indiana.....	5	164	6.0	5.8	50.9	52.0	102	.....	.....	128	.....	36	.....	.....	.....	.520	26.46	27.02
New York.....	6	258	6.0	5.8	50.7	50.2	99	.....	138	4	.....	4	112	.....	.....	.594	30.10	29.87
Pennsylvania.....	4	45	6.0	5.9	49.6	50.2	101	.....	11	33	.....	.....	.....	1	.....	.606	30.07	30.45
Other States.....	2	500	5.3	5.2	48.7	44.1	91	.....	318	.....	182	.....	.....	.....	.....	.624	30.41	25.73
Total.....	21	1,008	5.7	5.5	49.7	47.7	96	.....	467	14	372	4	150	1	.....	.591	29.36	28.19
Inspectors, male—2 weeks or half month:																		
Illinois.....	2	30	13.0	12.4	50.0	112.4	103	.....	.....	.....	30	.....	.....	.....	.....	.641	32.05	72.07
Michigan.....	9	1,273	11.4	10.5	50.6	91.6	89	.....	134	101	823	.....	.....	215	.....	.628	31.77	57.52
Ohio.....	4	335	14.0	12.6	47.4	76.3	73	158	.....	25	152	.....	.....	.....	.....	.619	29.32	47.28
Pennsylvania.....	3	56	12.4	11.2	54.9	106.3	91	.....	.....	.....	.....	2	.....	54	.....	.562	30.86	59.75
Wisconsin.....	4	86	13.9	13.5	54.9	123.5	96	.....	.....	.....	2	.....	.....	84	.....	.520	28.54	64.18
Other States.....	1	20	12.0	10.4	50.0	93.5	94	.....	.....	.....	20	.....	.....	.....	.....	.569	28.45	53.15
Total.....	23	1,800	11.9	10.9	50.3	91.1	87	158	134	126	1,027	2	.....	353	.....	.617	31.05	56.19
Inspectors, female—1 week:																		
All States.....	2	11	6.0	5.8	49.3	48.0	97	.....	.....	6	5	.....	.....	.....	.....	.337	16.62	16.17
Inspectors, female—2 weeks or half month:																		
Michigan.....	4	173	12.4	11.3	51.0	95.1	90	.....	.....	14	84	75	.....	.....	.....	.359	18.32	34.11
Other States.....	1	13	14.0	13.0	55.0	115.8	89	.....	.....	.....	.....	.....	.....	13	.....	.294	16.17	34.07
Total.....	5	186	12.5	11.4	51.3	96.6	90	.....	.....	14	84	75	.....	13	.....	.353	18.12	34.10
Laborers, male—1 week:																		
Illinois.....	4	110	6.0	5.7	50.1	50.8	101	.....	.....	49	53	.....	8	.....	.....	.382	19.13	19.45
Indiana.....	5	362	6.0	5.8	50.9	52.0	102	.....	.....	.....	285	.....	77	.....	.....	.477	24.26	24.78
New York.....	8	637	6.0	4.2	50.3	48.6	97	.....	407	9	.....	15	176	12	18	.458	23.06	22.28

Pennsylvania.....	5	188	5.9	5.7	49.8	51.6	104	47	135	2	4	.462	22.99	23.87				
Other States.....	2	1,010	6.0	5.2	48.6	44.3	91	720	290			.476	23.12	21.08				
Total.....	24	2,307	6.0	5.1	49.6	47.6	96	1,174	58	763	15	261	14	22	.465	23.06	32.14	
Laborers, male—2 weeks or half month:																		
Illinois.....	2	149	13.0	10.9	50.0	103.9	95		149						.437	21.85	45.40	
Michigan.....	9	2,697	12.1	10.7	50.6	94.7	91	396	209	1,567			523	2	.541	27.40	51.24	
Ohio.....	4	497	17 14.0	17 12.5	48.1	103.3	95	162	67	268					.456	21.95	47.06	
Pennsylvania.....	3	84	12.7	10.8	54.7	104.7	88				11		73		.342	18.70	35.79	
Wisconsin.....	4	238	13.8	13.0	54.5	119.4	93			24			214		.470	25.61	56.06	
Other employees.....	1	10	12.0	10.2	50.0	89.5	90			10					.402	20.10	35.94	
Total.....	23	3,675	17 12.4	17 11.1	50.6	98.0	92	162	396	276	2,018	11		810	2	.514	26.02	50.36
Laborers, female—2 weeks or half month:																		
Michigan.....	4	45	12.0	11.8	50.4	98.1	97			37	8				.387	19.52	38.01	
Other States.....	1	1	14.0	14.0	55.0	118.0	91						1		.300	16.50	35.40	
Total.....	5	46	12.0	11.8	50.5	98.5	97			37	8			1	.385	19.46	37.95	
Lathe operators, male—1 week:																		
Illinois.....	3	68	6.0	5.7	49.9	50.7	102		17	51					.503	25.09	25.51	
Indiana.....	5	152	6.0	5.7	50.7	49.7	98			124	28				.570	28.92	28.31	
New York.....	6	158	6.0	5.8	49.8	48.0	96	104	10		38	6			.666	33.17	31.95	
Pennsylvania.....	4	135	5.9	5.6	49.8	47.3	95	19		115		1			.579	28.81	27.39	
Other States.....	2	206	5.2	4.8	49.5	42.7	86	48		158					.755	37.40	32.24	
Total.....	20	719	5.8	5.4	49.9	47.0	94	171	27	448		66	7		.635	31.70	29.80	
Lathe operators, male—2 weeks or half month:																		
Illinois.....	2	7	13.0	13.0	50.0	128.1	118		7						.690	34.50	88.45	
Michigan.....	9	1,633	12.0	11.1	49.9	94.8	93		9	681			210		.739	36.85	70.07	
Ohio.....	4	456	18 13.9	18 13.1	46.4	95.2	96	295	703	74	87				.613	28.42	58.35	
Pennsylvania.....	2	28	12.4	10.1	54.6	94.8	81				5		23		.536	29.24	50.87	
Wisconsin.....	3	96	13.9	13.4	54.6	119.4	93			8			88		.675	36.84	80.54	
Other States.....	1	11	12.0	10.1	50.0	85.0	85			11					.598	29.90	50.87	
Total.....	21	2,231	18 12.2	18 11.4	49.4	96.0	94	295	703	83	794	5		351	.707	34.94	67.84	
Lathe operators, female—1 week:																		
All States.....	1	1	6.0	6.0	48.8	48.8	100		1						.592	28.90	28.90	

¹⁶ Not including data for 158 employees in 1 establishment whose days were not reported.¹⁷ Not including data for 162 employees in 1 establishment whose days were not reported.¹⁸ Not including data for 295 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Lathe operators, female—2 weeks or half month: All States.....	2	11	12.0	11.0	52.3	96.4	92	.....	.....	.....	1	10	.....	.....	.....	\$0.451	\$23.58	\$43.46
Machinists, male—1 week:																		
Illinois.....	3	17	5.9	5.8	50.4	53.6	106	.....	.....	3	12	.....	2	.....	.....	.600	30.23	31.88
Indiana.....	5	74	6.0	5.9	50.8	55.1	108	.....	.....		60	.....	14	.....	.....	.572	29.03	31.52
New York.....	5	41	6.0	5.8	51.3	48.8	95	.....	15	4	.....	22	.....	.....	.....	.668	34.29	32.56
Pennsylvania.....	6	48	6.0	5.9	50.2	49.8	99	.....	5		39	.....	4	.....	.....	.628	31.53	31.26
Other States.....	2	244	5.1	5.0	48.8	45.1	92	.....	150	.....	94	.....	.....	.....	.....	.678	33.07	30.57
Total.....	21	424	5.5	5.4	49.6	48.0	97	.....	170	7	205	.....	38	4	.....	.647	32.09	31.06
Machinists, male—2 weeks or half month:																		
Michigan.....	9	687	11.9	11.4	50.3	98.2	96	.....	204	7	354	1	.....	121	.....	.778	39.12	76.42
Ohio.....	4	90	13.7	12.9	46.2	94.8	97	61	.....	9	20	.....			.....	.669	30.92	63.39
Pennsylvania.....	3	15	12.9	12.9	54.8	120.3	101	.....	.....	.....	.....	1	.....	14	.....	.458	25.11	55.12
Wisconsin.....	3	65	13.9	13.4	54.5	117.1	91	.....	.....	.....	7	.....		58	.....	.638	34.75	74.78
Other States.....	1	10	12.0	11.7	50.0	99.0	99	.....	.....	.....	10	.....	.....	.....	.....	.724	36.20	71.66
Total.....	20	867	12.2	11.7	50.3	99.6	97	61	204	16	391	2	.....	193	.....	.748	37.59	74.52
Milling-machine operators, male—1 week:																		
Illinois.....	3	22	6.0	5.7	49.9	52.1	104	.....	.....	4	18	.....			.....	.435	21.71	22.67
Indiana.....	5	84	6.0	5.7	50.4	48.8	97	.....	.....		75	.....	9	.....	.....	.537	27.08	26.23
New York.....	5	124	6.0	5.7	50.7	48.9	96	.....	63	6	.....	55	.....		.....	.611	31.00	29.86
Pennsylvania.....	4	72	5.9	5.5	56.5	47.5	84	.....	20		51	.....		1	.....	.550	31.05	26.11
Other States.....	2	184	5.1	4.8	49.0	40.5	83	.....	91	.....	93	.....	.....	.....	.....	.711	34.85	28.79
Total.....	19	486	5.6	5.3	50.8	45.6	90	.....	174	10	237	.....	64	1	.....	.613	31.16	27.95

Milling-machine operators, male—2 weeks or half month:																
Michigan.....	9	753	11.5	10.8	50.1	91.7	90	211	14	426		102	.729	36.53	66.83	
Ohio.....	4	247	14.0	12.6	46.6	93.8	93	147	61	39			.559	26.05	52.45	
Pennsylvania.....	2	13	12.3	11.3	54.6	104.5	90			2	11	.544	29.71	56.82		
Wisconsin.....	3	54	13.9	13.6	54.7	125.0	97			3	51	.640	35.02	80.02		
Other States.....	2	38	12.1	10.4	50.0	90.3	89			38		.634	31.70	57.29		
Total.....	20	1,105	12.0	11.1	49.6	94.0	92	147	211	75	506	2	164	.679	33.68	63.82
Milling-machine operators, female—1 week:																
All States.....	1	6	6.0	6.0	48.8	48.8	100		6				.322	15.71	15.71	
Milling-machine operators, female—2 weeks or half month:																
Michigan.....	2	8	12.0	10.6	52.2	91.8	88			1	7		.448	23.38	41.10	
Painters, general, male—1 week:																
Illinois.....	4	58	6.0	6.0	50.1	55.6	111		48	3	7		.586	29.34	32.58	
Indiana.....	5	224	6.0	5.6	50.6	51.0	101			190	34		.676	34.21	34.49	
New York.....	8	345	6.0	5.7	49.7	47.4	95	235	12		2	94	.639	31.78	30.28	
Pennsylvania.....	5	54	5.9	5.8	50.0	49.0	98	11		39		4	.593	29.63	29.07	
Other States.....	2	276	5.4	5.2	48.9	42.0	86	152		124			.777	37.99	32.59	
Total.....	24	957	5.8	5.6	49.7	47.3	95	398	60	356	2	135	6	.677	33.67	32.00
Painters, general, male—2 weeks or half month:																
Illinois.....	2	51	13.0	11.6	50.0	106.7	98			51			.691	34.55	73.77	
Michigan.....	9	726	12.0	10.7	51.9	95.7	92	82	109	414		121	.796	41.32	76.13	
Ohio.....	4	221	14.0	12.7	49.0	112.9	105	38		44	139		.834	40.83	94.11	
Pennsylvania.....	3	35	13.2	11.7	54.1	107.0	89				12	23	.541	29.29	57.87	
Wisconsin.....	4	111	13.7	12.4	54.1	110.9	88			20	91		.696	37.65	77.20	
Other States.....	1	13	12.0	10.4	50.0	69.1	69			13			.662	33.10	45.70	
Total.....	23	1,157	12.6	11.3	51.5	101.0	94	38	82	153	637	12	235	.779	40.13	78.67
Paint sprayers, male—1 week:																
Illinois.....	2	6	6.0	5.3	49.6	49.3	99		5	1			.664	32.92	32.71	
Indiana.....	4	20	6.0	5.8	51.0	55.2	108			15	5		.697	35.55	38.47	
New York.....	5	14	5.9	5.8	51.8	48.7	94	5			1	7	.703	36.38	34.23	
Pennsylvania.....	2	8	6.0	6.0	49.8	49.7	100	1		7			.675	33.58	33.56	
Other States.....	2	37	5.6	5.4	49.1	41.4	84	16		21			.776	38.13	32.10	
Total.....	15	85	5.8	5.6	50.1	47.2	94	22	5	44	1	12	1	.724	36.27	34.13

¹⁹ Not including data for 61 employees in 1 establishment whose days were not reported.²⁰ Not including data for 147 employees in 1 establishment whose days were not reported.²¹ Not including data for 38 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Paint sprayers, male—2 weeks or half month:																		
Illinois.....	2	2	13.0	13.0	50.0	136.0	125	.....	.....	2	.....	.....	.....	.....	.....	\$0.825	\$41.25	\$112.21
Michigan.....	8	64	12.0	11.2	50.9	97.8	93	.....	.....	6	46	.....	.....	12	.....	.773	39.34	75.75
Ohio.....	3	11	13.4	12.1	47.9	105.5	98	4	.....	2	5	.....	.....	.....	.....	.710	34.02	74.89
Pennsylvania.....	2	4	13.7	12.0	53.1	107.5	87	.....	.....	.....	3	.....	.....	1	.....	.444	23.59	47.75
Wisconsin.....	3	10	13.7	12.8	54.5	120.8	95	.....	.....	.....	1	.....	.....	9	.....	.663	36.13	80.06
Other States.....	1	1	12.0	12.0	50.0	97.9	98	.....	.....	1	.....	.....	.....	.....	.....	.700	35.00	68.53
Total.....	19	92	12.4	11.5	51.0	102.6	95	4	.....	8	55	3	.....	22	.....	.722	36.82	74.09
Planer and shaper operators, male—1 week:																		
Illinois.....	2	6	5.8	6.0	50.0	57.0	114	.....	.....	6	.....	.....	.....	.....	.....	.520	26.00	29.66
Indiana.....	2	11	5.9	5.9	50.0	51.0	102	.....	.....	11	.....	.....	.....	.....	.....	.547	27.35	27.92
New York.....	3	27	6.0	5.7	48.9	47.0	96	.....	23	.....	.....	.....	4	.....	.....	.682	33.34	32.06
Pennsylvania.....	3	3	5.7	5.7	48.7	52.0	107	.....	2	.....	1	.....	.....	.....	.....	.635	30.90	33.04
Other States.....	1	3	5.0	4.7	50.0	43.3	87	.....	.....	3	.....	.....	.....	.....	.....	.727	36.35	31.47
Total.....	11	50	5.9	5.7	49.3	49.2	100	.....	25	.....	21	.....	4	.....	.....	.628	30.97	30.89
Planer and shaper operators, male—2 weeks or half month:																		
Michigan.....	4	95	11.9	11.2	48.9	94.7	97	.....	74	.....	12	.....	.....	9	.....	.811	39.67	76.82
Ohio.....	2	10	13.1	13.1	48.4	100.6	92	3	.....	.....	7	.....	.....	.....	.....	.714	34.52	71.79
Pennsylvania.....	2	2	13.0	13.0	53.8	111.0	65	.....	.....	.....	1	.....	1	.....	.....	.521	28.01	57.88
Other States.....	2	8	13.9	13.1	54.4	115.9	91	.....	.....	1	.....	.....	.....	7	.....	.688	37.41	79.75
Total.....	10	115	12.2	11.4	49.3	97.0	95	3	74	.....	20	1	.....	17	.....	.786	38.77	76.26
Polishers and buffers, male—1 week:																		
Illinois.....	2	6	5.3	5.3	49.7	43.1	87	.....	.....	4	2	.....	.....	.....	.....	.595	29.55	25.62
Indiana.....	4	65	6.0	5.4	51.4	52.3	102	.....	.....	42	.....	.....	23	.....	.....	.744	38.25	38.96
New York.....	4	80	6.0	5.6	51.6	49.1	95	.....	32	.....	.....	.....	48	.....	.....	.636	32.82	31.26
Other States.....	2	57	5.2	5.0	48.4	41.9	87	.....	45	.....	12	.....	.....	.....	.....	.779	37.72	32.63
Total.....	12	208	5.8	5.5	50.6	48.0	95	.....	77	4	56	.....	71	.....	.....	.706	35.73	33.88

Polishers and buffers, male—2 weeks or half month:															
Michigan.....	5	263	11.5	10.7	50.5	92.1	91	75	10	134	54	811	40.92	74.67	
Ohio.....	4	60	²⁴ 13.7	²⁴ 12.2	47.4	95.5	91	27		23	1	746	35.39	71.22	
Pennsylvania.....	3	7	12.4	12.3	54.6	123.0	105				6	586	32.02	72.14	
Wisconsin.....	2	17	13.9	13.2	54.7	117.6	91			1	16	715	39.11	84.08	
Other States.....	2	9	12.4	12.4	50.0	121.3	117			9		725	36.29	88.04	
Total.....	16	356	²⁴ 11.9	²⁴ 11.1	50.2	95.2	92	27	75	10	167	1	786	39.47	74.83
Punch-press operators, male—1 week:															
Illinois.....	2	8	6.0	6.0	49.8	51.5	103		3	5		400	19.93	20.58	
Indiana.....	4	62	6.0	5.8	50.2	49.5	99			59	3	586	29.41	29.02	
New York.....	2	28	6.0	5.7	49.9	47.3	95	19			9	574	28.66	27.15	
Pennsylvania.....	3	23	5.9	5.8	49.7	49.3	99		4	19		528	26.22	26.00	
Other States.....	2	68	5.0	4.6	48.3	39.0	81	57		11		619	29.91	24.16	
Total.....	13	189	5.6	5.4	49.4	45.5	92	80	3	94	12	578	28.55	26.27	
Punch-press operators, male—2 weeks or half month:															
Michigan.....	6	801	11.7	11.0	49.1	91.9	93	594		112	95	761	37.37	69.96	
Ohio.....	4	38	²⁵ 13.2	²⁵ 12.6	45.6	89.7	95	30	6	2		561	25.57	50.28	
Pennsylvania.....	2	2	13.0	9.0	53.8	77.0	64			1	1	555	29.83	42.70	
Other States.....	2	66	13.9	13.0	54.6	124.3	97			5	61	667	36.43	82.92	
Total.....	14	907	²⁵ 11.9	²⁵ 11.2	49.4	94.1	93	30	594	6	119	1	744	36.73	70.01
Sandblasters, male—1 week:															
Illinois.....	3	18	6.0	5.3	49.9	50.1	100		3	15		525	26.21	26.33	
Indiana.....	4	51	6.0	5.4	50.4	46.8	93			46	5	551	27.77	25.80	
New York.....	3	47	6.0	5.3	50.1	44.0	88	30	1		16	525	26.29	23.07	
Pennsylvania.....	2	4	6.0	5.5	49.0	47.9	98		2	2		589	28.86	28.18	
Other States.....	2	70	5.1	4.9	52.3	46.0	88	36		28	6	611	31.95	28.11	
Total.....	14	190	5.7	5.2	50.9	46.1	91	68	4	91	21	6	565	28.78	26.08
Sandblasters, male—2 weeks or half month:															
Illinois.....	2	6	13.0	12.3	50.0	119.4	110			6		572	28.60	68.25	
Michigan.....	7	231	11.7	10.7	50.6	92.3	90	60	2	116	53	688	34.83	63.49	
Ohio.....	4	35	²⁶ 13.9	²⁶ 12.2	47.3	94.1	91	17	4	14		543	25.67	51.07	
Pennsylvania.....	2	7	10.6	10.0	54.6	91.9	79				1	378	20.66	34.72	
Wisconsin.....	2	9	13.8	13.2	55.0	120.7	94				6	516	28.38	62.22	
Other States.....	1	2	7.0	7.0	50.0	60.2	60			2	9	531	26.55	31.98	
Total.....	18	290	²⁶ 11.9	²⁶ 10.9	50.4	93.7	90	17	60	6	138	1	652	32.88	61.14

²² Not including data for 4 employees in 1 establishment whose days were not reported.

²³ Not including data for 3 employees in 1 establishment whose days were not reported.

²⁴ Not including data for 27 employees in 1 establishment whose days were not reported.

²⁵ Not including data for 30 employees in 1 establishment whose days were not reported.

²⁶ Not including data for 17 employees for 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55	Over 55.		
Screw-machine operators, male—1 week																	
Illinois.....	3	5	6.0	6.0	49.9	54.4	109	.....	.....	1	4	.....	.....	.....	\$0.492	\$24.55	\$26.72
Indiana.....	4	59	6.0	5.7	51.0	49.5	97	.....	.....	.....	44	.....	15	.....	.607	30.97	30.06
New York.....	3	152	6.0	5.7	51.1	47.7	93	.....	73	.....	.....	.....	79	.....	.631	32.26	30.11
Pennsylvania.....	3	27	6.0	5.7	49.7	49.9	100	.....	4	.....	23	.....	.....	.....	.631	31.36	31.48
Other States.....	2	201	5.1	4.8	49.6	42.2	85	.....	43	.....	158	.....	.....	.....	.756	37.48	31.92
Total.....	15	444	5.6	5.3	50.3	45.7	91	.....	120	1	229	.....	94	.....	.678	34.11	30.97
Screw-machine operators, male—2 weeks or half month:																	
Michigan.....	9	822	11.6	10.4	50.3	89.2	89	.....	205	4	483	.....	.....	130	.725	36.46	64.71
Ohio.....	4	217	13.7	12.3	46.1	91.8	94	151	.....	17	49	.....	.....	.....	.620	28.60	56.88
Pennsylvania.....	2	18	12.1	11.6	54.9	106.7	92	.....	.....	.....	1	.....	.....	17	.587	32.20	62.62
Wisconsin.....	3	160	13.9	13.6	54.8	126.5	98	.....	.....	.....	7	.....	.....	153	.655	35.88	82.86
Other States.....	1	12	12.0	10.0	50.0	84.0	84	.....	.....	.....	12	.....	.....	.....	.601	30.05	50.48
Total.....	19	1,229	12.1	11.0	50.2	94.7	91	151	205	21	551	1	.....	300	.692	34.74	65.52
Screw-machine operators, female—2 weeks or half month:																	
All States.....	1	10	12.0	11.2	50.0	92.6	93	.....	.....	.....	10	.....	.....	.....	.399	19.95	36.96
Sewing-machine operators, male—1 week:																	
Indiana.....	2	3	6.0	5.7	52.7	49.4	94	.....	.....	.....	1	.....	2	.....	.299	15.75	14.79
New York.....	3	25	6.0	6.0	50.4	52.3	104	.....	15	.....	.....	.....	10	.....	.686	34.57	35.90
Other States.....	1	2	5.0	5.0	48.0	47.8	100	.....	2	.....	.....	.....	.....	.....	.638	30.63	27.30
Total.....	6	30	5.9	5.9	50.5	51.4	102	.....	17	.....	1	.....	12	.....	.646	32.60	33.21

Sewing-machine operators, male—2 weeks or half month:																			
Michigan.....	4	70	12.1	11.6	48.0	97.1	99		60		10						.794	38.34	77.09
Other States.....	1	1	14.0	11.0	55.0	79.3	61							1			.515	28.33	40.80
Total.....	5	71	12.1	11.6	48.4	96.8	99		60		10				1		.791	38.27	76.58
Sewing-machine operators, female—1 week:																			
Indiana.....	4	69	6.0	5.3	50.7	44.3	87				57		12				.416	21.09	18.42
New York.....	3	15	6.0	5.5	51.4	44.5	87		4	3			8				.352	18.09	15.67
Other States.....	4	130	5.3	4.6	48.6	32.2	66		88	15	27						.464	22.55	14.95
Total.....	11	214	5.6	4.9	49.5	37.0	75		92	18	84		20				.436	21.57	16.12
Sewing-machine operators, female—2 weeks or half month:																			
Illinois.....	2	11	11.4	9.2	50.0	75.4	69				11						.500	25.00	37.66
Michigan.....	5	179	12.4	10.6	50.5	87.2	84			49	82	48					.480	23.25	40.08
Ohio.....	4	32	²⁸ 14.0	²⁸ 13.9	48.5	110.4	100	8		7	17						.513	24.89	56.62
Pennsylvania.....	2	11	12.5	7.7	54.3	68.0	56					3					.288	15.64	19.56
Wisconsin.....	3	58	13.8	13.0	54.7	104.0	81				4		54				.386	21.10	40.09
Total.....	16	291	²⁸ 12.8	²⁸ 11.2	51.3	91.9	83	8		56	114	51		62			.447	22.91	41.04
Sheet-metal workers, skilled, male—1 week:																			
Indiana.....	5	42	6.0	5.6	51.3	48.6	95				28		14				.747	38.35	36.32
New York.....	5	139	6.0	5.7	53.2	50.2	94		17	1			121				.791	42.11	39.75
Pennsylvania.....	2	22	6.0	5.8	48.9	48.4	99		12		10						.873	42.70	42.30
Other States.....	2	49	5.0	4.9	48.3	41.5	86		39	10							.716	34.59	29.73
Total.....	14	252	5.8	5.5	51.6	48.1	93		68	11	38		135				.779	40.18	37.46
Sheet-metal workers, skilled, male—2 weeks or half month:																			
Illinois.....	2	20	13.0	11.9	50.0	102.7	94				20						1.173	58.65	120.36
Michigan.....	7	182	10.9	9.9	51.6	87.2	86		1		101			80			.801	41.36	69.87
Ohio.....	4	209	²⁹ 14.0	²⁹ 12.5	46.6	95.6	95	128		9	72						.783	36.50	74.88
Pennsylvania.....	2	12	13.5	13.4	53.8	121.1	99					6		6			.780	40.85	92.05
Wisconsin.....	3	104	13.9	12.9	54.8	119.1	92				4			100			.689	37.76	82.06
Total.....	18	527	²⁹ 12.5	²⁹ 11.4	50.3	98.2	92	128	1	9	197		6		186		.781	39.25	76.69

²⁷ Not including data for 151 employees in 1 establishment whose days were not reported.

²⁸ Not including data for 8 employees in 1 establishment whose days were not reported.

²⁹ Not including data for 128 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—								Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55	Over 55.			
Sheet-metal workers, general, male—1 week:																		
Illinois.....	2	8	5.2	5.3	50.1	46.5	93	.....	.....	7	.....	.....	1	.....	.....	\$0.547	\$27.38	\$25.42
Indiana.....	4	67	6.0	5.7	50.7	49.6	98	.....	.....	.....	56	.....	11	.....	.....	.621	31.46	30.80
New York.....	5	249	6.0	5.7	50.4	48.1	95	.....	130	2	.....	.....	117	.....	.....	.586	29.55	28.16
Pennsylvania.....	2	32	6.0	5.7	49.9	48.2	97	.....	2	.....	30	.....	.....	.....	.....	.592	29.53	28.53
Other States.....	2	32	5.4	5.1	48.8	40.5	83	.....	19	.....	13	.....	.....	.....	.....	.743	36.27	30.10
Total.....	15	388	5.9	5.6	50.3	47.7	95	.....	151	9	99	.....	129	.....	.....	.603	30.32	28.75
Sheet-metal workers, general, male—2 weeks or half month:																		
Illinois.....	2	73	13.0	11.9	50.0	121.4	111	.....	.....	.....	73	.....	.....	.....	.....	.596	29.80	72.33
Michigan.....	7	615	11.3	10.3	49.7	88.0	89	.....	198	.....	362	.....	.....	40	.....	.729	36.21	64.19
Ohio.....	4	122	14.0	11.9	49.7	103.8	89	2	.....	50	70	.....	.....	.....	.....	.660	32.81	68.55
Pennsylvania.....	2	41	13.4	12.4	54.0	111.1	91	.....	.....	.....	.....	17	.....	.....	.....	.464	25.04	51.27
Wisconsin.....	4	50	13.2	12.3	54.1	108.5	89	.....	.....	.....	9	.....	24	.....	.....	.546	29.54	59.53
Other States.....	1	15	12.0	9.1	50.0	76.8	77	.....	.....	.....	15	.....	.....	.....	.....	.594	29.70	45.64
Total.....	20	916	12.0	10.8	50.1	94.7	90	2	198	65	529	17	.....	105	.....	.678	33.99	64.28
Testers, final and road, male—1 week:																		
Illinois.....	3	19	6.0	4.8	50.3	41.7	83	.....	.....	14	2	.....	3	.....	.....	.523	26.29	21.78
Indiana.....	5	55	6.0	5.8	50.9	48.5	95	.....	.....	.....	43	.....	12	.....	.....	.500	25.44	24.25
New York.....	7	84	6.0	5.9	50.4	49.1	97	.....	48	3	.....	1	30	2	.....	.646	32.55	31.69
Pennsylvania.....	4	33	5.9	5.9	49.8	63.3	127	.....	5	.....	27	.....	30	1	.....	.611	30.46	38.73
Other States.....	2	36	5.8	5.6	49.7	40.3	81	.....	6	.....	30	.....	.....	.....	.....	.766	38.04	30.89
Total.....	21	227	6.0	5.7	50.3	49.0	97	.....	59	17	102	1	45	3	.....	.611	30.73	29.95
Testers, final and road, male—2 weeks or half month:																		
Illinois.....	2	20	13.0	12.2	50.0	120.3	110	.....	.....	.....	20	.....	.....	.....	.....	.660	33.00	79.40
Michigan.....	8	293	11.6	10.8	51.0	98.0	94	.....	.....	5	226	.....	.....	62	.....	.638	32.57	62.47

Ohio.....	4	68	²¹ 14.0	²¹ 12.1	47.0	99.9	98	37	.....	6	25	.....	.....	.....	.....	.691	32.45	69.05
Pennsylvania.....	2	7	13.7	13.7	53.2	131.6	107	.....	.....	.....	5	.....	.....	2	.....	.552	29.37	72.61
Wisconsin.....	3	35	13.7	13.6	54.0	123.9	98	.....	.....	.....	7	.....	.....	28	.....	.547	29.54	67.70
Other States.....	1	16	12.0	10.4	50.0	90.3	90	.....	.....	.....	16	.....	.....	.....	.....	.529	26.45	47.72
Total.....	20	439	²¹ 12.1	²¹ 11.2	50.6	106.6	96	37	.....	11	294	5	.....	92	.....	.610	30.87	62.03
Testers, motor, male—1 week:																		
Illinois.....	3	23	6.0	5.5	49.9	51.5	103	.....	.....	6	17	.....	.....	.....	.....	.534	26.63	27.53
Indiana.....	5	43	6.0	5.5	51.6	47.8	93	.....	.....	.....	26	.....	17	.....	.....	.535	27.60	25.56
New York.....	7	57	6.0	5.8	52.8	50.8	96	.....	9	3	.....	2	40	3	.....	.564	29.77	28.63
Pennsylvania.....	2	2	6.0	6.0	52.5	52.5	100	.....	.....	.....	1	.....	.....	1	.....	.512	26.90	26.90
Other States.....	2	39	5.0	4.9	49.5	42.0	85	.....	9	.....	30	.....	.....	.....	.....	.761	37.70	31.95
Total.....	19	164	5.8	5.5	51.3	48.0	94	.....	18	9	74	2	57	4	.....	.592	30.36	28.44
Testers, motor, male—2 weeks or half month:																		
Illinois.....	2	5	12.6	12.6	50.0	114.2	105	.....	.....	.....	5	.....	.....	.....	.....	.638	31.90	72.85
Michigan.....	8	245	11.3	10.6	50.7	95.9	93	.....	7	22	176	.....	.....	40	.....	.676	34.28	64.83
Ohio.....	4	21	²² 14.0	²² 13.0	47.2	107.4	103	10	.....	8	3	.....	.....	.....	.....	.576	27.18	61.89
Pennsylvania.....	2	13	12.3	11.8	58.1	113.5	98	.....	.....	.....	.....	2	.....	11	.....	.521	30.26	59.17
Wisconsin.....	2	36	13.9	13.6	54.7	116.0	90	.....	.....	.....	2	.....	.....	34	.....	.647	35.41	75.04
Other States.....	1	5	18.0	10.6	50.0	70.0	70	.....	.....	.....	5	.....	.....	.....	.....	.592	29.60	41.46
Total.....	19	325	²² 11.8	²² 11.1	51.2	99.5	93	10	7	30	191	2	.....	85	.....	.653	33.44	65.14
Toolmakers, male—1 week:																		
Illinois.....	3	44	6.0	6.2	49.9	57.4	115	.....	.....	6	38	.....	.....	.....	.....	.695	34.70	39.93
Indiana.....	5	65	6.0	5.9	50.8	52.7	104	.....	.....	.....	52	.....	13	.....	.....	.651	33.07	34.28
New York.....	5	96	6.0	5.9	51.2	50.2	98	.....	37	10	.....	.....	49	.....	.....	.712	36.46	35.77
Pennsylvania.....	5	32	5.8	5.5	49.5	45.9	93	.....	11	.....	20	.....	.....	1	.....	.689	34.08	31.53
Other States.....	2	228	5.9	5.5	48.5	45.6	94	.....	175	.....	53	.....	.....	.....	.....	.768	37.22	35.05
Total.....	20	465	5.9	5.7	49.6	48.7	98	.....	223	16	163	.....	62	1	.....	.725	35.94	35.31
Toolmakers, male—2 weeks or half month:																		
Illinois.....	2	13	13.0	12.2	50.0	117.9	108	.....	.....	.....	13	.....	.....	.....	.....	.701	35.05	82.70
Michigan.....	8	494	12.0	11.4	49.9	98.8	98	.....	89	22	355	.....	.....	28	.....	.836	41.71	82.63
Ohio.....	4	42	²³ 13.6	²³ 12.2	49.6	103.7	89	1	.....	21	20	.....	.....	.....	.....	.670	33.24	69.49
Pennsylvania.....	2	24	12.1	11.9	54.9	117.3	102	.....	.....	.....	.....	1	.....	23	.....	.681	37.38	79.84
Wisconsin.....	3	40	13.8	13.6	54.5	116.6	91	.....	.....	.....	4	.....	.....	36	.....	.722	39.35	84.20
Other States.....	1	19	12.0	11.4	50.0	90.4	90	.....	.....	.....	19	.....	.....	.....	.....	.641	32.05	57.96
Total.....	20	632	²³ 12.2	²³ 11.6	50.4	101.1	97	1	89	43	411	1	.....	87	.....	.801	40.34	81.01

²⁰ Not including data for 2 employees in 1 establishment whose days were not reported.²¹ Not including data for 37 employees in 1 establishment whose days were not reported.²² Not including data for 10 employees in 1 establishment whose days were not reported.²³ Not including data for 1 employee in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Continued.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—								Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55	Over 55.			
Topbuilders, male—1 week:																		
Illinois.....	2	31	6.0	5.9	50.1	52.2	104	.....	.....	27	.....	.....	4	.....	.....	\$0.644	\$32.25	\$33.60
Indiana.....	4	264	6.0	5.2	50.7	44.6	88	.....	.....	.....	218	.....	46	.....	.....	.723	36.65	32.27
New York.....	6	159	6.0	5.9	52.0	52.1	100	.....	52	2	.....	1	103	1	.....	.783	40.69	40.84
Pennsylvania.....	4	19	6.0	5.8	49.3	48.2	98	.....	9	.....	9	.....	.....	1	.....	.647	31.91	31.16
Other States.....	2	193	5.3	5.1	48.6	40.4	83	.....	134	.....	59	.....	.....	.....	.....	.789	38.35	31.90
Total.....	18	666	5.8	5.4	50.3	45.7	91	.....	195	29	286	1	153	2	.....	.750	37.75	34.24
Top builders, male—2 weeks or half month:																		
Illinois.....	2	50	13.0	10.5	50.0	88.8	81	.....	.....	.....	50	.....	.....	.....	.....	.849	42.45	75.35
Michigan.....	7	433	12.0	11.3	51.0	95.1	92	.....	59	126	125	.....	.....	123	.....	.847	43.20	90.56
Ohio.....	4	126	14.0	12.0	49.5	104.2	90	8	.....	36	82	.....	.....	.....	.....	.809	40.05	84.34
Pennsylvania.....	2	30	13.3	10.5	54.3	93.5	77	.....	.....	.....	.....	8	.....	22	.....	.516	28.04	48.23
Wisconsin.....	3	105	13.8	13.2	54.4	104.4	82	.....	.....	.....	13	.....	.....	92	.....	.688	37.41	71.82
Total.....	18	744	12.7	11.6	51.3	97.5	88	8	59	162	270	8	.....	237	.....	.803	41.19	78.31
Top builders, female—1 week:																		
All States.....	3	13	6.0	5.8	51.8	48.9	94	.....	.....	4	2	.....	7	.....	.....	.430	22.26	21.06
Top builders, female—2 weeks or half month:																		
All States.....	2	5	11.2	9.8	52.0	87.6	84	.....	.....	.....	1	4	.....	.....	.....	.567	29.48	49.71
Trim-bench hands, male—1 week:																		
Indiana.....	3	15	6.0	5.2	51.3	44.1	86	.....	.....	.....	10	.....	5	.....	.....	.541	27.77	23.85
New York.....	4	63	6.0	5.7	50.1	46.5	93	.....	41	.....	.....	.....	22	.....	.....	.605	30.31	28.11
Other States.....	2	61	5.1	4.8	48.2	38.0	79	.....	53	8	.....	.....	.....	.....	.....	.592	28.53	22.49
Total.....	9	139	5.6	5.3	49.4	42.5	86	.....	94	8	10	.....	27	.....	.....	.593	29.29	25.18

Trim-bench hands, male—2 weeks or half month:																		
Michigan.....	3	16	12.2	11.1	49.4	92.6	86		5		11					.799	39.45	74.02
Ohio.....	4	20	³⁸ 14.0	³⁸ 11.9	48.3	97.6	89	6		4	10					.509	24.56	49.65
Other States.....	3	7	13.9	12.3	53.2	104.9	84				1	3		3		.453	24.11	47.51
Total.....	10	43	³⁸ 13.2	³⁸ 11.6	49.5	96.9	89	6	5	4	22	3		3		.602	29.79	58.37
Trim-bench hands, female—1 week:																		
Indiana.....	4	43	6.0	5.3	50.3	44.1	88				40		3			.471	23.68	20.78
Other States.....	3	43	5.3	4.6	48.7	33.5	69		29		13		1			.477	23.25	15.96
Total.....	7	86	5.7	4.9	49.5	38.8	78		29		53		4			.474	23.47	18.37
Trim-bench hands, female—2 weeks or half month:																		
Illinois.....	2	3	11.0	9.7	50.0	79.7	73				3					.382	19.10	30.47
Michigan.....	4	94	12.4	11.6	51.3	97.8	92			10	34	50				.415	21.28	40.63
Ohio.....	2	9	³⁸ 14.0	³⁸ 11.7	48.8	97.4	87	2			7					.406	19.80	39.58
Wisconsin.....	3	10	13.8	12.0	54.5	98.1	77				1			9		.394	21.47	38.70
Total.....	11	116	³⁸ 12.7	³⁸ 11.6	51.3	97.3	90	2		10	45	50		9		.412	21.15	40.12
Varnish rubbers, male—1 week:																		
Illinois.....	2	22	6.0	5.6	49.9	52.9	106			20			2			.698	24.84	36.94
Indiana.....	3	55	6.0	5.5	50.0	49.2	98				55					.756	37.80	37.20
New York.....	3	12	6.0	5.6	48.0	45.8	95		12							.746	35.81	34.12
Pennsylvania.....	2	5	5.8	5.6	48.0	49.8	104		5							.622	29.86	30.98
Other States.....	2	82	5.1	5.4	48.2	41.4	86		73		9					1.059	51.06	43.88
Total.....	12	176	5.6	5.5	49.0	45.8	93		90	20	64		2			.871	42.65	39.89
Varnish rubbers, male—2 weeks or half month:																		
Illinois.....	2	20	13.0	12.4	50.0	105.0	96				20					.995	49.75	104.47
Michigan.....	4	176	11.4	10.3	50.3	89.2	89			45	98			33		1.004	51.01	89.57
Ohio.....	2	14	14.0	13.9	49.5	116.7	100			14						.600	29.70	70.04
Pennsylvania.....	2	31	13.1	11.5	54.8	104.6	87					3		28		.436	23.87	45.64
Wisconsin.....	2	69	13.9	12.4	55.0	104.1	80							69		.812	44.66	84.60
Other States.....	1	15	12.0	9.0	50.0	77.6	78				15					.748	37.40	58.06
Total.....	13	325	12.3	11.1	51.9	95.5	87			59	133	3		130		.869	45.13	82.94

³⁴ Not including data for 8 employees in 1 establishment whose days were not reported.

³⁵ Not including data for 6 employees in 1 establishment whose days were not reported.

³⁶ Not including data for 2 employees in 1 establishment whose days were not reported.

TABLE A.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, BY OCCUPATION, LENGTH OF PAY PERIOD, SEX, AND STATE, 1922—Concluded.

Occupation, pay period, sex, and State.	Number of establishments.	Number of employees.	Average number of days worked in pay period.		Average full-time hours per week.	Average hours actually worked in pay period.	Per cent of full-time hours worked.	Number of employees whose full-time hours per week were—							Average earnings per hour.	Average full-time earnings per week.	Average earnings actually received in pay period.	
			By establishments.	By employees.				44½	48	Over 48 and under 50.	50	Over 50 and under 54.	54	55				Over 55.
Varnishers, strippers, and letterers, male—1 week:																		
Illinois.....	2	21	6.0	6.0	49.9	57.6	115			19			2			\$0.770	\$38.45	\$44.37
Indiana.....	5	94	6.0	5.6	51.0	50.3	99				70		24			.761	38.83	38.23
New York.....	7	118	6.0	5.8	52.0	50.0	96		39	1		1	76	1		.915	47.54	45.76
Pennsylvania.....	4	15	5.9	5.7	49.5	50.4	102		6		8					.699	34.62	35.24
Other States.....	2	115	5.1	5.3	48.3	40.4	84		100		15			1		1.159	55.93	46.75
Total.....	20	363	5.7	5.6	50.3	47.5	94		145	20	93	1	102	2		.919	46.25	43.61
Varnishers, strippers, and letterers, male—2 weeks or half month:																		
Illinois.....	2	30	13.0	12.0	50.0	106.1	97				30					.968	48.40	102.73
Michigan.....	5	237	11.8	10.5	51.3	93.2	93				33	141		63		.968	49.62	90.23
Ohio.....	4	54	14.0	13.2	47.4	108.9	104	24			18	12				.892	42.27	97.19
Pennsylvania.....	2	9	13.6	13.0	53.6	119.6	98					5		4		.971	52.06	116.08
Wisconsin.....	3	60	13.8	13.0	54.5	110.6	87				6			54		.910	49.60	100.68
Other States.....	1	9	12.0	11.8	50.0	102.2	102				9					.744	37.20	76.04
Total.....	17	399	12.5	11.3	51.2	99.7	94	24		51	198	5		121		.942	48.19	93.92
Other skilled employees, male—1 week:																		
Illinois.....	3	10	6.0	6.0	51.1	52.7	103			2	5		3			.621	31.73	32.71
Indiana.....	3	123	6.0	5.8	50.0	51.2	102				123					.636	31.80	32.57
New York.....	6	171	6.0	5.9	49.8	49.5	99		111	11			44	5		.680	33.87	33.69
Pennsylvania.....	5	58	5.9	5.8	49.4	50.8	103		20		37			1		.619	30.58	31.41
Other States.....	2	440	5.1	4.9	48.7	41.8	86		283		157					.659	32.10	27.52
Total.....	19	802	5.5	5.3	49.2	45.7	93		414	13	322		47	6		.656	32.29	29.96
Other skilled employees, male—2 weeks or half month:																		
Michigan.....	9	749	11.9	11.3	49.4	96.6	98		359	44	279			67		.782	38.62	75.52
Ohio.....	2	42	14.0	11.4	49.5	97.0	83			42						.625	30.94	60.64

Pennsylvania.....	3	42	12.5	10.9	54.9	105.7	90					2		40		.546	29.97	57.68
Wisconsin.....	2	18	13.8	13.7	54.2	120.4	94					3		15		.715	38.73	86.07
Other States.....	2	6	12.8	12.5	50.0	114.9	107					6				.792	39.60	91.05
Total.....	18	857	12.1	11.3	49.8	97.7	97		359	86	288	2		122		.760	37.83	74.24
Other skilled employees, female—1 week:																		
All States.....	1	1	6.0	5.0	50.0	43.0	86					1				.438	21.90	18.84
Other skilled employees, female—2 weeks or half month:																		
All States.....	2	14	12.0	11.1	49.0	90.2	92		11			3				.697	34.13	62.90
Other employees, male—1 week:																		
Illinois.....	4	30	6.0	5.9	51.6	52.7	102			6	11		13			.625	32.27	32.97
Indiana.....	5	62	6.0	5.8	50.2	53.1	106				59		3			.583	29.26	30.91
New York.....	7	191	6.0	5.9	54.4	53.4	98		84	18		5	50	4	30	.528	28.73	28.19
Pennsylvania.....	6	54	5.9	5.9	60.9	61.5	101			13	19			1	21	.417	25.41	25.65
Other States.....	2	657	5.6	5.6	48.3	47.5	98		220		396				41	.660	31.91	31.39
Total.....	24	994	5.6	5.7	50.4	49.9	99		317	24	485	5	66	5	92	.611	30.80	30.48
Other employees, male—2 weeks or half month:																		
Illinois.....	2	42	13.0	11.9	50.0	106.5	98				42					.571	28.55	60.81
Michigan.....	9	1,703	12.1	11.1	50.7	99.3	95			420	160			144	68	.679	34.43	67.47
Ohio.....	4	729	⁸⁸ 14.0	⁸⁸ 12.6	46.4	97.0	98	471			20	238				.630	29.25	61.13
Pennsylvania.....	3	18	13.0	12.3	57.7	122.8	104						4		2	.462	26.64	56.73
Wisconsin.....	4	121	13.6	13.3	53.8	119.2	95					30			91	.580	31.02	68.81
Other States.....	1	4	12.0	12.0	50.0	107.0	107					4				.581	29.05	62.14
Total.....	23	2,617	⁸⁸ 12.4	⁸⁸ 11.4	49.7	99.9	96	471	420	180	1,225	4		247	70	.657	32.65	65.57
Other employees, female—1 week:																		
All States.....	2	31	5.0	4.6	48.0	35.8	75		31							.482	23.14	17.26
Other employees, female—2 weeks or half month:																		
Michigan.....	5	69	12.2	11.3	49.9	94.0	93		11			51	7			.485	24.22	45.61
Ohio.....	2	13	⁸⁹ 1.0	⁸⁹ 13.0	44.9	66.1	72	12				1				.352	15.81	23.28
Wisconsin.....	2	7	13.9	13.0	54.3	117.8	92					1			6	.446	21.21	52.57
Total.....	9	89	⁸⁹ 12.3	⁸⁹ 11.5	49.5	91.8	90	12	11			53	7		6	.467	23.14	42.90

⁸⁷ Not including data for 24 employees in 1 establishment whose days were not reported.

⁸⁸ Not including data for 471 employees in 1 establishment whose days were not reported.

⁸⁹ Not including data for 12 employees in 1 establishment whose days were not reported.

TABLE B.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR FOR EMPLOYEES IN 14 SELECTED OCCUPATIONS, BY SEX AND STATE, 1922.

Occupation, sex, and State.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose earnings per hour were—															
				Under 20 cents.	20 and under 25 cents.	25 and under 30 cents.	30 and under 40 cents.	40 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 and under 100 cents.	100 and under 125 cents.	125 and under 150 cents.	150 and under 175 cents.	175 and under 200 cents.	200 cents and over.	
Assemblers, axle and frame, male:																			
Illinois.....	5	25	\$0.615					2	8	9	6								
Indiana.....	6	65	.609			1	3	19	13	6	15	5	3						
Michigan.....	9	627	.727				3	19	49	137	269	133	16	1					
New York.....	6	95	.582					12	37	45	1								
Ohio.....	4	232	.619					5	88	114	13	6	6						
Pennsylvania.....	5	40	.561				4	10	13	10	1	2							
Wisconsin.....	2	43	.677					6	9	10	17	1							
Total.....	37	1,127	.675			1	10	73	217	331	322	147	25	1					
Assemblers, chassis, male:																			
Illinois.....	5	35	.613					5	10	14	5	1							
Indiana.....	6	87	.615				8	16	12	5	44	1	1						
Michigan.....	10	578	.730					9	65	177	118	184	21	4					
New York.....	7	187	.540			1		53	71	53	7	2							
Ohio.....	5	310	.644				1	10	87	148	49	13	2						
Pennsylvania.....	4	102	.554				12	28	26	28	4	3	1						
Wisconsin.....	4	58	.550				1	24	6	25	2								
Total.....	41	1,357	.647			1	22	145	277	450	229	204	25	4					
Assemblers, motor, male:																			
Illinois.....	5	37	.613				1	3	8	20	5								
Indiana.....	6	204	.547			1	6	90	54	18	19	13	3						
Michigan.....	8	1,114	.730					18	56	364	387	266	21	2					
New York.....	6	229	.585					24	87	96	22								
Ohio.....	5	367	.647					28	52	186	88	10		1	1	1			
Pennsylvania.....	7	143	.511				8	65	50	10	8	2							
Wisconsin.....	4	53	.634				1	2	8	36	6								
Total.....	41	2,147	.661			1	16	230	315	730	535	291	24	3	1	1			
Assemblers, motor, female:																			
All States.....	2	2	.485					2											
Drill-press operators, male:																			
Illinois.....	6	74	.484			1	16	31	13	2	4	4							
Indiana.....	6	226	.544			1	34	68	50	30	32	10	1						

Michigan.....	10	2,075	.719	.....	2	2	71	271	474	713	483	55	3	1	.....	.....
New York.....	5	150	.542	.....	3	24	21	47	47	7	.....	.....	1	.....	.....	.....
Ohio.....	5	616	.519	.....	1	41	160	308	91	13	2	.....	.....	.....	.....	.....
Pennsylvania.....	7	153	.537	.....	.....	12	55	51	26	5	1	3	.....	.....	.....	.....
Wisconsin.....	3	149	.594	.....	.....	11	28	32	57	15	6	.....	.....	.....	.....	.....
Total.....	42	3,443	.644	.....	8	140	437	772	727	789	506	59	4	1	.....	.....
Drill-press operators, female:																
Michigan.....	3	31	.466	.....	.....	5	20	5	.....	1	.....	.....	.....	.....	.....	.....
Other States.....	2	13	.425	.....	1	5	5	2	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	5	44	.447	.....	1	10	25	7	.....	1	.....	.....	.....	.....	.....	.....
Grinding-machine operators, male:																
Illinois.....	3	31	.506	.....	.....	5	9	10	6	1	.....	1	.....	.....	.....	.....
Indiana.....	6	126	.601	.....	.....	4	18	50	24	19	9	.....	1	.....	.....	.....
Michigan.....	10	1,664	.741	.....	.....	2	40	195	343	504	437	119	24	.....	.....	.....
New York.....	5	154	.806	.....	.....	.....	5	19	62	63	5	.....	.....	.....	.....	.....
Ohio.....	5	322	.628	.....	.....	3	21	115	96	66	17	3	1	.....	.....	.....
Pennsylvania.....	6	95	.585	.....	1	3	12	41	23	11	4	.....	.....	.....	.....	.....
Wisconsin.....	3	182	.685	.....	.....	.....	7	25	59	69	21	1	.....	.....	.....	.....
Total.....	38	2,574	.710	.....	1	17	112	455	613	733	493	124	26	.....	.....	.....
Grinding-machine operators, female:																
All States.....	2	3	.572	.....	.....	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Lathe operators, male:																
Illinois.....	5	75	.520	.....	.....	2	26	35	6	4	2	.....	.....	.....	.....	.....
Indiana.....	6	163	.572	.....	.....	7	49	45	32	24	5	1	.....	.....	.....	.....
Michigan.....	10	1,791	.743	.....	.....	.....	14	186	424	572	454	113	28	.....	.....	.....
New York.....	6	158	.666	.....	.....	1	13	22	49	67	6	.....	.....	.....	.....	.....
Ohio.....	5	504	.616	.....	.....	.....	24	165	244	64	6	1	.....	.....	.....	.....
Pennsylvania.....	6	163	.572	.....	.....	6	37	67	32	15	5	.....	1	.....	.....	.....
Wisconsin.....	3	96	.675	.....	.....	.....	.....	15	49	28	3	1	.....	.....	.....	.....
Total.....	41	2,950	.689	.....	.....	16	163	535	836	774	481	116	29	.....	.....	.....
Lathe operators, female:																
Michigan.....	2	11	.451	.....	.....	2	6	3	.....	.....	.....	.....	.....	.....	.....	.....
Other States.....	1	1	.592	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	3	12	.463	.....	.....	2	6	4	.....	.....	.....	.....	.....	.....	.....	.....
Milling-machine operators, male:																
Illinois.....	4	26	.470	.....	.....	6	13	3	2	2	.....	.....	.....	.....	.....	.....
Indiana.....	6	118	.564	.....	1	6	40	25	26	16	3	.....	1	.....	.....	.....
Michigan.....	10	846	.734	.....	.....	.....	19	96	196	318	153	38	26	.....	.....	.....
New York.....	5	124	.611	.....	.....	7	14	32	50	17	3	.....	1	.....	.....	.....
Ohio.....	5	338	.582	.....	.....	7	41	165	84	34	6	1	.....	.....	.....	.....
Pennsylvania.....	6	85	.549	.....	1	2	33	21	17	8	3	.....	.....	.....	.....	.....
Wisconsin.....	3	54	.640	.....	.....	.....	6	11	26	7	4	.....	.....	.....	.....	.....
Total.....	39	1,591	.659	.....	2	28	166	353	401	402	172	39	28	.....	.....	.....

TABLE B.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR FOR EMPLOYEES IN 14 SELECTED OCCUPATIONS, BY SEX AND STATE, 1922—Concluded.

Occupation, sex, and State.	Number of establishments.	Number of employees.	Average earnings per hour.	Number of employees whose earnings per hour were—															
				Under 20 cents.	20 and under 25 cents.	25 and under 30 cents.	30 and under 40 cents.	40 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 and under 100 cents.	100 and under 125 cents.	125 and under 150 cents.	150 and under 175 cents.	175 and under 200 cents.	200 cents and over.	
Milling-machine operators, female:																			
Michigan.....	2	8	\$0.448				2	5	1										
Other States.....	1	6	.322			4	1	1											
Total.....	3	14	.394			4	3	6	1										
Toolmakers, male:																			
Illinois.....	5	57	.696					1	11	19	14	3	9						
Indiana.....	6	84	.648						13	53	16	1		1					
Michigan.....	9	547	.834							48	178	188	61	71	1				
New York.....	5	96	.712						7	22	52	14	1						
Ohio.....	5	217	.736				1		5	67	129	6			1	1	3	4	
Pennsylvania.....	7	56	.686					1	6	32	14		1	2					
Wisconsin.....	3	40	.722						1	11	24	3	1						
Total.....	40	1,097	.769				1	2	43	252	427	215	73	74	2	1	3	4	
Varnishers, strippers, and letterers, male:																			
Illinois.....	4	51	.887						5	8	12	6	4	12	4				
Indiana.....	6	103	.760					1	8	16	42	26	4	6					
Michigan.....	6	252	.971					2	8	17	19	45	48	94	19				
New York.....	7	118	.915						3	6	22	37	15	35					
Ohio.....	5	154	1.080						1	22	11	7	10	69	31	2	1		
Pennsylvania.....	6	24	.801						2	7	7	1	2	4	1				
Wisconsin.....	3	60	.910					1	2	4	9	14	15	15					
Total.....	37	762	.931					4	29	80	122	136	98	235	55	2	1		
Varnish rubbers, male:																			
Illinois.....	4	42	.839			1	1	1	2	6	7	11	6	7					
Indiana.....	4	70	.754					3	8	7	17	30	5						
Michigan.....	5	185	1.002					2		2	4	25	31	121					
New York.....	3	12	.746							1	9	2							
Ohio.....	3	87	.995					1	7	3	6		4	66					
Pennsylvania.....	4	36	.462			2	16	4	6	4	4								
Wisconsin.....	2	69	.812						1	7	27	22	10	2					
Total.....	25	501	.870			3	17	11	24	30	74	90	56	196					

Screw-machine operators, male:															
Illinois.....	3	5	.492			1	1	1	2						
Indiana.....	5	71	.606			2	18	15	22	8	4	2			
Michigan.....	10	980	.738			2	11	111	263	294	210	84	5		
New York.....	3	152	.631	1		2	8	47	62	26	6				
Ohio.....	5	260	.607			6	21	75	109	48	1				
Pennsylvania.....	5	45	.613			7	17	10	10		1				
Wisconsin.....	3	160	.655			8	25	82	42	3					
Total.....	34	1,673	.688	1		13	74	291	550	428	224	87	5		
Screw-machine operators, female:															
All States.....	1	10	.399			4	6								
Sewing-machine operators, male:															
Indiana.....	2	3	.299	1	1	1									
Michigan.....	4	70	.794			3	4	2	10	48	2	1			
New York.....	3	25	.686				4	13	5	1	2				
Other States.....	2	3	.597				1	2							
Total.....	11	101	.748	1	1	4	9	17	15	49	4	1			
Sewing-machine operators, female:															
Illinois.....	3	26	.426		3	12	8	1	2						
Indiana.....	4	69	.416	8	4	14	20	22	1						
Michigan.....	6	206	.479			42	83	57		1	1				
New York.....	3	15	.352		2	10	3								
Ohio.....	5	118	.445		9	26	48	29	4	1	1				
Pennsylvania.....	3	13	.312	3	5	3	2								
Wisconsin.....	3	58	.386		5	23	29	1							
Total.....	27	505	.442	11	28	130	193	110	27	3	2	1			
Sheet-metal workers, skilled, male:															
Illinois.....	3	30	.990				6	8	4	4		2	1		4
Indiana.....	5	42	.747				1	2	9	14	15	1			
Michigan.....	7	182	.801					9	19	53	64	31	6		
New York.....	5	139	.791			2	22	13	26	51	15	8	1		1
Ohio.....	5	248	.777			4	85	48	31	15	26	32	7		
Pennsylvania.....	4	34	.833			1	5	6	4	7	4	5	1		1
Wisconsin.....	3	104	.689			3	10	33	56	2					
Total.....	32	779	.780			11	139	136	188	158	77	53	10		3
Testers, final and road, male:															
Illinois.....	5	39	.593			10	12	12	2	2		1			
Indiana.....	6	71	.507		1	34	25	9	2						
Michigan.....	9	323	.652			30	163	55	35	35		2			
New York.....	7	84	.646			3	18	45	13	1	3		1		
Ohio.....	5	74	.689			3	8	39	15	3	5	1			
Pennsylvania.....	6	40	.601		1	2	22	7	5	2					
Wisconsin.....	3	35	.547			7	20	6	2						
Total.....	41	666	.610		2	89	268	173	74	43	11	5	1		

TABLE C.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY HOURS ACTUALLY WORKED, BY SEX AND STATE, 1922.

ONE WEEK PAY PERIOD.

[No establishment was in operation less than 4 days during the pay period.]

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working all days of operation.		Number of employees who during pay period worked—																								
		Number.	Average full-time hours per week.	Number.	Average hours per week.	Under 24 hrs.	24 and under 28 hrs.	28 and under 32 hrs.	Over 32 and under 36 hrs.	36 and under 40 hrs.	40 hrs.	Over 40 and under 44 hrs.	44 and under 48 hrs.	48 hrs.	Over 48 and under 51 hrs.	51 and under 54 hrs.	54 hrs.	Over 54 and under 57 hrs.	57 and under 60 hrs.	60 hrs.	Over 60 and under 64 hrs.	64 and under 68 hrs.	68 hrs.	Over 68 and under 72 hrs.	72 and under 76 hrs.	76 and under 80 hrs.	80 hrs. and over.			
Assemblers, axle and frame, male:																														
Illinois.....	3	22	50.4	22	46.2				2	5					12	3	9		2											
Indiana.....	5	61	50.8	38	51.6								1	19	7	4	7	2												
New York.....	6	95	51.8	84	51.4								5	3	19	4	7	44	2											
Pennsylvania.....	4	30	49.6	28	50.2										6	16	3	3	3											
Other States.....	2	150	49.2	121	47.1								53	20	8	7	15	1	14	3										
Total.....	20	358	50.3	293	49.1				2	5			58	24	33	58	32	57	19	5										
Assemblers, chassis, male:																														
Illinois.....	3	19	50.4	18	42.6				7	3					4	1	3													
Indiana.....	5	74	50.8	59	48.3					1			5	40	5	1	7													
New York.....	7	187	51.9	159	51.3								1	7	58	5	17	61	8	1						1				
Pennsylvania.....	2	77	49.7	60	53.6									2	2	33	1		7	6		4	2			3				
Other States.....	2	225	48.8	210	43.1				1				180	5	23		1													
Total.....	19	582	50.2	506	47.5				7	5			186	54	83	47	21	71	15	6	1	4	2			4				
Assemblers, motor, male:																														
Illinois.....	3	33	49.8	30	49.0			3	2		5				5			5	8			2								
Indiana.....	5	159	51.0	107	50.1								1	7	1	83	8	4	2	1										
New York.....	6	229	51.6	209	51.2								3	9	57	26	14	100												
Pennsylvania.....	4	75	50.1	71	50.4									3	4	54	1	2	6	1										
Other States.....	2	342	49.0	314	44.0				1	5	1		200	68	27	9	3													
Total.....	20	838	50.2	731	47.8			3	3	5	6		204	87	89	177	26	106	13	10		2								

[illegible]

TABLE C.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY HOURS ACTUALLY WORKED, BY SEX AND STATE, 1922—Contd.

ONE WEEK PAY PERIOD—Concluded.

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working all days of operation.		Number of employees who during pay period worked—																							
		Number.	Average full-time hours per week.	Number.	Average hours per week.	Under 24 hrs.	24 and under 28 hrs.	28 and under 32 hrs.	32 and under 36 hrs.	36 and under 40 hrs.	40 hrs.	Over 40 and under 44 hrs.	44 and under 48 hrs.	48 hrs.	Over 48 and under 51 hrs.	51 and under 54 hrs.	54 hrs.	Over 54 and under 57 hrs.	57 and under 60 hrs.	60 hrs.	Over 60 and under 64 hrs.	64 and under 68 hrs.	68 hrs.	Over 68 and under 72 hrs.	72 and under 76 hrs.	76 and under 80 hrs.	80 hrs. and over.		
Screw-machine operators, male:																													
Illinois.....	3	5	49.9	5	51.4								2						1			2							
Indiana.....	4	59	51.0	50	52.9								3	1	15	7	12	6	4		1	1							
New York.....	3	152	51.1	130	51.0							3	9	39	11	13	52	2	1										
Pennsylvania.....	3	27	49.7	25	50.3								2	2	21		1		1										
Other States.....	2	201	49.6	169	44.4				5	9	1	40	94		17			2	1		1								
Total.....	15	444	50.3	379	48.3				5	9	1	43	108	42	64	20	65	10	7		4	1							
Sewing-machine operators, male:																													
Indiana.....	2	3	52.7	2	52.0										1		1												
New York.....	3	25	50.4	25	52.3							1		8	2	4	5	1	1		1	2							
Other States.....	1	2	48.0	2	42.7							2																	
Total.....	6	30	50.5	29	51.7							3		8	3	4	6	1	1		1	2							
Sewing-machine operators, female:																													
Indiana.....	4	69	50.7	42	50.2							3			32	1	6												
New York.....	3	15	51.4	11	49.3			1			1		2				7												
Other States.....	4	130	48.6	83	51.2		33	3		6		9	19	2	11														
Total.....	11	214	49.5	136	40.2		33	4		6	1	9	24	2	43	1	13												
Sheet-metal workers, skilled, male:																													
Indiana.....	5	42	51.3	31	51.4								5		11		14	1											
New York.....	5	139	53.2	121	53.5							2	3	8	5	16	53	27	5	1		1							

TABLE C.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY HOURS ACTUALLY WORKED, BY SEX AND STATE, 1922—Contd.

TWO WEEKS OR HALF MONTH PAY PERIOD.

[No establishment was in operation less than 8 days during the pay period.]

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working on all days of operation.		Number of employees who during pay period worked—																					
		Number.	Average full-time hours per pay period.	Number.	Average hours per pay period.	52 and under 56 hrs.	56 and under 60 hrs.	60 and under 64 hrs.	64 and under 68 hrs.	68 and under 72 hrs.	72 and under 76 hrs.	76 and under 80 hrs.	80 and under 84 hrs.	84 and under 88 hrs.	88 and under 92 hrs.	92 and under 96 hrs.	96 hrs.	Over 96 and under 104 hrs.	104 and under 112 hrs.	112 and under 120 hrs.	120 and under 128 hrs.	128 and under 136 hrs.	136 and under 144 hrs.	144 and under 152 hrs.	152 and under 160 hrs.	160 hrs. and over.	
Assemblers, axle and frame, male.																											
Illinois.....	2	3	109.0	1	93.3										1												
Michigan.....	8	538	106.1	293	101.7		1		1	14	23				11	37	8	64	44	49	38	3					
Ohio.....	3	171	92.0	14	122.6															10	2		1	1			
Wisconsin.....	2	43	127.8	33	126.0									1					3		10	7	12				
Other States.....	2	14	117.1	11	115.0										2			1	1	1	6						
Total.....	17	769	104.4	352	105.2		1		1	14	23			1	11	40	8	65	48	60	56	10	13	1			
Assemblers, chassis, male:																											
Illinois.....	2	16	109.0	10	114.9														4	3	2	1					
Michigan.....	9	487	104.6	378	94.2		2	50	5	4	28	11	8	6	8	21		132	16	82		3	2				
Ohio.....	4	176	101.1	27	116.7														6	14	7						
Pennsylvania.....	2	25	121.6	17	123.0															1	13	2	1				
Wisconsin.....	4	58	125.0	52	124.4														14	10	3	2	23				
Other States.....	1	13	100.0	13	100.2											1		12									
Total.....	22	775	105.9	497	100.2		2	50	5	4	28	11	8	6	8	22		144	40	110	25	8	26				
Assemblers, motor, male:																											
Illinois.....	2	4	109.0	4	111.4														2	2							
Michigan.....	7	951	100.8	667	99.9					1	3	23	50	6	28	32	19	259	229	13	2	2					
Ohio.....	4	188	102.0	60	120.3														8	34	5	8	5				
Pennsylvania.....	3	68	117.0	33	121.0															5	6	17	3	2			
Wisconsin.....	4	53	127.7	45	118.3														11	13	19	2					
Other States.....	1	45	100.0	24	100.4												1	20	3								
Total.....	21	1,309	102.9	833	103.3					1	3	23	50	6	28	32	20	279	258	57	43	13	7				

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TABLE C.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY HOURS ACTUALLY WORKED, BY SEX AND STATE, 1922—Concl'd.

TWO WEEKS OR HALF MONTH PAY PERIOD—Concluded.

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working on all days of operation.		Number of employees who during pay period worked—																					
		Number.	Average full-time hours per pay period.	Number.	Average hours per pay period.	52 and under 56 hrs.	56 and under 60 hrs.	60 and under 64 hrs.	64 and under 68 hrs.	68 and under 72 hrs.	72 and under 76 hrs.	76 and under 80 hrs.	80 and under 84 hrs.	84 and under 88 hrs.	88 and under 92 hrs.	92 and under 96 hrs.	96 hrs.	Over 96 and under 104 hrs.	104 and under 112 hrs.	112 and under 120 hrs.	120 and under 128 hrs.	128 and under 136 hrs.	136 and under 144 hrs.	144 and under 152 hrs.	152 and under 160 hrs.	160 hrs. and over.	
Milling-machine operators, female:																											
All States.....	2	8	104.1	5	103.8												1	1	3								
Screw-machine operators, male:																											
Michigan.....	9	822	100.7	549	97.4					2	3	21	42	24	19	51	85	188	92	20	1				1		
Ohio.....	4	217	97.7	43	117.0														2	41							
Pennsylvania.....	2	18	115.5	14	112.1														3	3	5	2	1				
Wisconsin.....	3	60	129.2	128	130.0														1	9	7	10	77	8	16		
Other States.....	1	12	100.0	6	100.0														6								
Total.....	19	1,129	104.1	740	104.5					2	3	21	42	24	19	51	85	198	106	73	13	78	8	17			
Screw-machine operators, female:																											
All States.....	1	10	100.0	6	99.2											1		5									
Sewing-machine operators, male:																											
Michigan.....	4	70	97.6																								
Other States.....	1	1	130.0	51	101.4							1		1		3	19	7	16	2	2						
Total.....	5	71	98.0	51	101.4							1		1		3	19	7	16	2	2						
Sewing-machine operators, female:																											
Illinois.....	2	11	109.0	4	99.1					1									3								
Michigan.....	5	179	104.3	82	104.0								2	5	3	5	2	30	5	20	9						
Ohio.....	4	32	110.5	22	119.8															15	5	1	1				
Pennsylvania.....	2	11	121.1	4	117.5														1	1	2						
Wisconsin.....	3	58	128.0	28	113.3											1		2	2	23							
Total.....	16	291	110.5	140	108.6					2			2	5	3	6	2	32	11	59	16	1	1				

[illegible]

TABLE D.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY EARNINGS ACTUALLY RECEIVED, BY SEX AND STATE, 1922.

ONE WEEK PAY PERIOD.

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working on all days of operation.		Number of employees who during pay period earned.—																		
		Number.	Average full-time earnings per pay period.	Number.	Average earnings per pay period.	\$8 and under \$10.	\$10 and under \$12.	\$12 and under \$14.	\$14 and under \$16.	\$16 and under \$18.	\$18 and under \$20.	\$20 and under \$25.	\$25 and under \$30.	\$30 and under \$35.	\$35 and under \$40.	\$40 and under \$45.	\$45 and under \$50.	\$50 and under \$55.	\$55 and under \$60.	\$60 and under \$65.	\$65 and under \$70.	\$70 and under \$75.	\$75 and under \$80.	\$80 and over.
Assemblers, axle and frame, male:																								
Illinois.....	3	22	\$31.80	22	\$29.14							2	10	5	5									
Indiana.....	5	61	30.73	38	30.80						3	9	6	8	8	3		1						
New York.....	6	95	30.14	84	29.83						1	7	30	36	10									
Pennsylvania.....	4	30	27.05	28	26.98						4	7	8	8		1								
Other States.....	2	150	35.74	121	33.95							2	44	26	33	14	2							
Total.....	20	358	32.32	293	31.33						8	27	98	83	56	18	2	1						
Assemblers, chassis, male:																								
Illinois.....	3	19	29.27	18	24.62				2	2	1	5	4	2	2									
Indiana.....	5	74	32.54	59	30.92							14	2	34	8	1								
New York.....	7	187	28.00	159	27.75				1		1	37	65	46	9									
Pennsylvania.....	2	77	29.25	60	31.75							17	15	11	6	4	4	2		1				
Other States.....	2	225	34.83	210	30.57							1	104	98	7									
Total.....	19	582	31.18	506	29.65				3	2	2	74	190	191	32	5	4	2		1				
Assemblers, motor, male:																								
Illinois.....	3	33	30.51	30	30.26				2			4	9	7	7	1								
Indiana.....	5	159	28.22	107	27.87					2	5	48	14	13	11	11	3							
New York.....	6	229	30.17	209	29.88						5	30	84	43	45	2								
Pennsylvania.....	4	75	26.25	71	26.42				1		3	30	24	6	4	3								
Other States.....	2	342	35.03	314	31.48					1		1	141	131	33	3	2		1		1			
Total.....	20	838	31.27	731	29.95				3	3	13	113	272	200	100	20	5		1		1			
Drill-press operators, male:																								
Illinois.....	4	52	21.48	47	22.72				3	2	5	24	10	3										
Indiana.....	5	205	27.89	167	28.92			1	1	8	16	41	29	24	30	7	10							
New York.....	5	150	27.78	120	28.55			1	1	5	8	19	37	31	15	3								

TABLE D.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY EARNINGS ACTUALLY RECEIVED, BY SEX AND STATE, 1922—Continued.**ONE WEEK PAY PERIOD—Continued.**

Occupation, sex, and State.	Number of establishments.	All employees.		Employees working on all days of operation.		Number of employees who during pay period earned—																			
		Number.	Average full-time earnings per pay period.	Number.	Average earnings per pay period.	\$8 and under \$10.	\$10 and under \$12.	\$12 and under \$14.	\$14 and under \$16.	\$16 and under \$18.	\$18 and under \$20.	\$20 and under \$25.	\$25 and under \$30.	\$30 and under \$35.	\$35 and under \$40.	\$40 and under \$45.	\$45 and under \$50.	\$50 and under \$55.	\$55 and under \$60.	\$60 and under \$65.	\$65 and under \$70.	\$70 and under \$75.	\$75 and under \$80.	\$80 and over.	
Screw-machine operators, male:																									
Illinois.....	3	5	\$24.55	5	\$26.72	.....	.....	1	.....	.....	.....	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indiana.....	4	59	30.97	50	32.48	.....	.....	.....	.....	.....	.....	8	13	13	8	4	3	1	.....	.....	.....	.....	.....	.....	.....
New York.....	3	152	32.26	130	32.62	.....	.....	.....	.....	.....	1	5	34	48	33	8	1	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania.....	3	27	31.36	25	32.24	.....	.....	.....	.....	.....	.....	2	8	8	5	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Other States.....	2	201	37.28	169	34.06	.....	.....	.....	.....	6	6	6	20	49	52	24	4	2	.....	.....	.....	.....	.....	.....	.....
Total.....	15	444	34.11	379	33.14	.....	.....	1	.....	6	7	22	76	119	99	37	9	3	.....	.....	.....	.....	.....	.....	.....
Sewing-machine operators, male:																									
Indiana.....	2	3	15.75	2	16.35	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York.....	3	25	34.57	25	35.90	.....	.....	.....	.....	.....	.....	.....	10	6	2	4	.....	2	.....	1	.....	.....	.....	.....	.....
Other States.....	1	2	30.63	2	27.29	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	6	30	32.60	29	35.26	.....	.....	1	.....	.....	.....	1	12	6	2	4	.....	2	.....	1	.....	.....	.....	.....	.....
Sewing-machine operators, female:																									
Indiana.....	4	69	21.09	42	19.86	.....	3	6	.....	8	2	14	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York.....	3	15	18.09	11	17.46	.....	1	3	1	2	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other States.....	4	130	22.05	83	17.92	4	13	27	.....	3	5	6	23	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	11	214	21.57	136	18.48	4	17	36	1	13	8	23	31	2	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sheet-metal workers, skilled, male:																									
Indiana.....	5	42	38.35	31	37.27	.....	.....	.....	.....	.....	.....	1	1	8	8	12	.....	1	.....	.....	.....	.....	.....	.....	.....
New York.....	5	139	42.11	121	42.94	.....	.....	.....	.....	.....	.....	2	10	10	19	23	42	11	1	.....	1	1	.....	.....	.....
Pennsylvania.....	2	22	42.70	17	45.50	.....	.....	.....	.....	.....	.....	.....	.....	6	3	2	3	1	.....	.....	.....	.....	.....	.....	.....
Other States.....	2	49	34.68	43	31.11	.....	.....	.....	.....	.....	1	2	11	27	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	14	252	40.18	212	39.92	.....	.....	.....	.....	.....	1	5	22	51	32	37	45	13	2	.....	1	1	.....	.....	1

TABLE D.—NUMBER OF EMPLOYEES IN 14 SELECTED OCCUPATIONS WORKING ON AS MANY DAYS AS FACTORY WAS IN OPERATION DURING PAY PERIOD, CLASSIFIED BY EARNINGS ACTUALLY RECEIVED, BY SEX AND STATE, 1922—Continued.

TWO WEEKS OR HALF MONTH PAY PERIOD.

Occupation, sex, and State.	All employees.			Employees working on all days of operation.		Number of employees who during pay period earned—																										
	Number of establishments	Number.	Average full-time earnings per pay period.	Number.	Average earnings per pay period.	Under \$30.	\$30 and under \$35.	\$35 and under \$40.	\$40 and under \$45.	\$45 and under \$50.	\$50 and under \$55.	\$55 and under \$60.	\$60 and under \$65.	\$65 and under \$70.	\$70 and under \$75.	\$75 and under \$80.	\$80 and under \$85.	\$85 and under \$90.	\$90 and under \$95.	\$95 and under \$100.	\$100 and under \$110.	\$110 and under \$120.	\$120 and under \$130.	\$130 and under \$140.	\$140 and under \$150.	\$150 and under \$160.	\$160 and under \$170.	\$170 and under \$180.	\$180 and under \$190.	\$190 and under \$200.	\$200 and over.	
Assemblers, axle and frame, male:																																
Illinois.....	2	3	\$59.17	1	\$45.02																											
Michigan.....	8	538	76.60	293	75.53				3	10	14	21	51	25	27	22	24	19	48	12	11	6										
Ohio.....	3	171	55.02	14	63.42					1	2	1	3	3	4																	
Wisconsin.....	2	43	86.52	32	86.44		1				1	2	3	2	1	1	5		1	3	11	2										
Other States.....	2	14	73.05	11	62.73					1		3	4	1		2																
Total.....	17	769	72.04	352	75.62		1		3	13	17	27	61	31	32	23	31	19	49	15	22	8										
Assemblers, chassis, male:																																
Illinois.....	2	16	71.07	10	76.78							1		2	3			2	2		2											
Michigan.....	9	487	75.21	378	68.67			1	6	53	32	17	48	83	28	13	22	11	51	10	2		1									
Ohio.....	4	176	63.73	27	73.47				1	3	1	2	1	4	3	2	1	4	3		2											
Pennsylvania.....	2	25	54.84	17	55.27			1	3	5		4	1				2				1											
Wisconsin.....	4	58	69.86	52	68.72			1	8	5	2	3	2	6		2		1	1	2												
Other States.....	1	13	61.50	13	47.11				1	11	1						1	19														
Total.....	22	775	70.64	497	68.08			3	19	77	36	27	52	95	36	15	26	36	57	13	4		1									
Assemblers, motors, male:																																
Illinois.....	2	4	67.25	4	68.71							1	1	1				1														
Michigan.....	7	951	73.28	667	72.83		8	3	2	4	13	41	61	106	148	131	66	56	17	8	2	1										
Ohio.....	4	188	62.42	60	66.02					3	9	15	4	9	6	4	5	3														
Pennsylvania.....	3	68	58.03	33	61.95			1		7	5	2	7	2	3	2	1	1	1	1												
Wisconsin.....	4	53	80.96	45	75.75				2	2	1		1	1	5	15	13	4	1													
Other States.....	1	45	54.70	24	52.74				2	7	5	9				1																
Total.....	21	1,309	70.59	833	71.47		8	4	6	23	33	63	74	119	163	152	85	65	19	11	2	1										

[illegible]

OCCUPATIONS IN THE AUTOMOBILE INDUSTRY.

The occupations for which data are presented in this report are arranged below alphabetically and the various terms used are defined in the glossary which follows this list.

On account of the lack of standardization of occupations, operations, or jobs and of the different occupational terms given by different establishments to the same operation or job, and on the other hand the same designation given to different operations or jobs by different establishments, it was extremely difficult to select a satisfactory list of occupations that could be used in classifying or grouping employees by occupations. From 50 to 150 or more different occupational terms were found in each establishment. The name and number of terms varied with the organization and the number of employees in each establishment. The name of the occupation term as it appears in the various tables in this report is shown below in italics, followed by job terms as found in the various establishments for the same class of work.

Apprentices.

Assemblers, axle and frame, include axle assemblers which include differential assemblers, hydraulic pressmen, tire pressmen, wheel gangmen; also frame assemblers which include air hammermen, bench hands, buckers, drillers, hangers, riveters, riveters' helpers, and rivet heaters.

Assemblers, chassis, include brake assemblers, brake drum men, cable assemblers, hangers, motor assemblers, riveters, and steering-gear men.

Assemblers, final, include bench hands, cable assemblers, filers, final assemblers, handy men, headlight assemblers, pan men, repair men, tiremen, ventilator men and wind-shield assemblers; also body assemblers which include bodymen, dash liners, fender men, hangers, hingemen, repair men, riveters, and running-board bolters; and also electricians which include wiremen and wire strippers.

Assemblers, motor, include motor assemblers which include bearing scrapers, belt men, carburetor assemblers, clutch assemblers, engine builders, hydraulic-press operators, motor assemblers, motor repair men, and pedal assemblers; and also transmission assemblers.

Bench hands, machine shop, include bearing scrapers, filers, and straighteners.

Blacksmiths, skilled, include annealers, Bradley hammermen, drop forgers, hammermen, hammersmiths, hot fitters, and spring makers.

Blacksmiths, general, include blacksmiths' helpers, drop forgers' helpers, furnace helpers, furnacemen, handy men, heaters and straighteners; and also bulldozers, die-machine operators, and flangers.

Body builders include band-saw operators, bench hands, body repair men, cabinet-makers, dado operators, dovetail operators, filers, frame builders, frame dressers, Gainer operators, hand benders, handy men, jointer operators, miter-machine operators, mortise-machine operators, saw filers, sawyers, squeakmen, steering-wheel groovers, sticker operators, surfacers, swing-saw operators, tenoners, and window assemblers.

Boring-mill operators.

Drill-press operators include radial-drill operators and tapping-machine operators.

Gear-cutter operators.

Grinding-machine operators include cylinder grinders, rough grinders (*see Glossary*), and surface grinders; also cutter grinders and tool grinders.

Hardeners include carbonizers, case hardeners, die hardeners, heat treaters, and tool hardeners; also furnace tenders.

Helpers.

Inspectors include bench men, body inspectors, casting inspectors, chassis inspectors, engine inspectors, final inspectors, finished-parts inspectors, floor inspectors, forging inspectors, layout inspectors, light adjusters, motor inspectors, and scleroscope operators.

Laborers include body washers, car loaders, car washers, cleaners, craters, handy men, unskilled; rough grinders, scrap balers, stock chasers, stock handlers, stock laborers, supply-room attendants, sweepers, tool-crib men, tool-room attendants, truckers, wash-tank men, and window washers.

Lathe operators.

Machinists include journeymen machinists, machine setters, machine-tool repair men, and job setters.

Milling-machine operators include profiler and thread miller; also key seaters and spliners.

Letterers, stripers, and varnishers include monogram men and body finishers, body varnishers, color varnishers, enamellers, final touch-up men, finish varnishers, and grainers.

Painters, general, include body buffers, cleaners, deoxidine men, enamel rubbers, enamel sanders, glazers, handy men, metal finishers, metal sanders; also painters which include brush men, color mixers, color varnishers, dippers, floccote men and paint mixers; and also roughers, rough-stuff rubbers, sanders, and scaffold men.

Paint sprayers include air-brush men and sprayers.

Planer operators include shaper operators.

Polishers and buffers include metal finishers.

Punch-press operators include broach operators.

Sand blasters include air hammermen, casting cleaners, chippers, cleaners, rough grinders, snaggers, and tumblers.

Screw-machine operators include bolt cutters.

Sewing-machine operators.

Sheet-metal workers, skilled, include bumpers, and ding men.

Sheet-metal workers, general, include bench hands, handy men, machine operators (sheet metal), and shear operators; also radiator repair men which includes solderers.

Testers, final and road, include final testers, motor repair men, tuners, road testers, motor adjusters, and motor repair men.

Testers, motor, include block testers, dynamometer testers, motor adjusters, silent-room testers, valve testers, and transmission testers.

Tool makers include tool repair men; also die makers, die sinkers, gauge makers, and jigmen.

Top builders include back hangers which include body packers; also body trimmers which include carpet cutters, chop-knife operators, curtain fitters, cutters, door trimmers, final fitters, hair-picker operator, leather cutters, seat trimmers, and trimmers; also cushion builders which include clincher-strip men, cushion crimpers, cushion makers, cushion press operators, cushion stuffers, and leather cutters; also top builders which include bow assemblers, bow trimmers, and bow setters; also trim bench hands which include leather cutters and leather sorters.

Varnish rubbers.

Other skilled employees include bakelite men, braziers, carpenters, champfer-machine operators, final repair men, floor board fitters, floor board molders, glass grinders, glaziers, handy men, job setters, layout-men, pattern makers, welders, acetylene welders, and spot welders.

Other employees include beltmen, bolt-cutter operators, bulldozers, copper platers, dopers, handy men, maters, tool-crib men, and working foremen.

GLOSSARY OF TERMS FOUND IN THE AUTOMOBILE INDUSTRY.

Air brush man. (See Paint sprayer.)

Air hammerman uses a pneumatic-air hammer for riveting or chipping.

Annealer reduces the brittleness and increases the toughness of metals by heating and slowly cooling.

Assembler. (See Assembler of each specified part, as axle, body, bow, brake, cable, carburetor, chassis, clutch, differential, final, finish, headlight, motor, pedal, small parts, transmission, window, and wind shield.)

Axle assemblers are of two kinds: (1) Front-axle assembler, and (2) rear-axle assembler.

(1) The front-axle assembler attaches the spindle and kingbolt and the steering knuckle to the axle and the tie-rod to the steering arms, adjusts the tie-rod in length to give the front wheels the proper running adjustment, and assembles the front spring to the axle.

(2) The rear-axle assembler attaches the spring clips and support plates to the axle tubes, assembles the differential into the differential housing, attaches the housing to the tubes, puts in and adjusts the axle shafts, and assembles the springs to the axle.

Back hanger fits the leather or fabric backs of the seats to the body, puts in the filling, and tacks the back to the body.

Bakelite man prepares the composition which forms the ball on the gear-shift lever, the radiator cap, horn and switch buttons, etc., weighs and puts it into the molds and does the baking.

Band-saw operator operates a band saw in cutting various irregular pieces for the body.

Bearing scraper scrapes in the crankshaft bearings.

Beltman repairs broken belts, adjusts loose belts, and in some cases oils the line shafts in the factory, or an employee who adjusts the fan belts on the finished motor.

Bench hand or man does mechanical operations at a bench, such as filing, scraping, fitting, etc.; assembles wind shields and other parts at a bench; assists in assembling the metal frame by doing small assembly operations at a bench; shapes wooden parts of the body frame, or assembles them at a bench, or inspects small parts at a bench; often known as a bench inspector.

Blacksmith forges with a hand hammer.

Blacksmith's helper sometimes known as *striker*; swings the hammer under the direction of the blacksmith, looks after the fire, cuts and arranges stock, and renders general assistance to the blacksmith.

Block tester runs the motor on a block under its own power before it is installed in the chassis, to determine whether or not it is defective.

Body assembler does not assemble the parts of the body as the term suggests, but attaches minor parts to the already assembled body.

Body buffer buffs the final body finish to give it a high gloss.

Body builder, a skilled woodworker who shapes the integral parts of the body frame with various woodworking machines and also assembles such parts.

Body finisher applies the finish coat of enamel or varnish to the body.

Body inspector examines the varnished or enameled body for defects in the finish.

Body mounter assists in lifting and placing the body on the frame of the chassis.

Body packer assists in upholstering the sides, back, and other upholstered parts of the body other than the seats.

Body repairer repairs any defective part of the body frame in order that the body frame may be acceptable to the body inspector.

Body trimmer attaches the leather and other trimmings to the inside of the body.

Body varnisher, a painter who applies the varnish or enamel to the body.

Body washer washes the body of the finished car.

Bolt-cutter operator operates an automatic machine which turns out the bolt from stock, cutting and threading it, or operates a machine which threads the bolt only.

Boring-mill operator operates a boring machine.

Bow assembler puts metal sockets over the ends of the top bows.

Bow setter attaches the bows to the top supports on the body.

Bow trimmer covers with top lining material that part of the bow which comes in contact with the top.

Bradley hammerman operates a Bradley power hammer which consists of a rocker arm, one end of which is fitted with a hammer. It is used mainly in drawing out processes in the blacksmith shop.

Brake assembler assembles and adjusts brake rods and brake bands.

Brake-drum man attaches brake drums to the spokes of the rear wheels.

Brazier joins pieces of metal by heating them and melting a brazing material (usually spelter) which forms the joint between the pieces.

Broacher runs a machine on the principal of a punch press, cutting oil grooves, key ways, truing up holes, etc.

Brushman does hand brush painting on the body or other parts.

Bucker holds a bucking bar against the head of a rivet while it is being riveted.

Buffer, metal, buffs brass and nickel parts before or after plating.

Bulldozer operates a bulldozing machine, which automatically and without previous heating, cuts metal rods or coils into bolts, valve tappets, etc., and puts heads on them.

Bumper operates automatic hammer or uses hand hammer in shaping parts of bodies from sheet metal.

Cabinetmaker. In some factories the cabinetmaker makes body frames. In others he does the high-grade interior finishing of closed cars.

Cable assembler installs the cables from the storage battery to the starting motor, and from the generator to the storage battery.

Carbonizer hardens the surface of the wearing parts of the transmission, such as the gear teeth, etc., by heating the parts in small furnaces or pots, using bone meal, potassium cyanide, etc. Often called case hardener.

Carburetor assembler assembles the carburetor or attaches the assembled carburetor to the motor.

Car loader assists in loading the finished automobiles on railroad cars.

Carpenter does various kinds of carpentry work, usually the less skillful work in body building, such as making the floor boards, toe boards, etc.

Carpet cutter cuts the carpet to the proper shape and size for the floor.

Car washer. (See Body washer.)

Case hardener. (See Carbonizer.)

Casting inspector examines the casting as they come from the foundry to determine if they meet the required specifications.

Casting cleaner cleans sand from castings by rolling or tumbling them in barrels or churns, or by blowing a blast of sand on them.

Chamfer-machine operator runs a machine especially designed to cut a bevel, round, or groove, on the edges of various metal parts.

Chassis assembler does the various specialized operations in the assembly of the chassis.

Chassis inspector examines the work of the chassis assemblers to determine if the work has been done in a proper manner.

Chipper cuts superfluous metal from rough castings, using hand or pneumatic hammer.

Chop-knife operator runs a machine, the knives of which are of various sizes and shapes, which works on the principle of a leather punch, and cuts leather for seats, etc.

Cleaner cleans parts with gasoline, oil, acid, or soap and water.

Clincher-strip man puts strips under the seat and back upholstery. Upholstery buttons pass through the strips and are clinched.

Clutch assembler puts the parts of the clutch together.

Color mixer mixes paint to give it the proper color and consistency.

Color varnisher applies the various coats of color varnish to the body and hood.

Copper plater plates with copper all pieces which are to be carbonized. The plating is removed from the wearing surfaces of the pieces before the process of carbonizing or casehardening, so that only the wearing surfaces are exposed and hardened.

Crater assists in crating or packing material and parts for shipment.

Curtain fitter fits the curtains to the top and body.

Cushion crimper puts the crimp in the leather of the seats and backs.

Cushion maker builds the seats and back cushions.

Cushion-press operator operates a press used in upholstering the stuffed covering of the seat and back cushions.

Cushion stuffer arranges the hair or other stuffing in the padding of the seat and back cushions.

Cutters cut out the material for the cushions, backs, curtains, and tops. There are two classes of cutters—leather cutters and cloth cutters.

Cylinder grinder runs a horizontal grinding machine which has a circular motion as well as a horizontal movement, used in grinding the inside surface of the cylinders.

Dado operator runs a Gainer, a woodworking machine equipped to cut certain kinds of slots or grooves.

Dash liner assembles the dash and gets it ready for the ammeter, speedometer, oil gauge, clock, etc.

Deoxidine man removes rust and corrosion from metal parts chemically or otherwise before the parts are painted.

Die hardener hardens dies by tempering.

Die-machine operator runs a machine in the forge department which is equipped with a die that stamps out forgings automatically.

Die maker makes dies for die machines, or an employee who makes die nuts.

Diesinker engraves designs in solid metal with hand tools. The engraved designs, after hardening, are used to reproduce the designs on sheet or solid metal.

Differential assembler assembles the parts of the differential.

Ding man removes with the aid of a padded mallet small dents or depressions in the surface of sheet-metal parts. The dents are often invisible and located by sense of touch.

Dipper dips small parts into paint or enamel.

Door trimmer puts the leather or other lining, molding, etc., on the inside of the doors.

Doper operates a force pump which forces grease into all of the bearings of the finished car. This operation is the first complete lubrication of a new car.

Dovetail operator runs a woodworking machine that makes the necessary cuts into the ends of two pieces of wood which are to be dovetailed together.

Driller, frame, drills holes for rivets in the various parts of the frame.

Drill-press operator operates a drill press or a radial drill.

Drop forger forges castings with a power hammer and dies.

Drop-forger's helper. (See Heater.)

Dynamometer tester tests the power of the newly assembled motors with a dynamometer before installation of the motors on the chassis.

Electrician installs necessary wiring for lighting and ignition.

Enameler enamels the chassis, fenders, and the wheels.

Enamel rubber uses an abrasive and oil in rubbing the surface of the enamel, giving luster and gloss to the new car.

Enamel sander. (See Enamel rubber.)

Engine builder assembles the various parts of motors or engines. In some establishments the builder is sufficiently skilled to build the complete motor, fitting and assembling all its parts, while in many establishments the work is specialized.

Engine inspector examines the engine as the parts are being assembled or examines the assembled engine.

Fender man (fitter) attaches the fenders to the chassis.

Filer does the necessary filing of parts at a bench, usually in the machine shop.

Final assemblers do specialized assembling or attaching of various parts to the body after it has been placed on the chassis.

Final fitter puts on the final fittings or trimmings of the seats and top.

Final inspector examines the completely assembled car to see that it is complete in detail with no part or article of equipment missing; that it is not marred by marks or scratches on the body; and that it is in so far as can be determined by visual inspection, ready for the sales department.

Final repair man makes such minor repairs or adjustments of the motor, chassis, or any other part of the car as is found necessary by the final test or inspection in order that the car may be ready for the sales department.

Final tester tests the car after it has been completely assembled to ascertain if there is anything wrong with the motor, transmission, or running gear. This test is made by running the new car a few miles and listening for noises which indicate to the trained ear of the tester whether or not any of the parts are out of adjustment.

Final touch-up man repairs any scratches or imperfections in the finish of the completed car.

Finished-parts inspector inspects the parts as they come from the machine to determine if they have been machined according to specifications.

Finisher. (See Finish assembler; Finish varnisher.)

Finish assembler completes the last operations of assembling.

Finish varnisher applies the last or finish coat of varnish.

Flanger forms flanges on forgings or makes flanges for pipe work, using hand hammer, power hammer, or die machine.

Flotote man applies the prime coat or base for the finish of varnish or enamel.

Floor-board fitter fits the boards in the floor of the body.

Floor-board molder puts the molding around the edges of the floor boards.

Floor inspector. (See finished parts inspector.)

Forging and casting inspector inspects forgings and castings for flaws and other imperfections.

Frame builder assembles and fastens together the skeleton frame of the body.

Frame dresser dresses the joints and edges of the wooden body frame, making a smooth surface for the sheet-metal covering of the frame.

Furnace helper (furnace loader) puts material into the carbonizing furnace and removes it from the furnace, working under instructions of the furnace tender.

Furnace man. (See Heater.)

Furnace tender is in charge of carbonizing furnaces, regulates the temperature of the furnace by adjusting the flow of oil, instructs helpers as to putting material into and removing material from the furnace. He is also called casehardner. (See Carbonizer.)

Gainer operates a woodworking machine which makes a groove.

Gauge maker specializes in making gauges.

Gear cutter operates one of the various types of gear-cutting machines.

Glass grinder grinds the bevel on plate glass.

Glazer applies putty glaze, which is a mixture of putty and oil, to rough spots on the body to make the surface smooth.

Glazier cuts and fits glass in the windshields, curtains, etc.

Glue man, a laborer who looks after the glue used in body building, keeping it ready for use and helping to apply it. He is sometimes called glue-machine operator.

Grainer finishes the inside woodwork of the car to resemble the grain of any wood.

Hair picker operates a machine which fluffs the hair used in upholstering seats and cushions.

Hammerman operates a power hammer. (See Drop forger.)

Hammersmith operates power hammers such as the Bradley hammer. He differs from the hammerman in that he does no forging with dies, while the drop forger uses dies.

Hand bender bends by hand and tacks in place on bodies small bead molding, etc.

Handy man is a term applied to many employees, most of them laborers, the term being given by employment managers to employees who do various kinds of unskilled work, semiskilled work, or skilled work. The term is sometimes applied to laborers because such employees take more pride in their work if called handy man instead of common laborer.

Hanger rivets or bolts parts in place. In some shops called fender man, running-board bolter, etc.

Hardener operates small furnaces, cyanide pots, or lead pots, used in hardening small metal parts.

Headlight assembler fastens headlights in place.

Heater regulates the heat of the furnace and heats the parts for the drop forger. During the forging he blows the scales from the forging with compressed air. Sometimes called drop forger's helper or furnace man.

Heat treater a term sometimes applied to all employees in the heat-treating department. (See Annealer; Casehardener; Furnace tender; Hardener.)

Helper, a general term, applied usually to an employee who assists skilled employees.

Hinge man bolts or rivets door hinges in place.

Hot fitter. This term varies in use, usually meaning an employee skilled in fitting two pieces of metal together by shrinking, one piece being heated and fitted over a cold piece. As the heated piece cools it contracts, holding the two pieces together by friction or squeeze produced by contraction. This method is used in fitting the metal tire base over the felloe of the wheel.

Hydraulic-press operator runs a hydraulic press used in pressing solid tires on truck wheels, fly wheels on crankshafts, etc.

Inspector. (See Different kinds of inspectors herein listed.)

Instrument-board man bolts instrument board in place. This term is applied in some establishments to the employee who attaches ammeter, clock, oil gauge, speedometer, etc., to the instrument board.

Jig man specializes in making jigs and fixtures.

Jointer operator operates a small woodworking machine known as a jointer.

Job setter. (See Machine setter.)

Key seater operates a key-seating machine.

Laborer does the various kinds of unskilled work, such as trucking, sweeping, car washing, cleaning, loading, handling stock or material, etc.

Lathe operator runs a woodturning lathe or an employee who runs a metal-working lathe.

Layout inspector examines the laying out of the sheet metal used for body, hood, fenders, etc.

Leather sorter sorts leather for quality before it is cut into pieces for backs and seats, or inspects the pieces after the cutting has been done and eliminates any that can not be used.

Light adjuster inspects lights on finished cars.

Machine repair man makes necessary repairs and adjustment of defective machine tools.

Machine setter sets and adjusts machines, or tools in machines, for machine operators, or sets dies on die-forging machines.

Machinist. A skilled and experienced workman who, working from blue prints and specifications, uses various machine tools in the production of accurate metal parts; but more often in this industry he is an employee who repairs, adjusts, or sets machine tools to be operated by other employees.

Mater sorts and mates floor boards, running boards, etc.

Metal filer. (See Filer.)

Metal finisher. (See Metal sander; Polisher; Buffer; etc.)

Metal sander uses sand in making the surface of sheet metal rough or in removing, dirt, grease, rust, etc., from the surface before the sheet metal is painted.

Milling-machine operator operates a milling machine.

Miter-machine operator runs a woodworking machine used in cutting material for miter joints.

Monogram man paints monograms on cars.

Mortise-machine operator runs a woodworking machine which cuts a recess or mortise into a piece of wood for the tenon of another piece.

Motor adjuster and tester inspects and adjusts the motor after the block test.

Motor assembler does the various specialized operations in assembling motors.

Motor inspector inspects the work during the assembly of motors or inspects assembled motors.

Motor repair man repairs defects found in motors by inspectors.

Paint mixer. (See Color mixer.)

Paint sprayer sprays paint on body and other parts of cars. Sometimes called air-brush man.

Panman bolts the oil pan in place.

Pattern maker makes wood or metal patterns used by molders in making molds for castings.

Pedal assembler assembles clutch and brake pedals.

Planer operator operates a woodworking planer, or an employee who operates a machine-shop planer.

Polisher polishes brass and nickel parts.

Preheater heats tools and metal parts before they are treated in heat-treating furnaces.

Profiler operates a vertical milling machine used in following a profile in cutting out parts and in cutting shallow recesses.

Punch-press operator operates a punch press.

Radial-drill operator operates a drilling machine which has a horizontal arm by which machine drilling may be done at any point within the circumference of the arm.

Repair man. (See Different kinds of repair men herein listed.)

Riveter fastens the parts of the frame together with rivets.

Riveter's helper. (See Bucker.)

Rivet heater heats rivets.

Road tester drives the chassis several miles to test the motor.

Rougher uses felt and emery wheel to remove rust and scale from sheet-metal parts.

Rough grinder grinds lugs and surplus metal from rough castings and forgings, or uses a disk grinder to rough grind parts which are to be sweated or riveted together, or grinds pieces of turned metal leaving only one-thousandth or two-thousandths of an inch for the final grinder or polisher.

Rough-stuff rubber rubs down primer, filler, and rough coats of paint with curled hair or mineral wool.

Running-board bolter bolts the running board in place.

Sand blaster operates sand-blasting machine in removing sand from castings.

Sander cleans and slightly roughens the surface of parts with sandpaper before the parts are painted.

Saw filer sharpens saws with a file.

Sawyer operates a power saw.

Scaffold man assists in moving scaffold used in some shops by body painters.

Scleroscope operator operates a machine which tests hardness of metal.

Scrap baler runs a baling press used in pressing into bales scraps of leather, tin, paper, cloth, or other material.

Screw-machine operator operates a screw machine.

Seat trimmer, usually an employee who working at a bench builds auxiliary seat.

Shaper operator operates a wood shaper in the body shop, or an employee who operates a metal-working shaper.

Shear operator operates rotary or square shears used in cutting sheet metal.

Sheet-metal worker, if skilled, does the various operations necessary in performing sheet-metal work on cars; if a specialist, does only a certain few of the operations.

Sewing-machine operator operates a machine used in sewing curtains, tops, panels, and backs.

Silent-room tester uses a stethoscope in testing motors.

Small-parts assembler assembles miscellaneous small parts.

Snagger extracts core wires from castings.

Solderer does necessary soldering or fastening together of parts of radiator, of electric wiring, etc.

Spliner operates a machine used in cutting keyways and grooves.

Sprayer. (See Paint sprayer.)

Spring maker uses Bradley or drop hammer in drawing out spring steel used in making leaf springs.

Squeak man inserts an antisqueak material in many of the joints, or an employee who inspects cars for squeaks.

Steering-gear man assembles and adjusts steering gear.

Steering-wheel groover operates a special machine which cuts the thumb groove in steering wheel.

Sticker operator operates a woodworking machine which in one operation planes four sides of a piece of material.

Stock chaser. (See Stock laborer.)

Stock handler. (See Stock laborer.)

Stock laborer unpacks and distributes stock to bins, trucks stock to various departments as needed, and does other work of like character which requires little or no skill.

Straightener in blacksmith shop straightens rods, bars, and other metallic articles by heating and striking with a hammer; or in machine shop straightens cam shafts, crank shafts, etc., with lathe or a special bench machine.

Striker. (See Blacksmith's helper.)

Striper paints stripes on body and wheels.

Supply-room attendant. (See Tool-room attendant.)

Surface grinder operates a machine which holds a piece of metal true and grinds the surface.

Surfacer runs a sandpaper machine in body-making department.

Sweeper sweeps floors.

Swing-saw operator operates a swinging buzz saw used in cutting timbers, boards, etc.

Tapping-machine operator runs a modified drill press used only for tapping.

Tenoner operates a woodworking machine which cuts a tenon on the end of a piece of material for the mortise of another piece.

Tester. (See Different kinds of testers herein listed.)

Thread-miller operator runs a milling machine which cuts a thread or worm.

Tireman puts tires on rims.

Tire pressman operates a power press used in pressing solid tires on truck rims.

Tool-crib man works in tool crib or room in which tools are stored, cleans tools, carries or trucks them to workmen, and returns them to the crib.

Tool grinder sharpens cutting parts used in various machine tools.

Tool hardener tempers tools.

Toolmaker makes jigs, fixtures, or parts of machine tools.

Tool repair man makes and repairs parts of machine tools.

Tool-room attendant carries or trucks supplies into and out of the tool room.

Top builder covers top frame of car and fastens streamers, quarter pads, curtain pockets, etc.

Touch-up man. (See Final touch-up man.)

Transmission assembler assembles parts of transmission.

Transmission tester tests assembled transmission. In this test two pulley wheels replace the rear wheels, transmission being driven by belts while an expert adjuster sets the gears.

Trimmer performs any operation in the trim shop in establishments in which the work is not specialized; cuts parts for the top; builds tops; or hangs backs, etc., in other establishments.

Trucker trucks material into, out of, or about the establishment.

Tumbler. (See Casting cleaner.)

Tuner adjusts carburetor and spark of engine.

Valve tester tests ground valves.

Varnisher. (See different kinds of varnishers herein listed.)

Varnish rubber rubs down coats of varnish and all except last coat of finish with pumice stone and water or pumice stone and oil.

Ventilator man installs ventilator in dash.

Wash-tank man washes grease and dirt from parts by putting them in strong lye or sal soda solution.

Welder, acetylene, welds with acetylene gas.

Welder, spot, welds with electric current.

Wheel-gang man assembles axles to truck wheels and operates tire press in pressing solid tires on wheels.

Window assembler puts in window frame and fits sash in closed cars.

Window washer washes windows of closed cars.

Wind-shield assembler usually works at a bench, puts glass in metal frame, and in some establishments adjusts shield on the dash.

Wireman installs electric wiring in cars.

Wire stripper strips terminal ends of insulated wires used in wiring cars.

Working foreman, an employee who does productive work and also directs the work of other employees.