

INDUSTRY WAGE SURVEY

Machinery Manufacturing

MARCH—MAY 1961

Bulletin No. 1309

UNITED STATES DEPARTMENT OF LABOR

Arthur J. Goldberg, Secretary

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Preface

The present study is the 15th in a series of surveys of occupational wages in machinery (nonelectrical) manufacturing industries, conducted by the Bureau of Labor Statistics. Wage data for selected occupations in 21 areas were obtained largely by mail between March and May 1961 from establishments visited by Bureau field economists in a similar study conducted during the winter of 1959-60. Personal visits were made to nonrespondents and to respondents reporting unusual changes since the previous survey. Individual reports issued at the completion of the survey in each area, usually within a few weeks after the payroll period studied, are available on request. Most of the occupational data relate to men workers but data for a few women's jobs are shown in some of the areas.

This report brings together and analyzes data for all 21 areas. Occupational data are presented for the machinery industries as a whole in each of the 21 areas and separately for machine tools, metal cutting types and for special dies and tools, die sets, jigs and fixtures, and machine-tool accessories and measuring devices in selected areas. The distributions of workers by occupational earnings contained in the separate area releases are reported here for six jobs. Data on wage practices and supplementary wage benefits were not obtained in the current study; however, such information from the previous study is summarized in this report.

This report was prepared by Fred W. Mohr of the Bureau's Division of Wages and Industrial Relations. Field work for the survey was directed by the Assistant Regional Directors for Wages and Industrial Relations.

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Industry Wage Survey—

Machinery Manufacturing, March—May 1961

Summary

Average straight-time hourly earnings of production and related workers in the nonelectrical machinery industries rose by 3.1 percent during the past year in 21 areas surveyed by the Bureau of Labor Statistics in March—May 1961.¹

Detroit, with average straight-time hourly earnings above \$3.15 for most skilled jobs studied, continued to lead in pay levels for machinery workers among the areas studied. Tool and die makers were generally the highest paid occupational group studied, averaging more than \$3 an hour in a majority of the areas.

Characteristics of the Machinery Industries

Machinery (nonelectrical) manufacturing, as defined for purposes of this study, includes a group of metalworking industries whose products differ greatly in size, complexity, and use. For example, some establishments were primarily engaged in the production of ball and roller bearings, whereas others manufactured such items as industrial machinery, precision metalworking tools, or electronic computing machines. In the 21 areas combined, approximately one-fifth of the workers were employed in each of 3 industry groups—construction, mining, and material handling machinery and equipment; metalworking machinery and equipment; and general industrial machinery and equipment.

Various types of machinery were manufactured in each of the areas studied. In some areas, however, a substantial proportion of the workers were engaged in the production of a particular group of machinery items. For example, a large percentage of the workers were employed in the manufacture of farm machinery and equipment in Milwaukee; oilfield machinery and equipment in Dallas and Houston; and metalworking machinery and equipment in Cleveland, Detroit, Pittsburgh, and Worcester.

At the time of the survey, estimated employment in the machinery industries in the respective areas ranged from fewer than 3,500 in Denver and Portland to 77,000 in Chicago. Other major areas included Detroit (59,000), Milwaukee (49,000), Los Angeles—Long Beach (37,000), and Cleveland (35,000). Employment also exceeded 25,000 in Hartford, Newark and Jersey City, and Philadelphia; was between 10,000 and 25,000 in Boston, Buffalo, Houston, Minneapolis—St. Paul, New York City, Pittsburgh, St. Louis, and San Francisco—Oakland; and between 7,000 and 10,000 in Baltimore, Dallas, and Worcester.

Approximately two-fifths of the estimated half-million workers in the machinery industries in the 21 areas were employed in establishments with fewer than 250 workers, another two-fifths in establishments with 250 to 2,499 workers, and one-fifth in establishments employing 2,500 or more. The largest of these three establishment-size groups accounted for a majority of the workers in Hartford and Milwaukee and almost one-half in Philadelphia. In contrast, establishments

¹ See appendix A for scope and method of survey. For definitions of areas and the payroll period covered in the respective areas, see table in appendix A.

with fewer than 250 workers employed a majority of the workers in Dallas, Denver, Los Angeles—Long Beach, New York City, Portland (Oreg.), and San Francisco—Oakland, and almost one-half in Boston, Chicago, and Detroit.

Data concerning unionization were not obtained in the 1961 study. At the time of the 1959–60 survey, however, nearly three-fourths of the production employees in the 21 areas combined were in establishments having labor-management contracts covering a majority of their workers.² By area, contract coverage ranged from virtually all of the production workers in San Francisco—Oakland to about two-fifths in Baltimore and Los Angeles—Long Beach, and one-eighth in Dallas.

Data concerning the prevalence of incentive wage payments also were not obtained in the current study. At the time of the previous survey, a majority of the production workers in each of the 21 areas studied were paid on an hourly-rate basis. The proportions of the workers who were paid on an incentive basis ranged from less than one-tenth in Dallas, Detroit, Houston, and the three West Coast cities, to about two-fifths in Hartford and Worcester.

Trends in Earnings

Average straight-time hourly earnings of production workers in the 21 areas studied rose 3.1 percent between the winter of 1959–60 and March–May 1961, compared with an increase of 4.1 percent between the winters of 1958–59 and 1959–60.

In a majority of the areas, changes in average straight-time hourly pay levels between the pay periods studied in 1960 and 1961 were within a range of 3 to 4.5 percent. The increase was greatest in Minneapolis—St. Paul (5.9 percent). Average changes in two areas amounted to less than 2 percent. Variations in wage movements among areas may be partly attributable to the timing and frequency of wage negotiations among establishments in the areas. For example, Houston which had practically no change since the 1960 survey period had the largest increase—7.4 percent—between 1959 and 1960 and the smallest increase between 1958 and 1959.

General wage changes usually account for most of the year-to-year movement in earnings; however, other factors such as labor turnover, incentive earnings, and changes in employment in establishments with different pay levels, also affect the trend in wages. Thus, during a period of declining economic activity, an increase in the overall level of wages may reflect a reduction in the proportion of workers with the least seniority and the lowest level of earnings, rather than any adjustment in individual rates. During periods of expansion, the reverse may be true.

The extent of wage movement varied between the skilled and unskilled occupations studied, as well as among areas. For the 21 areas combined, average straight-time hourly earnings of tool and die makers (other than jobbing) rose 3.6 percent, or about 11 cents an hour during 1960, compared with an increase of 4 percent, or about 8 cents for material handling laborers. Since 1945, when the first occupational wage relationship study was conducted for the machinery industries, there has been a substantial reduction in the percentage differentials between the wages of these two groups. During this period, average earnings of material handling laborers increased by 169.7 percent and

² See Wage Structure: Machinery Manufacturing, Winter 1959–60, BLS Report 170 (1960).

Indexes of average straight-time hourly earnings¹ of production workers in machinery manufacturing in selected areas and occupations, March–May 1961 and January 1960² and percent of change for selected periods

Area and occupation	Indexes (1947–49=100)		Percent change from—					
	Mar.– May 1961	Jan. 1960	Jan. 1960 to Mar.–May 1961	Jan. 1959 to Jan. 1960	Jan. 1958 to Jan. 1959	Jan. 1956 to Jan. 1958	Jan. 1955 to Jan. 1956	Jan. 1945 to Mar.–May 1961
<u>Area</u>								
All areas combined ³ -----	173.7	168.6	3.1	4.1	3.3	10.2	4.8	142.4
Baltimore -----	181.7	174.2	4.3	2.8	6.1	10.6	6.0	151.1
Boston -----	171.9	164.8	4.3	5.1	4.6	9.7	3.1	147.0
Buffalo -----	176.1	169.3	4.0	3.4	2.7	11.5	5.9	132.2
Chicago -----	170.0	167.5	1.5	4.3	3.8	9.0	4.1	143.6
Cleveland -----	167.7	164.2	2.1	6.8	2.1	9.5	5.4	129.5
Dallas -----	162.7	157.8	3.1	3.0	3.5	9.5	2.7	110.1
Detroit -----	173.0	168.4	2.8	4.1	2.3	11.5	5.2	122.6
Hartford -----	178.8	170.8	4.7	4.7	3.1	11.3	4.7	150.1
Houston -----	169.2	169.6	⁴ -2	7.4	.9	11.6	5.2	128.9
Los Angeles–Long Beach ---	171.2	166.2	3.0	4.0	2.5	10.8	4.8	122.5
Milwaukee -----	179.2	173.2	3.5	3.9	3.3	11.4	4.8	164.3
Minneapolis–St. Paul -----	176.2	166.4	5.9	3.9	2.7	8.9	4.0	146.0
Newark and Jersey City ----	166.6	160.0	4.1	1.4	4.4	8.7	4.9	127.0
New York City -----	163.1	156.8	4.0	2.9	1.3	8.7	3.2	130.6
Philadelphia -----	175.6	170.2	3.2	4.2	5.0	7.1	3.8	146.5
Pittsburgh -----	188.2	183.0	2.9	2.8	5.5	11.7	8.4	170.6
St. Louis -----	183.1	175.4	4.4	3.7	3.5	9.8	5.5	170.6
San Francisco–Oakland ----	181.3	176.1	3.0	2.5	8.5	18.5	1.1	137.1
<u>Occupation</u>								
Laborers, material handling ---	184.9	177.8	4.0	3.4	4.7	12.6	3.6	169.7
Tool and die makers (other than jobbing) -----	170.8	164.9	3.6	3.9	4.1	9.8	4.9	126.7

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

² Data for the periods shown as January cover various months of the winter.

³ Includes data for 3 areas (Denver, Portland (Oreg.), and Worcester) not shown separately.

⁴ Due to changes in incentive earnings and in the proportions of workers in some job classifications in establishments of different pay levels, the index for Houston decreased 0.2 percent between the payroll periods studied in 1960 and 1961.

earnings of tool and die makers increased by 126.7 percent. Most of the narrowing occurred between 1945 and 1953, largely because of cents-per-hour increases granted "across the board." Average hourly earnings of workers in these job classifications increased about 26 and 23 percent, respectively, since January 1956. Between 1959 and 1960, the percentage increase was slightly greater for tool and die makers than for laborers.

Levels of Earnings

Average straight-time hourly earnings for the occupations studied in the 21 areas in March–May 1961 were generally highest in Detroit. (See table A-1.) Other areas commonly ranking in the upper one-fourth included Milwaukee, Pittsburgh, and San Francisco–Oakland. For most occupations, average hourly earnings were lowest in Dallas. Baltimore, Boston, New York City, and Worcester

ranked comparatively low for several occupations. Differences between the highest and the lowest area average hourly earnings for most occupations ranged from 80 cents to \$1.10.

Tool and die makers were the highest paid occupational group studied in most areas. Men engaged in the production or maintenance of tools and dies used in the establishments in which they were employed had average earnings of \$3 or more in 13 of the 21 areas. Their average earnings ranged from \$2.65 an hour in Dallas to \$3.53 in San Francisco-Oakland. Machine-tool operators, who set up their own machines and perform a variety of machining operations to close tolerances (class A), had average hourly earnings ranging from \$2.35 in Dallas to \$3.19 in Detroit; in about half of the areas, their average earnings were above \$2.75 an hour. Area averages for men in the intermediate group of machine-tool operators (class B) ranged from \$2 to \$2.73 and for those who performed more routine, repetitive operations (class C), from \$1.67 to \$2.51.

Janitors and cleaners, the lowest paid of the men's jobs studied in nearly all areas, averaged from \$1.47 an hour in Dallas to \$2.34 in Detroit. Where comparisons were possible, area average earnings for material handling laborers were generally from 10 to 20 cents higher. Dallas and Baltimore were the only areas in which workers in either of these jobs averaged less than \$1.75 an hour.

In Cleveland, a center of manufacture of metal cutting types of machine tools, occupational average earnings in this branch of the industry were generally higher for most of the jobs which could be compared than in the machinery industries as a whole. (See table A-4.) In Chicago and Detroit, the two largest machinery producing areas, pay levels for most of the jobs that could be compared were higher in shops producing special dies and tools, die sets, jigs and fixtures than in plants manufacturing machine-tool accessories and measuring devices (table A-5).

Data were also tabulated for the special dies and tools industry in Cleveland and for special dies and tools and machine-tool accessories industries in Boston, Hartford, Los Angeles-Long Beach, Milwaukee, Newark and Jersey City, and New York City; oilfield machinery in Los Angeles-Long Beach; paper and printing machinery in New York City; and textile machinery in Philadelphia.

Women, accounting for a relatively insignificant proportion of the workers in the machinery industries,³ were most commonly employed in routine assembly and inspection or repetitive machine operations. In the 10 areas for which data are presented in table A-2 for those performing routine assembly operations (class C), their average earnings ranged from \$1.74 in Los Angeles-Long Beach to \$2.48 in Cleveland.

In nearly all instances where comparisons by method of wage payment were possible, workers paid on an incentive basis had higher average earnings than workers in the same occupation who were paid on a time basis (table A-3).

³ The 1959-60 study indicated that women accounted for fewer than a tenth of the machinery manufacturing plant workers in the 21 areas combined.

Supplementary Wage Benefits, Winter 1959-60

Information on supplementary wage benefits was not obtained in the 1961 study. Data from the 1959-60 study are briefly summarized below.⁴

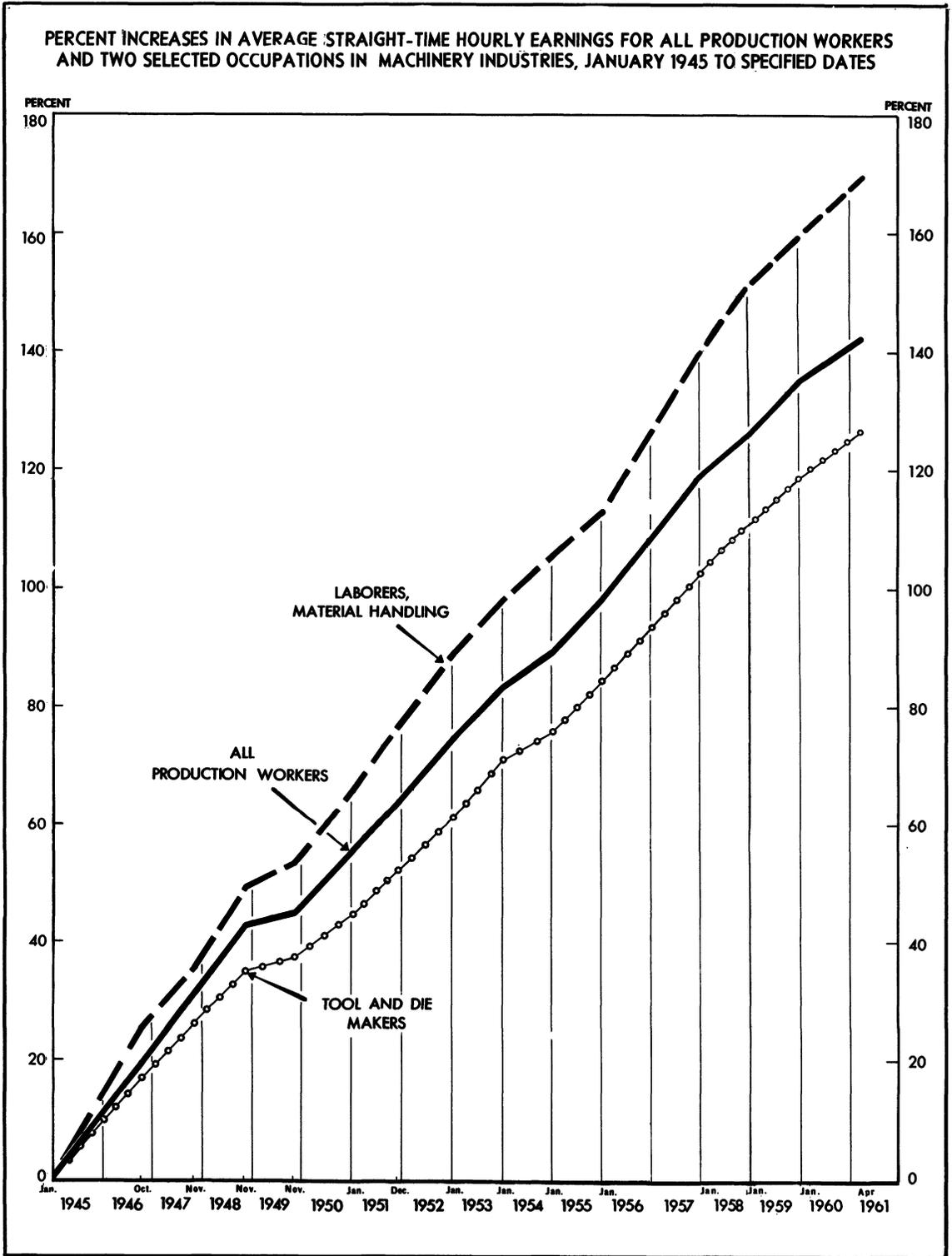
At the time of the 1959-60 survey, practically all workers in the non-electrical machinery industries in the 21 areas studied were employed in establishments providing paid holidays, paid vacations, and some type of insurance or pension plan. Provisions for office workers were generally somewhat more liberal than those for production workers. More than three-fifths of the production workers in Boston, Worcester, and New York City received 8 or more full-day holidays annually; a majority in Dallas received 5 full days; and in all other areas, a majority received either 6 or 7 full-day holidays. Some workers in all areas studied in the New England, Middle Atlantic, and Middle West regions received half days in addition to the full-day holidays.

At least 1 week of vacation pay after 1 year of service was provided in establishments employing nearly all production workers in the 21 areas. More than four-fifths of the workers in each of the areas received at least 2 weeks after 5 years of service. Three-fifths or more of the workers in all areas except Dallas received at least 3 weeks after 15 years of service.

Life insurance, hospitalization, and surgical plans were available to about four-fifths or more of the production workers in practically all areas. Sickness and accident insurance and medical insurance were also commonly provided in several areas. More than three-fifths of the production workers in 13 areas and smaller proportions in the remaining areas were employed in establishments with retirement benefits (other than those available under Federal Old-Age, Survivors, and Disability Insurance).

⁴ See BLS Report 170, op. cit., pp. 6-7, and tables C-1 through C-11.

The provisions in effect at the time of the 1961 survey may not have been exactly the same as those reported in the 1959-60 study as some changes in benefits may have occurred during the past year.



A: Occupational Earnings

Table A-1. Machinery Manufacturing—Men Workers

(Average straight-time hourly earnings¹ of men in selected production occupations, 21 selected areas, March–May 1961²)

Occupation	New England						Middle Atlantic								South							
	Boston		Hartford		Worcester		Buffalo		Newark and Jersey City		New York City		Phila- delphia		Pittsburgh		Baltimore		Dallas		Houston	
	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings	No. of work- ers	Avg. hourly earn- ings
Assemblers, class A	404	\$ 2.70	174	\$ 2.71	256	\$ 2.62	298	\$ 2.70	678	\$ 2.85	1,117	\$ 2.65	580	\$ 2.66	369	\$ 3.07	131	\$ 2.91	154	\$ 2.16	284	\$ 2.58
Assemblers, class B	423	2.34	469	2.32	186	2.29	230	2.50	1,225	2.30	682	2.22	405	2.27	194	2.79	73	2.28	161	1.74	143	2.26
Assemblers, class C	248	1.93	553	1.97	76	2.13	92	2.33	185	2.21	670	2.09	213	1.89	68	2.44	50	1.89	100	1.43	49	2.13
Electricians, maintenance	60	2.70	119	2.76	43	2.59	55	2.74	142	2.91	52	2.86	90	2.92	125	3.03	26	2.70	28	2.41	93	2.97
Inspectors, class A	141	2.66	181	2.44	97	2.52	105	2.78	241	2.66	165	2.80	284	2.73	145	3.25	55	2.95	45	2.41	166	2.79
Inspectors, class B	114	2.37	251	2.36	75	2.46	119	2.61	181	2.49	74	2.35	205	2.82	75	2.70	25	2.74	39	1.95	165	2.71
Inspectors, class C	68	2.08	282	2.26	-	-	24	2.56	124	2.33	102	1.71	47	2.64	-	-	16	2.00	-	-	14	2.23
Janitors, porters, and cleaners	170	1.76	264	1.93	90	1.89	179	2.01	364	1.77	184	1.80	270	1.97	204	2.21	93	1.61	132	1.47	205	1.84
Laborers, material handling	135	2.02	352	2.03	117	2.01	123	2.21	486	2.04	345	2.04	200	2.10	188	2.26	62	1.80	154	1.42	235	1.90
Machine-tool operators, production, class A ³	1,512	2.64	1,217	2.71	765	2.52	835	2.64	1,857	2.73	2,232	2.65	2,140	2.77	1,584	3.02	694	2.61	582	2.35	1,291	2.69
Automatic-lathe operators, class A	23	2.78	-	-	-	-	23	2.52	-	-	27	2.97	22	3.04	-	-	-	-	50	2.38	82	2.75
Drill-press operators, radial, class A	100	2.68	54	2.55	69	2.39	107	2.58	163	2.88	102	2.62	248	2.70	129	2.69	26	3.02	-	-	108	2.63
Drill-press operators, single- or multiple-spindle, class A	80	2.85	24	2.53	26	2.50	-	-	71	2.46	142	2.40	77	2.49	-	-	-	-	29	2.19	34	2.40
Engine-lathe operators, class A	184	2.64	101	2.70	90	2.55	117	2.65	360	2.69	327	2.65	258	2.77	210	3.14	88	2.47	99	2.48	220	2.80
Grinding-machine operators, class A	182	2.69	380	2.74	144	2.57	65	2.71	152	2.62	142	2.75	273	2.52	182	2.94	32	2.91	51	2.44	154	2.60
Milling-machine operators, class A	149	2.79	123	2.76	128	2.51	102	2.62	324	2.69	463	2.67	229	2.75	170	2.98	50	2.99	84	2.34	144	2.73
Screw-machine operators, automatic, class A	57	2.77	110	2.61	17	2.55	-	-	31	3.09	40	2.76	-	-	-	-	-	-	26	2.24	52	2.66
Turret-lathe operators, hand (including hand screw machine), class A	205	2.58	175	2.71	124	2.44	140	2.59	260	2.77	341	2.64	379	2.74	239	2.93	98	2.84	184	2.34	304	2.70
Machine-tool operators, production, class B ³	659	2.29	1,442	2.52	458	2.33	560	2.41	1,340	2.58	961	2.26	1,233	2.72	584	2.71	338	2.44	386	2.00	402	2.56
Automatic-lathe operators, class B	-	-	-	-	24	2.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drill-press operators, radial, class B	47	2.23	18	2.38	54	2.23	36	2.50	53	2.48	36	2.29	54	2.31	26	2.71	9	2.31	44	1.84	59	2.48
Drill-press operators, single- or multiple-spindle, class B	69	2.19	142	2.50	-	-	16	2.32	95	2.26	104	2.05	67	2.32	-	-	25	2.35	-	-	-	-
Engine-lathe operators, class B	73	2.33	38	2.31	27	2.22	55	2.38	106	2.36	156	2.42	81	2.41	113	2.98	38	2.11	52	2.18	27	2.48
Grinding-machine operators, class B	86	2.26	616	2.54	129	2.36	55	2.47	-	-	90	2.34	-	-	-	-	-	-	24	1.89	35	2.73
Milling-machine operators, class B	86	2.47	126	2.40	78	2.32	27	2.67	110	2.29	162	2.21	-	-	69	2.73	-	-	48	1.97	-	-
Screw-machine operators, automatic, class B	13	2.16	263	2.68	-	-	-	-	137	2.75	-	-	-	-	-	-	-	-	-	-	-	-
Turret-lathe operators, hand (including hand screw machine), class B	115	2.26	93	2.55	50	2.33	100	2.43	62	2.51	46	2.47	184	2.90	70	2.73	26	2.34	100	2.01	105	2.51
Machine-tool operators, production, class C ³	567	1.89	968	2.45	48	2.05	90	2.41	453	2.12	572	1.83	267	2.31	75	2.51	307	1.94	216	1.67	158	2.19
Drill-press operators, single- or multiple-spindle, class C	68	1.86	123	2.28	11	1.96	32	2.23	109	2.15	124	1.69	9	2.30	-	-	-	-	53	1.57	-	-
Grinding-machine operators, class C	-	-	534	2.56	-	-	18	2.55	38	2.16	-	-	-	-	-	-	-	-	25	1.79	-	-
Milling-machine operators, class C	42	2.03	192	2.21	-	-	-	-	-	-	54	1.91	-	-	-	-	-	-	-	-	20	2.29
Turret-lathe operators, hand (including hand screw machine), class C	-	-	48	2.44	-	-	-	-	58	2.17	-	-	22	2.04	-	-	-	-	-	-	31	2.09
Machine-tool operators, toolroom	113	2.54	283	2.93	29	2.43	163	2.84	831	2.79	239	2.67	334	2.90	225	2.93	197	2.74	70	2.49	-	-
Machinists, production	220	2.47	-	-	30	2.51	-	-	202	2.69	162	2.83	81	2.68	135	3.34	188	2.90	86	2.41	400	2.81
Tool and die makers (jobbing)	252	2.90	308	2.70	-	-	189	2.87	662	2.97	247	2.93	414	3.08	-	-	-	-	-	-	-	-
Tool and die makers (other than jobbing)	119	2.87	510	2.88	61	2.68	80	2.96	331	3.01	179	3.00	251	3.25	61	3.11	64	2.80	76	2.65	139	3.04
Welders, hand, class A	242	2.49	26	2.88	31	2.65	237	2.74	178	2.84	196	2.61	497	2.78	204	2.90	60	2.66	218	2.22	359	2.77
Welders, hand, class B	-	-	39	2.10	12	2.34	33	2.48	228	2.51	181	2.43	-	-	75	2.63	53	2.34	124	1.84	454	2.62

See footnotes at end of table.

Table A-1. Machinery Manufacturing—Men Workers—Continued

(Average straight-time hourly earnings¹ of men in selected production occupations, 21 selected areas, March–May 1961²)

Occupation	Middle West										Far West									
	Chicago		Cleveland		Detroit		Milwaukee		Minneapolis–St. Paul		St. Louis		Denver		Los Angeles–Long Beach		Portland		San Francisco–Oakland	
	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings	No. of work-ers	Avg. hourly earn-ings						
Assemblers, class A	2,387	2.79	954	2.89	765	3.19	559	3.02	445	2.56	225	2.60	82	2.74	1,165	2.71	195	2.90	115	3.04
Assemblers, class B	2,033	2.51	687	2.71	1,069	2.69	1,064	2.74	1,030	2.32	317	2.45	68	2.34	744	2.29	126	2.63	249	2.70
Assemblers, class C	902	2.10	146	2.43	237	2.51	724	2.54	291	2.08	376	2.12	45	2.10	302	2.05	-	-	301	2.44
Electricians, maintenance	340	3.10	137	3.00	212	3.34	237	3.08	32	2.82	57	3.04	-	-	76	2.91	-	-	23	3.23
Inspectors, class A	546	2.82	331	2.81	484	3.19	388	2.90	188	2.53	91	2.99	37	2.78	500	2.89	33	2.93	190	3.01
Inspectors, class B	468	2.56	202	2.73	403	2.74	522	2.77	127	2.17	50	2.44	8	2.48	102	2.43	-	-	-	-
Inspectors, class C	102	2.21	62	2.64	38	2.49	109	2.49	21	2.13	-	-	-	-	19	2.26	-	-	-	-
Janitors, porters, and cleaners	911	2.00	440	2.06	884	2.34	417	2.16	203	1.96	188	1.91	68	1.92	443	1.97	36	2.33	101	2.33
Laborers, material handling	1,570	2.02	449	2.23	612	2.53	742	2.32	347	2.10	341	2.09	-	-	216	2.16	42	2.46	91	2.48
Machine-tool operators, production, class A ³	6,339	2.89	3,737	2.85	4,930	3.19	2,142	2.96	1,134	2.65	580	3.17	294	2.98	4,325	2.81	460	2.91	1,186	3.13
Automatic-lathe operators, class A	122	2.92	59	2.86	37	2.92	141	2.83	39	2.83	-	-	-	-	106	2.78	-	-	-	-
Drill-press operators, radial, class A	524	2.80	235	2.83	100	3.08	197	2.85	62	2.67	34	2.75	15	2.87	202	2.78	37	2.86	62	3.09
Drill-press operators, single- or multiple-spindle, class A	225	2.63	155	2.88	58	2.80	51	2.94	74	2.62	-	-	-	-	177	2.46	-	-	7	3.04
Engine-lathe operators, class A	1,017	2.89	341	2.79	513	3.22	210	2.86	68	2.62	-	-	23	3.10	781	2.80	150	2.93	94	3.12
Grinding-machine operators, class A	710	2.92	719	2.88	1,861	3.24	261	3.03	65	2.66	42	3.16	23	3.24	1,195	2.89	22	2.91	-	-
Milling-machine operators, class A	837	2.96	483	2.85	562	3.21	224	2.98	65	2.70	-	-	25	3.30	394	2.74	60	2.92	101	3.14
Screw-machine operators, automatic, class A	119	2.99	172	2.99	282	3.08	71	3.14	95	2.52	33	3.09	-	-	79	2.88	-	-	127	3.01
Turret-lathe operators, hand (including hand screw machine), class A	935	2.96	697	2.87	620	2.96	508	2.96	203	2.66	41	2.75	66	3.06	482	2.75	74	2.88	110	3.06
Machine-tool operators, production, class B ³	2,965	2.57	1,864	2.59	4,012	2.73	1,770	2.70	643	2.43	442	2.65	123	2.41	1,502	2.40	78	2.61	332	2.72
Automatic-lathe operators, class B	109	2.74	45	2.44	137	2.60	44	2.56	-	-	-	-	-	-	-	-	-	-	-	-
Drill-press operators, radial, class B	325	2.65	91	2.65	247	2.64	330	2.62	119	2.46	29	2.57	32	2.53	72	2.36	34	2.62	28	2.70
Drill-press operators, single- or multiple-spindle, class B	293	2.49	721	2.67	468	2.66	276	2.70	106	2.42	22	2.41	12	2.31	254	2.35	17	2.59	90	2.73
Engine-lathe operators, class B	347	2.57	146	2.85	232	2.90	170	2.64	51	2.40	54	2.46	8	2.85	147	2.31	-	-	-	-
Grinding-machine operators, class B	430	2.46	371	2.57	1,409	2.73	204	2.74	24	2.46	40	2.51	8	2.32	165	2.35	-	-	59	2.69
Milling-machine operators, class B	488	2.62	271	2.49	511	2.74	263	2.73	37	2.55	41	2.37	8	2.37	140	2.37	-	-	10	2.66
Screw-machine operators, automatic, class B	44	2.67	49	2.66	153	2.82	18	2.87	-	-	47	2.75	-	-	-	-	-	-	-	-
Turret-lathe operators, hand (including hand screw machine), class B	360	2.55	230	2.57	411	2.76	216	2.67	70	2.49	51	2.47	11	2.27	150	2.48	12	2.62	44	2.75
Machine-tool operators, production, class C ³	1,463	2.18	687	2.27	913	2.39	445	2.44	286	2.05	226	2.10	22	2.07	220	2.13	-	-	194	2.42
Drill-press operators, single- or multiple-spindle, class C	557	2.11	143	2.30	152	2.32	138	2.49	62	2.06	91	2.36	-	-	18	2.23	-	-	-	-
Grinding-machine operators, class C	181	2.14	113	2.24	486	2.42	37	2.41	-	-	13	2.13	-	-	-	-	-	-	-	-
Milling-machine operators, class C	168	2.13	88	2.33	183	2.35	-	-	-	-	-	-	-	-	20	2.35	-	-	-	-
Turret-lathe operators, hand (including hand screw machine), class C	48	2.40	74	2.28	-	-	29	2.22	-	-	-	-	-	-	11	2.23	-	-	-	-
Machine-tool operators, toolroom	1,074	3.09	812	2.89	4,446	3.58	583	2.99	116	2.76	309	3.20	34	2.76	320	3.02	30	3.02	98	3.14
Machinists, production	494	3.00	-	-	-	-	-	-	72	2.65	646	3.04	-	-	635	2.90	107	2.92	459	3.07
Tool and die makers (jobbing)	1,355	3.50	753	3.03	3,600	3.68	273	3.33	136	3.17	-	-	-	-	585	3.14	-	-	-	-
Tool and die makers (other than jobbing)	571	3.26	211	3.15	548	3.39	415	3.22	160	2.95	243	3.37	30	2.88	353	3.13	9	3.38	239	3.53
Welders, hand, class A	1,253	2.78	621	2.72	385	2.98	640	2.89	402	2.59	135	2.67	153	2.61	1,408	2.81	202	2.90	498	3.05
Welders, hand, class B	475	2.45	271	2.46	130	2.73	557	2.62	194	2.50	176	2.30	-	-	172	2.45	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.
² Payroll periods covered in individual areas are indicated in table in appendix A.
³ Includes data for operators of other machine tools in addition to those shown separately.

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

Table A-2. Machinery Manufacturing—Women Workers

(Average straight-time hourly earnings¹ of women in selected production occupations, 11 selected areas, March–May 1961)

Occupation	New England		Middle Atlantic						South			
	Hartford		Newark and Jersey City		New York City		Philadelphia		Baltimore			
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings		
Assemblers, class B	123	\$2.12	93	\$2.24	17	\$1.98	-	-	-	-		
Assemblers, class C	682	2.15	442	2.07	185	1.90	236	\$1.88	-	-		
Inspectors, class B	-	-	10	2.04	-	-	-	-	-	-		
Inspectors, class C	-	-	-	-	36	1.98	-	-	-	-		
Machine-tool operators, production, class B	20	1.89	-	-	-	-	-	-	13	\$2.28		
Machine-tool operators, production, class C ²	312	1.88	-	-	56	1.86	105	2.31	105	2.12		
Drill-press operators, single- or multiple-spindle, class C	254	1.88	-	-	-	-	-	-	-	-		
	Middle West									Far West		
	Chicago		Cleveland		Detroit		Minneapolis–St. Paul		St. Louis		Los Angeles–Long Beach	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
Assemblers, class B	-	-	-	-	-	-	-	-	-	-	25	\$2.10
Assemblers, class C	745	\$1.77	22	\$2.48	749	\$2.42	236	\$1.80	320	\$2.29	361	1.74
Inspectors, class B	41	2.37	-	-	85	2.76	-	-	-	-	26	2.31
Inspectors, class C	80	1.74	68	2.03	537	2.41	18	1.94	191	2.18	25	2.10
Machine-tool operators, production, class B	-	-	-	-	-	-	28	2.12	-	-	33	2.30
Machine-tool operators, production, class C ²	232	1.87	502	1.85	243	2.56	-	-	81	2.27	-	-
Drill-press operators, single- or multiple-spindle, class C	140	1.90	-	-	83	2.54	-	-	81	2.27	-	-

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

² Includes data for operators of other machine tools in addition to those shown separately.

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

Table A-4. Machinery Manufacturing—Machine Tools Metal Cutting Types

(Average straight-time hourly earnings¹ of men in selected production occupations,
2 selected areas, March–May 1961)

Occupation	Cleveland		Worcester	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
Assemblers, class A -----	285	\$3.09	171	\$2.70
Assemblers, class B -----	135	2.77	-	-
Electricians, maintenance -----	30	3.04	-	-
Inspectors, class A -----	57	2.92	-	-
Inspectors, class B -----	20	2.83	-	-
Janitors, porters, and cleaners -----	55	2.34	48	1.96
Laborers, material handling -----	61	2.43	-	-
Machine-tool operators, production, class A ² -----	682	3.05	358	2.64
Drill-press operators, radial, class A ----	70	3.02	-	-
Engine-lathe operators, class A -----	60	3.05	43	2.60
Grinding-machine operators, class A -----	160	3.03	98	2.64
Milling-machine operators, class A -----	110	3.09	53	2.59
Turret-lathe operators, hand (including hand screw machine), class A -----	87	3.15	-	-
Machine-tool operators, production, class B ² -----	234	3.10	191	2.33
Grinding-machine operators, class B ----	32	3.11	68	2.36
Milling-machine operators, class B -----	23	2.92	33	2.35
Turret-lathe operators, hand (including hand screw machine), class B -----	39	2.86	19	2.25
Machine-tool operators, production, class C -----	26	2.47	-	-
Machine-tool operators, toolroom -----	100	3.16	-	-
Tool and die makers (other than jobbing) ----	44	3.29	24	2.82
Welders, hand, class A -----	12	3.19	10	2.82

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

² Includes data for operators of other machine tools in addition to those shown separately.

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

Table A-5. Machinery Manufacturing—Special Dies and Tools and Machine-Tool Accessories

(Average straight-time hourly earnings¹ of men in selected production occupations, 9 selected areas, March–May 1961)

Occupation	Chicago				Cleveland		Detroit					
	Special dies and tools ²		Machine-tool accessories ³		Special dies and tools ²		Special dies and tools ²		Machine-tool accessories ³			
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings		
Electricians, maintenance	-	-	14	\$3.00	7	\$2.88	16	\$3.70	21	\$3.46		
Inspectors, class A	11	\$2.77	48	2.74	8	3.06	-	-	64	3.07		
Janitors, porters, and cleaners	70	1.95	60	2.14	75	1.79	270	2.36	104	2.19		
Laborers, material handling	27	2.34	33	2.23	23	1.82	116	2.72	-	-		
Machine-tool operators, production, class A ⁴	53	2.92	473	2.96	-	-	-	-	1,119	3.06		
Engine-lathe operators, class A	-	-	35	2.79	-	-	-	-	137	3.02		
Grinding-machine operators, class A	-	-	239	2.98	-	-	-	-	606	3.12		
Milling-machine operators, class A	-	-	76	2.97	-	-	-	-	169	3.11		
Machine-tool operators, production, class B ⁴	139	2.67	320	2.47	258	2.39	352	2.79	783	2.70		
Grinding-machine operators, class B	-	-	134	2.43	6	2.61	-	-	449	2.70		
Milling-machine operators, class B	-	-	60	2.55	23	2.43	-	-	246	2.75		
Turret-lathe operators, hand (including hand screw machine), class B	-	-	21	2.42	17	2.36	-	-	36	2.39		
Machine-tool operators, production, class C	103	2.14	201	1.99	53	2.11	71	2.30	518	2.38		
Machine-tool operators, toolroom	534	3.24	39	2.88	499	2.85	3,959	3.61	70	3.37		
Tool and die makers (jobbing)	1,304	3.51	-	-	744	3.03	3,600	3.68	-	-		
Welders, hand, class A	-	-	-	-	19	2.72	20	3.57	6	3.06		
	Boston		Hartford		Los Angeles—Long Beach		Milwaukee		Newark and Jersey City		New York City	
	Special dies and tools ² and machine-tool accessories ³											
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
Electricians, maintenance	-	-	11	\$2.44	-	-	-	-	-	-	-	-
Inspectors, class A	11	\$2.40	58	2.45	123	\$3.12	7	\$3.04	22	\$2.81	-	-
Janitors, porters, and cleaners	11	1.66	23	1.72	37	1.80	15	1.92	42	1.61	12	\$1.83
Laborers, material handling	-	-	15	1.93	16	1.97	-	-	20	1.69	-	-
Machine-tool operators, production, class A ⁴	77	2.56	480	2.74	525	2.98	-	-	-	-	85	2.48
Engine-lathe operators, class A	-	-	49	2.74	110	2.91	-	-	-	-	-	-
Grinding-machine operators, class A	46	2.61	246	2.76	169	3.07	-	-	-	-	-	-
Milling-machine operators, class A	-	-	47	2.74	91	2.85	-	-	-	-	-	-
Machine-tool operators, production, class B ⁴	74	2.32	394	2.33	145	2.34	54	2.51	138	2.42	159	2.14
Grinding-machine operators, class B	-	-	235	2.40	73	2.30	-	-	23	2.50	-	-
Milling-machine operators, class B	-	-	55	2.24	33	2.41	-	-	-	-	-	-
Turret-lathe operators, hand (including hand screw machine), class B	-	-	21	2.39	6	2.27	-	-	-	-	-	-
Machine-tool operators, production, class C	104	1.99	83	1.92	18	1.93	18	2.22	152	2.07	34	1.65
Machine-tool operators, toolroom	-	-	40	2.61	100	3.07	197	2.98	547	2.63	157	2.63
Tool and die makers (jobbing)	202	2.93	294	2.69	576	3.14	273	3.33	662	2.97	238	2.94
Welders, hand, class A	-	-	-	-	43	2.95	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Includes die sets, jigs and fixtures, also.³ Includes measuring devices, also.⁴ Includes data for operators of other machine tools in addition to those shown separately.

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

B: Distribution of Workers by Hourly Earnings

Table B-1. Tool and Die Makers (Other Than Jobbing)

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Phila- delphia	Pittsburgh	Baltimore	Dallas	Houston,
\$1.90 and under \$2.00 -----	-	0.2	-	-	-	-	-	-	-	-	-
\$2.00 and under \$2.10 -----	-	.2	-	-	-	0.6	-	-	-	-	-
\$2.10 and under \$2.20 -----	-	-	-	-	-	-	-	1.6	2.6	-	-
\$2.20 and under \$2.30 -----	5.0	.2	1.6	1.3	-	4.5	-	-	-	7.9	-
\$2.30 and under \$2.40 -----	5.9	2.2	8.2	-	0.6	-	-	6.3	9.2	-	-
\$2.40 and under \$2.50 -----	.8	4.5	14.8	-	2.4	-	-	1.6	13.2	-	-
\$2.50 and under \$2.60 -----	2.5	5.5	11.5	-	2.4	1.1	4.0	-	10.9	3.9	-
\$2.60 and under \$2.70 -----	17.6	12.9	29.5	5.0	6.9	4.5	2.0	20.3	17.1	-	-
\$2.70 and under \$2.80 -----	6.7	17.8	4.9	18.8	13.3	2.8	1.6	24.6	7.8	11.8	-
\$2.80 and under \$2.90 -----	17.6	18.2	9.8	22.5	9.1	22.3	4.4	-	10.9	11.8	6.5
\$2.90 and under \$3.00 -----	-	4.7	8.2	7.5	17.8	6.1	3.6	13.1	4.7	14.5	34.5
\$3.00 and under \$3.10 -----	22.7	5.9	11.5	25.0	9.7	8.4	17.1	6.6	31.3	3.9	15.8
\$3.10 and under \$3.20 -----	.8	6.1	-	5.0	10.9	31.8	12.4	36.1	1.6	-	36.7
\$3.20 and under \$3.30 -----	19.3	11.2	-	-	4.5	10.1	-	-	3.1	-	4.3
\$3.30 and under \$3.40 -----	-	9.6	-	15.0	3.9	.6	26.3	-	-	3.9	1.4
\$3.40 and under \$3.50 -----	-	.8	-	-	17.5	2.2	1.2	16.4	-	-	-
\$3.50 and under \$3.60 -----	.8	-	-	-	.9	2.8	20.3	-	-	-	-
\$3.60 and under \$3.70 -----	-	-	-	-	-	2.2	-	-	-	-	.7
\$3.70 and under \$3.80 -----	-	-	-	-	-	-	-	-	-	-	-
\$3.80 and under \$3.90 -----	-	-	-	-	-	-	7.2	-	-	-	-
\$3.90 and under \$4.00 -----	-	-	-	-	-	-	-	-	-	-	-
\$4.00 and over -----	-	-	-	-	-	-	-	3.3	-	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	119	510	61	80	331	179	251	61	64	76	139
Average hourly earnings ¹ -----	\$2.87	\$2.88	\$2.68	\$2.96	\$3.01	\$3.00	\$3.25	\$3.11	\$2.80	\$2.65	\$3.04

See footnote at end of table.

Table B-1. Tool and Die Makers (Other Than Jobbing)—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	Middle West						Far West			
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis-St. Paul	St. Louis	Denver	Los Angeles-Long Beach	Portland	San Francisco-Oakland
\$1.90 and under \$2.00	-	-	-	-	-	-	-	-	-	-
\$2.00 and under \$2.10	-	-	-	-	-	-	-	-	-	-
\$2.10 and under \$2.20	-	-	-	-	-	-	-	-	-	-
\$2.20 and under \$2.30	-	-	-	-	-	-	-	-	-	-
\$2.30 and under \$2.40	-	-	-	-	-	-	-	-	-	-
\$2.40 and under \$2.50	0.4	-	-	-	-	-	-	-	-	-
\$2.50 and under \$2.60	.7	-	-	1.4	5.0	-	-	-	-	-
\$2.60 and under \$2.70	2.8	3.3	-	1.0	3.8	-	10.0	-	-	-
\$2.70 and under \$2.80	4.2	7.1	0.2	2.9	12.5	0.8	13.3	3.1	-	-
\$2.80 and under \$2.90	1.1	6.6	-	6.3	4.4	-	50.0	2.8	-	-
\$2.90 and under \$3.00	3.7	6.6	7.7	1.9	38.8	2.9	16.7	14.2	-	-
\$3.00 and under \$3.10	7.4	17.5	2.9	5.8	15.6	2.1	-	18.1	-	-
\$3.10 and under \$3.20	7.2	11.4	-	21.9	11.9	1.6	-	21.5	-	-
\$3.20 and under \$3.30	15.1	29.9	10.2	21.7	6.9	3.3	6.7	28.3	-	-
\$3.30 and under \$3.40	20.5	8.1	5.3	8.4	1.3	52.3	3.3	7.4	77.8	-
\$3.40 and under \$3.50	23.1	3.3	54.4	18.6	-	30.9	-	4.5	11.1	10.5
\$3.50 and under \$3.60	9.5	1.9	16.6	8.0	-	1.2	-	-	11.1	70.3
\$3.60 and under \$3.70	3.5	1.4	1.8	1.2	-	1.6	-	1.2	-	19.2
\$3.70 and under \$3.80	1.1	.5	.7	.7	-	.4	-	-	-	-
\$3.80 and under \$3.90	-	.5	.2	-	-	2.1	-	-	-	-
\$3.90 and under \$4.00	-	-	-	.2	-	-	-	-	-	-
\$4.00 and over	-	1.9	-	-	-	.8	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	571	211	548	415	160	243	30	353	9	239
Average hourly earnings ¹	\$3.26	\$3.15	\$3.39	\$3.22	\$2.95	\$3.37	\$2.88	\$3.13	\$3.38	\$3.53

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

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

Table B-2. Machine-Tool Operators, Production, Class A

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Philadelphia	Pittsburgh	Baltimore	Dallas	Houston
\$ 1.70 and under \$ 1.80 -----	0.1	-	-	-	-	-	-	-	-	0.7	-
\$ 1.80 and under \$ 1.90 -----	.9	0.5	0.5	-	-	1.0	-	-	-	.2	-
\$ 1.90 and under \$ 2.00 -----	.1	.1	3.7	-	-	.9	0.1	-	0.1	1.5	0.5
\$ 2.00 and under \$ 2.10 -----	2.3	.6	2.2	2.8	-	1.1	.5	-	-	4.1	.5
\$ 2.10 and under \$ 2.20 -----	6.3	1.0	4.6	1.2	1.0	2.2	6.2	-	3.3	12.9	1.2
\$ 2.20 and under \$ 2.30 -----	8.2	6.1	6.7	3.2	5.5	4.4	.8	0.5	13.7	12.2	1.3
\$ 2.30 and under \$ 2.40 -----	10.1	4.6	11.1	3.6	7.1	7.6	4.3	1.3	12.5	20.8	2.2
\$ 2.40 and under \$ 2.50 -----	14.3	11.4	11.9	14.6	14.4	6.0	5.3	1.5	11.2	21.3	2.8
\$ 2.50 and under \$ 2.60 -----	16.9	17.7	20.9	11.4	7.9	19.9	9.2	7.6	20.6	14.1	14.7
\$ 2.60 and under \$ 2.70 -----	7.5	12.0	16.9	23.7	10.7	14.4	20.7	15.5	9.4	9.8	26.0
\$ 2.70 and under \$ 2.80 -----	8.9	11.3	7.8	13.7	6.1	15.9	18.1	7.1	6.8	2.4	21.8
\$ 2.80 and under \$ 2.90 -----	2.2	7.6	5.5	12.3	7.4	7.5	5.3	16.9	7.2	-	16.3
\$ 2.90 and under \$ 3.00 -----	1.3	7.5	2.6	5.1	12.8	7.1	6.4	5.1	3.0	-	10.7
\$ 3.00 and under \$ 3.10 -----	6.5	5.6	2.6	5.5	23.2	8.5	5.4	10.5	1.3	-	.5
\$ 3.10 and under \$ 3.20 -----	1.5	6.2	1.2	1.0	2.6	1.3	4.8	.8	1.0	-	.7
\$ 3.20 and under \$ 3.30 -----	1.6	2.9	.8	.4	.3	.7	4.1	9.8	2.6	-	.2
\$ 3.30 and under \$ 3.40 -----	1.9	3.2	.3	.6	.6	.3	1.8	.8	1.7	-	.3
\$ 3.40 and under \$ 3.50 -----	2.2	.9	.1	.2	.2	.5	1.6	4.0	1.6	-	.1
\$ 3.50 and under \$ 3.60 -----	1.7	.3	.3	.4	.1	.2	1.7	5.2	.4	-	.1
\$ 3.60 and under \$ 3.70 -----	1.3	.2	.3	.1	.1	-	1.1	5.6	1.6	-	-
\$ 3.70 and under \$ 3.80 -----	1.7	.1	.1	-	-	.2	.7	5.3	.4	-	-
\$ 3.80 and under \$ 3.90 -----	.9	.1	-	-	-	-	.6	1.8	.6	-	-
\$ 3.90 and under \$ 4.00 -----	.9	-	-	-	-	-	.4	.4	.6	-	-
\$ 4.00 and over -----	.5	.3	-	.2	-	.3	.9	.3	.2	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	1,512	1,217	765	835	1,857	2,232	2,140	1,584	694	582	1,291
Average hourly earnings ¹ -----	\$ 2.64	\$ 2.71	\$ 2.52	\$ 2.64	\$ 2.73	\$ 2.65	\$ 2.77	\$ 3.02	\$ 2.61	\$ 2.35	\$ 2.69

See footnote at end of table.

Table B-2. Machine-Tool Operators, Production, Class A—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	Middle West						Far West			
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis-St. Paul	St. Louis	Denver	Los Angeles-Long Beach	Portland	San Francisco-Oakland
\$1.70 and under \$1.80	-	-	-	-	-	-	-	-	-	-
\$1.80 and under \$1.90	0.1	-	-	-	-	-	-	-	-	-
\$1.90 and under \$2.00	(²)	-	-	-	-	-	-	-	-	-
\$2.00 and under \$2.10	.1	-	-	-	0.4	-	-	-	-	-
\$2.10 and under \$2.20	.1	-	-	-	1.1	2.4	0.3	0.8	-	-
\$2.20 and under \$2.30	.4	(²)	-	0.6	1.8	1.9	1.4	.6	-	-
\$2.30 and under \$2.40	1.8	1.6	-	.2	5.6	.2	7.5	1.0	-	-
\$2.40 and under \$2.50	7.5	4.2	-	3.1	12.1	.5	1.0	2.2	-	-
\$2.50 and under \$2.60	9.2	9.6	0.9	8.7	15.7	2.4	7.8	10.5	0.2	-
\$2.60 and under \$2.70	7.7	21.8	6.3	13.1	36.9	2.6	28.2	10.3	2.2	-
\$2.70 and under \$2.80	11.1	13.5	5.3	11.7	8.8	3.6	6.5	19.9	3.9	-
\$2.80 and under \$2.90	10.5	17.0	8.7	9.6	7.1	15.2	2.0	25.0	5.0	-
\$2.90 and under \$3.00	8.4	10.3	8.4	7.6	4.0	14.0	2.7	11.8	72.4	5.1
\$3.00 and under \$3.10	13.6	6.0	10.7	11.0	1.9	6.6	2.7	6.9	16.3	53.5
\$3.10 and under \$3.20	20.1	3.6	15.5	12.5	2.4	7.8	4.4	6.0	-	13.6
\$3.20 and under \$3.30	3.9	2.4	10.5	9.1	.8	5.3	3.7	2.4	-	18.3
\$3.30 and under \$3.40	1.4	1.7	9.9	4.8	1.4	4.0	5.8	1.8	-	.3
\$3.40 and under \$3.50	1.6	2.2	9.0	2.9	.3	6.7	3.1	.2	-	8.3
\$3.50 and under \$3.60	1.1	2.0	3.4	1.6	-	6.4	8.8	.3	-	-
\$3.60 and under \$3.70	.5	1.6	4.4	.8	-	6.0	3.4	.1	-	-
\$3.70 and under \$3.80	.1	1.1	.7	1.0	-	5.7	2.7	.1	-	1.0
\$3.80 and under \$3.90	.3	1.2	.4	.4	-	2.4	3.4	.1	-	-
\$3.90 and under \$4.00	.1	.1	3.1	.3	-	2.6	2.0	(²)	-	-
\$4.00 and over	.3	.1	2.6	1.1	-	3.8	2.4	(²)	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	6,339	3,737	4,930	2,142	1,134	580	294	4,325	460	1,186
Average hourly earnings ¹	\$2.89	\$2.85	\$3.19	\$2.96	\$2.65	\$3.17	\$2.98	\$2.81	\$2.91	\$3.13

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Less than 0.05 percent.

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

Table B-3. Machine-Tool Operators, Production, Class B

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Philadelphia	Pittsburgh	Baltimore	Dallas	Houston
Under \$1.50 -----	-	-	-	-	-	1.8	-	-	1.8	0.8	-
\$1.50 and under \$1.60 -----	-	-	0.7	-	-	-	-	-	1.5	1.6	-
\$1.60 and under \$1.70 -----	0.5	0.5	.9	-	-	3.1	0.9	-	3.8	.5	-
\$1.70 and under \$1.80 -----	1.4	.5	3.3	2.7	0.1	6.7	.2	-	5.0	5.2	-
\$1.80 and under \$1.90 -----	6.1	1.0	1.5	3.0	.2	4.4	.4	-	2.4	21.8	0.5
\$1.90 and under \$2.00 -----	8.2	2.1	4.4	1.6	1.0	4.7	3.2	-	2.7	21.0	.5
\$2.00 and under \$2.10 -----	11.5	4.8	3.9	3.8	2.9	4.7	6.3	-	2.1	23.1	-
\$2.10 and under \$2.20 -----	9.4	7.2	19.2	2.1	8.7	13.0	3.7	1.2	8.0	8.0	3.0
\$2.20 and under \$2.30 -----	22.8	12.1	21.0	14.6	14.5	13.2	5.0	.7	8.6	5.2	5.0
\$2.30 and under \$2.40 -----	16.2	9.5	13.5	21.4	6.3	10.7	5.2	7.5	8.9	9.3	11.7
\$2.40 and under \$2.50 -----	4.6	10.3	10.9	16.8	5.0	10.3	7.2	8.2	8.3	3.6	14.9
\$2.50 and under \$2.60 -----	5.5	8.0	5.9	4.3	5.4	6.3	2.8	20.7	6.2	-	17.9
\$2.60 and under \$2.70 -----	3.9	7.8	3.9	17.1	9.0	8.9	11.8	30.7	13.6	9.0	26.6
\$2.70 and under \$2.80 -----	1.1	12.8	1.7	7.9	21.1	11.1	17.0	9.9	10.7	-	5.5
\$2.80 and under \$2.90 -----	3.8	9.6	3.3	1.6	12.9	.9	3.6	4.5	.6	-	10.2
\$2.90 and under \$3.00 -----	.8	7.4	1.7	1.4	12.6	.1	9.8	1.2	4.1	-	2.0
\$3.00 and under \$3.10 -----	.6	4.2	1.7	.4	.3	-	2.9	2.4	4.4	-	.7
\$3.10 and under \$3.20 -----	.6	1.6	1.1	.2	-	-	3.3	1.9	2.1	-	.7
\$3.20 and under \$3.30 -----	.6	.6	.7	.5	-	-	3.1	3.1	1.2	-	.5
\$3.30 and under \$3.40 -----	.8	.1	.2	.4	-	-	3.6	.5	.6	-	.2
\$3.40 and under \$3.50 -----	.6	-	.4	-	-	-	1.9	3.3	1.2	-	-
\$3.50 and under \$3.60 -----	.3	-	-	.2	-	-	2.2	.9	.3	-	-
\$3.60 and under \$3.70 -----	.3	-	-	-	-	-	1.7	.9	1.2	-	-
\$3.70 and under \$3.80 -----	.6	-	-	-	-	-	1.8	2.4	.3	-	-
\$3.80 and over -----	-	-	-	-	-	-	2.4	.2	.6	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	659	1,442	458	560	1,340	961	1,233	584	338	386	402
Average hourly earnings ¹ -----	\$2.29	\$2.52	\$2.33	\$2.41	\$2.58	\$2.26	\$2.72	\$2.71	\$2.44	\$2.00	\$2.56

See footnote at end of table.

Table B-3. Machine-Tool Operators, Production, Class B—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings	Middle West						Far West			
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis— St. Paul	St. Louis	Denver	Los Angeles— Long Beach	Portland	San Francisco— Oakland
Under \$1.50 -----	-	-	-	-	-	-	-	-	-	-
\$1.50 and under \$1.60 -----	-	-	-	-	-	-	-	-	-	-
\$1.60 and under \$1.70 -----	-	-	-	-	-	-	-	-	-	-
\$1.70 and under \$1.80 -----	0.1	0.4	-	-	-	-	0.8	-	-	-
\$1.80 and under \$1.90 -----	.2	.4	-	-	-	-	2.4	0.5	-	-
\$1.90 and under \$2.00 -----	.7	.1	-	-	-	3.2	1.6	1.6	-	-
\$2.00 and under \$2.10 -----	2.1	2.4	0.1	-	2.5	2.9	2.4	2.3	-	-
\$2.10 and under \$2.20 -----	3.0	4.4	.1	1.8	2.3	3.8	8.9	12.1	-	-
\$2.20 and under \$2.30 -----	8.9	12.6	1.5	6.6	12.9	2.7	22.0	11.3	-	-
\$2.30 and under \$2.40 -----	11.8	9.2	2.5	8.9	32.2	8.8	26.8	14.4	2.6	-
\$2.40 and under \$2.50 -----	13.0	10.5	5.2	11.5	24.9	11.1	7.3	24.4	12.8	-
\$2.50 and under \$2.60 -----	13.6	15.8	9.4	15.3	9.3	17.6	13.8	23.6	14.1	-
\$2.60 and under \$2.70 -----	16.2	20.2	24.4	12.6	5.0	7.7	2.4	4.5	62.8	9.9
\$2.70 and under \$2.80 -----	12.7	7.0	22.2	7.3	5.3	.9	2.4	3.2	7.7	79.5
\$2.80 and under \$2.90 -----	6.9	2.6	8.6	7.4	2.5	8.8	-	.3	-	6.0
\$2.90 and under \$3.00 -----	3.0	1.8	17.4	7.7	1.6	14.5	1.6	1.7	-	4.5
\$3.00 and under \$3.10 -----	2.3	1.4	7.0	8.5	.5	9.5	1.6	-	-	-
\$3.10 and under \$3.20 -----	4.0	1.4	1.3	4.9	.6	6.3	.8	-	-	-
\$3.20 and under \$3.30 -----	.6	1.8	.2	4.0	.2	.9	1.6	-	-	-
\$3.30 and under \$3.40 -----	.2	1.3	(²)	1.4	.3	.2	-	-	-	-
\$3.40 and under \$3.50 -----	(²)	1.6	-	.7	-	-	-	-	-	-
\$3.50 and under \$3.60 -----	(²)	2.2	.1	.3	-	-	1.6	-	-	-
\$3.60 and under \$3.70 -----	.1	1.2	-	.5	-	-	.8	-	-	-
\$3.70 and under \$3.80 -----	.1	1.3	-	.3	-	.5	.8	-	-	-
\$3.80 and over -----	.4	.4	-	.5	-	.5	-	-	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	2,965	1,864	4,012	1,770	643	442	123	1,502	78	332
Average hourly earnings ¹ -----	\$2.57	\$2.59	\$2.73	\$2.70	\$2.43	\$2.65	\$2.41	\$2.40	\$2.61	\$2.72

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Less than 0.05 percent.

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

Table B-4. Machine-Tool Operators, Production, Class C

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 20 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Philadelphia	Pittsburgh	Baltimore	Dallas	Houston
\$1.10 and under \$1.20 -----	-	-	-	-	-	0.5	-	-	-	0.5	-
\$1.20 and under \$1.30 -----	-	-	-	-	-	.7	-	-	1.0	1.9	-
\$1.30 and under \$1.40 -----	0.9	-	-	-	-	3.8	-	-	3.6	4.2	-
\$1.40 and under \$1.50 -----	.9	-	4.2	-	-	13.5	-	-	4.2	8.8	-
\$1.50 and under \$1.60 -----	3.2	1.8	4.2	-	0.7	14.7	3.4	-	2.9	8.3	0.6
\$1.60 and under \$1.70 -----	6.9	.5	-	-	5.1	8.2	.7	-	5.5	29.6	.6
\$1.70 and under \$1.80 -----	22.4	2.6	-	-	3.8	11.0	.4	-	13.0	19.4	7.0
\$1.80 and under \$1.90 -----	27.9	1.7	16.7	-	12.6	10.1	.7	4.0	16.9	14.4	-
\$1.90 and under \$2.00 -----	12.2	7.1	6.2	-	9.5	8.6	4.1	-	14.3	7.9	4.4
\$2.00 and under \$2.10 -----	10.2	2.8	16.7	12.2	16.1	7.5	.4	12.0	12.1	5.1	20.9
\$2.10 and under \$2.20 -----	4.8	4.9	27.1	7.8	16.8	9.6	-	2.7	10.1	-	21.5
\$2.20 and under \$2.30 -----	4.4	4.4	18.7	4.4	14.1	1.4	.7	8.0	4.9	-	17.1
\$2.30 and under \$2.40 -----	1.2	6.1	-	22.2	3.3	.7	78.3	5.3	1.6	-	15.2
\$2.40 and under \$2.50 -----	1.6	6.9	2.1	12.2	6.2	.3	2.6	-	1.6	-	1.9
\$2.50 and under \$2.60 -----	2.1	38.3	4.2	12.2	2.6	-	.7	30.7	1.3	-	3.8
\$2.60 and under \$2.70 -----	1.4	3.9	-	14.4	7.3	8.4	.4	13.3	4.2	-	1.3
\$2.70 and under \$2.80 -----	-	5.0	-	12.2	.7	.2	.7	-	1.0	-	.6
\$2.80 and under \$2.90 -----	-	4.8	-	2.2	1.1	-	.7	-	.3	-	1.3
\$2.90 and under \$3.00 -----	-	5.1	-	-	-	.2	1.1	24.0	.3	-	1.3
\$3.00 and under \$3.10 -----	-	1.5	-	-	-	.3	.7	-	.3	-	1.3
\$3.10 and under \$3.20 -----	-	1.1	-	-	-	.2	3.4	-	-	-	.6
\$3.20 and under \$3.30 -----	-	.4	-	-	.2	-	.4	-	.7	-	.6
\$3.30 and under \$3.40 -----	-	.9	-	-	-	-	.4	-	-	-	-
\$3.40 and under \$3.50 -----	-	.1	-	-	-	-	-	-	-	-	-
\$3.50 and over -----	-	.1	-	-	-	-	-	-	-	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	567	968	48	90	453	572	267	75	307	216	158
Average hourly earnings ¹ -----	\$1.89	\$2.45	\$2.05	\$2.41	\$2.12	\$1.83	\$2.31	\$2.51	\$1.94	\$1.67	\$2.19

See footnote at end of table.

Table B-4. Machine-Tool Operators, Production, Class C—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 20 selected areas, March–May 1961)

Average hourly earnings ¹	Middle West						Far West		
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis— St. Paul	St. Louis	Denver	Los Angeles— Long Beach	San Francisco— Oakland
\$1.10 and under \$1.20	-	-	-	-	-	-	-	-	-
\$1.20 and under \$1.30	-	-	-	-	-	-	-	-	-
\$1.30 and under \$1.40	-	-	-	-	3.8	17.3	-	-	-
\$1.40 and under \$1.50	-	-	-	-	-	-	-	-	-
\$1.50 and under \$1.60	0.5	-	-	-	7.7	-	-	0.5	-
\$1.60 and under \$1.70	4.0	-	-	-	3.8	-	-	.5	-
\$1.70 and under \$1.80	8.2	1.2	0.3	2.2	.3	19.9	4.5	-	-
\$1.80 and under \$1.90	8.2	1.9	-	1.1	2.8	1.8	-	23.2	-
\$1.90 and under \$2.00	17.3	7.3	.1	5.6	1.7	.9	36.4	7.7	-
\$2.00 and under \$2.10	6.2	3.8	2.0	5.2	11.2	3.5	18.2	4.1	-
\$2.10 and under \$2.20	10.7	15.3	26.2	8.5	37.8	17.3	9.1	4.5	-
\$2.20 and under \$2.30	9.1	20.4	14.0	24.3	29.7	7.5	31.8	45.0	-
\$2.30 and under \$2.40	8.1	25.3	10.7	10.8	.7	2.2	-	8.2	34.5
\$2.40 and under \$2.50	10.8	13.2	15.4	3.1	.3	3.1	-	-	58.8
\$2.50 and under \$2.60	6.3	5.7	8.9	8.3	-	8.8	-	5.5	6.7
\$2.60 and under \$2.70	2.3	1.2	7.7	3.1	-	5.8	-	.9	-
\$2.70 and under \$2.80	2.3	.3	.5	5.4	-	2.7	-	-	-
\$2.80 and under \$2.90	1.6	-	14.0	4.5	-	2.7	-	-	-
\$2.90 and under \$3.00	1.0	.4	-	5.8	-	2.2	-	-	-
\$3.00 and under \$3.10	1.4	.1	.1	3.6	-	1.3	-	-	-
\$3.10 and under \$3.20	.6	.3	-	2.9	-	.4	-	-	-
\$3.20 and under \$3.30	.6	4	-	3.6	-	.9	-	-	-
\$3.30 and under \$3.40	-	.1	-	.7	-	-	-	-	-
\$3.40 and under \$3.50	.7	-	-	1.1	-	.9	-	-	-
\$3.50 and over	.1	-	-	-	-	.8	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	1,463	687	913	445	286	226	22	220	194
Average hourly earnings ¹	\$2.18	\$2.27	\$2.39	\$2.44	\$2.05	\$2.10	\$2.07	\$2.13	\$2.42

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

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

Table B-5. Assemblers, Class B

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Philadelphia	Pittsburgh	Baltimore	Dallas	Houston
\$1.30 and under \$1.40	-	-	-	-	-	-	-	-	-	2.5	2.1
\$1.40 and under \$1.50	-	-	-	-	-	1.5	0.7	-	-	8.7	2.1
\$1.50 and under \$1.60	-	-	-	-	-	1.8	.7	-	2.7	11.8	.7
\$1.60 and under \$1.70	0.2	-	-	-	-	1.8	3.2	-	-	5.0	-
\$1.70 and under \$1.80	.2	0.2	0.5	-	0.8	1.6	1.2	-	1.4	30.4	-
\$1.80 and under \$1.90	1.2	1.9	4.3	4.3	1.6	3.1	2.0	-	4.1	18.6	3.5
\$1.90 and under \$2.00	6.4	4.7	15.1	-	1.0	7.9	-	-	2.7	14.3	6.3
\$2.00 and under \$2.10	5.9	7.0	9.1	-	5.9	17.6	21.5	2.1	6.8	.6	8.4
\$2.10 and under \$2.20	27.0	4.9	5.4	2.6	44.2	8.4	13.1	-	4.1	3.7	6.3
\$2.20 and under \$2.30	23.6	33.0	12.4	2.6	14.9	14.5	18.3	8.8	17.8	4.3	9.1
\$2.30 and under \$2.40	9.0	23.0	17.7	14.3	2.9	16.9	4.2	3.6	11.0	-	30.8
\$2.40 and under \$2.50	5.7	6.4	9.7	5.2	1.0	8.5	13.1	16.0	45.2	-	7.7
\$2.50 and under \$2.60	6.9	4.1	11.8	31.3	3.8	5.1	8.9	4.1	4.1	-	21.7
\$2.60 and under \$2.70	3.8	6.6	7.0	26.5	8.8	2.8	8.4	18.6	-	-	.7
\$2.70 and under \$2.80	2.6	4.1	3.2	10.4	8.1	6.2	.5	7.2	-	-	.7
\$2.80 and under \$2.90	.2	1.3	2.2	1.3	3.7	.9	-	11.3	-	-	-
\$2.90 and under \$3.00	1.2	1.1	1.1	-	2.8	1.5	2.0	.5	-	-	-
\$3.00 and under \$3.10	1.2	1.1	-	.9	-	-	.2	4.1	-	-	-
\$3.10 and under \$3.20	1.4	.6	.5	-	.5	-	-	-	-	-	-
\$3.20 and under \$3.30	-	-	-	.4	-	.1	.5	10.3	-	-	-
\$3.30 and under \$3.40	.5	-	-	-	-	-	-	4.6	-	-	-
\$3.40 and under \$3.50	.2	-	-	-	-	-	.2	.5	-	-	-
\$3.50 and under \$3.60	1.2	-	-	-	-	-	.2	-	-	-	-
\$3.60 and under \$3.70	.5	-	-	-	-	-	.5	5.2	-	-	-
\$3.70 and under \$3.80	.7	-	-	-	-	-	-	3.1	-	-	-
\$3.80 and over	.5	-	-	-	-	-	.5	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	423	469	186	230	1,225	682	405	194	73	161	143
Average hourly earnings ¹	\$2.34	\$2.32	\$2.29	\$2.50	\$2.30	\$2.22	\$2.27	\$2.79	\$2.28	\$1.74	\$2.26

See footnote at end of table.

Table B-5. Assemblers, Class B—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 21 selected areas, March–May 1961)

Average hourly earnings ¹	Middle West						Far West			
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis— St. Paul	St. Louis	Denver	Los Angeles— Long Beach	Portland	San Francisco— Oakland
\$1.30 and under \$1.40	-	-	-	-	-	-	-	-	-	-
\$1.40 and under \$1.50	-	-	-	-	-	-	-	-	-	-
\$1.50 and under \$1.60	-	-	-	-	-	-	-	-	-	-
\$1.60 and under \$1.70	0.9	-	-	-	-	-	-	-	-	-
\$1.70 and under \$1.80	.4	-	-	-	-	-	-	-	-	-
\$1.80 and under \$1.90	-	-	-	-	0.5	0.6	-	-	-	-
\$1.90 and under \$2.00	1.7	0.6	-	-	2.8	4.4	-	-	-	-
\$2.00 and under \$2.10	7.4	-	-	-	26.7	.9	8.8	13.7	-	-
\$2.10 and under \$2.20	.9	2.6	-	1.6	2.8	8.5	4.4	23.7	-	-
\$2.20 and under \$2.30	9.4	.4	-	2.4	19.6	12.0	22.1	19.5	-	-
\$2.30 and under \$2.40	7.5	18.5	0.1	8.2	17.0	45.1	29.4	18.0	-	-
\$2.40 and under \$2.50	11.3	5.7	6.0	17.2	10.8	6.6	30.9	6.6	27.8	-
\$2.50 and under \$2.60	24.1	35.5	5.0	18.3	4.3	1.6	-	11.6	6.3	2.0
\$2.60 and under \$2.70	12.2	13.0	61.6	5.8	3.4	.6	4.4	.4	54.0	18.5
\$2.70 and under \$2.80	8.8	1.5	1.0	9.1	6.0	.9	-	4.6	11.9	66.3
\$2.80 and under \$2.90	9.2	1.3	8.8	4.8	2.4	8.2	-	2.0	-	13.3
\$2.90 and under \$3.00	3.9	2.2	12.3	3.9	1.5	2.5	-	-	-	-
\$3.00 and under \$3.10	1.6	1.0	5.1	19.3	1.3	1.9	-	-	-	-
\$3.10 and under \$3.20	.2	1.3	-	2.6	.7	2.8	-	-	-	-
\$3.20 and under \$3.30	.2	1.5	-	1.2	.1	.9	-	-	-	-
\$3.30 and under \$3.40	-	5.5	-	.6	.1	.9	-	-	-	-
\$3.40 and under \$3.50	(²)	1.3	-	1.0	-	.6	-	-	-	-
\$3.50 and under \$3.60	-	1.3	-	1.0	.1	-	-	-	-	-
\$3.60 and under \$3.70	-	1.2	-	1.0	-	-	-	-	-	-
\$3.70 and under \$3.80	-	1.0	-	.8	-	.6	-	-	-	-
\$3.80 and over	-	4.7	-	.9	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	2,033	687	1,069	1,064	1,030	317	68	744	126	249
Average hourly earnings ¹	\$2.51	\$2.71	\$2.69	\$2.74	\$2.32	\$2.45	\$2.34	\$2.29	\$2.63	\$2.70

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.² Less than 0.05 percent.

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

Table B-6. Laborers, Material Handling

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 20 selected areas, March-May 1961)

Average hourly earnings ¹	New England			Middle Atlantic					South		
	Boston	Hartford	Worcester	Buffalo	Newark and Jersey City	New York City	Phila-delphia	Pittsburgh	Baltimore	Dallas	Houston
\$1.00 and under \$1.10 -----	-	-	-	-	-	-	-	-	-	11.7	-
\$1.10 and under \$1.20 -----	-	-	-	-	-	-	-	-	-	9.7	-
\$1.20 and under \$1.30 -----	-	-	-	-	-	1.4	-	-	-	11.7	0.4
\$1.30 and under \$1.40 -----	-	-	-	-	-	2.9	2.5	-	-	14.9	10.2
\$1.40 and under \$1.50 -----	-	-	-	-	-	.3	1.0	-	6.5	9.7	-
\$1.50 and under \$1.60 -----	-	0.6	-	-	1.2	3.2	-	-	12.9	16.2	6.0
\$1.60 and under \$1.70 -----	7.4	2.8	0.9	2.4	.4	4.1	1.5	-	14.5	9.7	15.7
\$1.70 and under \$1.80 -----	5.2	4.0	10.3	-	4.1	4.9	4.0	-	6.5	7.1	1.7
\$1.80 and under \$1.90 -----	12.6	15.3	32.5	-	34.2	9.0	2.0	2.1	6.5	2.6	1.3
\$1.90 and under \$2.00 -----	17.0	40.1	7.7	-	6.4	2.6	17.5	3.2	43.5	6.5	18.7
\$2.00 and under \$2.10 -----	25.2	7.1	23.1	8.1	16.0	18.0	3.0	3.7	9.7	-	14.9
\$2.10 and under \$2.20 -----	8.1	10.8	8.5	63.4	16.5	31.9	31.0	25.5	-	-	5.5
\$2.20 and under \$2.30 -----	16.3	1.4	6.8	14.6	6.2	9.6	36.0	19.7	-	-	23.4
\$2.30 and under \$2.40 -----	6.7	4.3	1.7	-	3.5	2.6	-	21.8	-	-	1.7
\$2.40 and under \$2.50 -----	1.5	13.6	.9	-	6.2	5.5	1.5	17.6	-	-	-
\$2.50 and under \$2.60 -----	-	-	3.4	.8	.2	4.1	-	-	-	-	.4
\$2.60 and under \$2.70 -----	-	-	-	10.6	5.1	-	-	4.3	-	-	-
\$2.70 and under \$2.80 -----	-	-	-	-	-	-	-	1.6	-	-	-
\$2.80 and under \$2.90 -----	-	-	-	-	-	-	-	-	-	-	-
\$2.90 and under \$3.00 -----	-	-	-	-	-	-	-	.5	-	-	-
\$3.00 and over -----	-	-	4.3	-	-	-	-	-	-	-	-
Total -----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers -----	135	352	117	123	486	345	200	188	62	154	235
Average hourly earnings¹ -----	\$2.02	\$2.03	\$2.01	\$2.21	\$2.04	\$2.04	\$2.10	\$2.26	\$1.80	\$1.42	\$1.90

See footnote at end of table.

Table B-6. Laborers. Material Handling—Continued

(Percent distribution of men workers by straight-time hourly earnings¹ in machinery manufacturing, 20 selected areas, March-May 1961)

Average hourly earnings	Middle West					Far West			
	Chicago	Cleveland	Detroit	Milwaukee	Minneapolis-St. Paul	St. Louis	Los Angeles-Long Beach	Portland	San Francisco-Oakland
\$1.00 and under \$1.10	-	-	-	-	-	-	-	-	-
\$1.10 and under \$1.20	-	-	-	-	-	-	-	-	-
\$1.20 and under \$1.30	-	-	-	-	-	-	-	-	-
\$1.30 and under \$1.40	-	-	-	-	-	-	-	-	-
\$1.40 and under \$1.50	-	-	-	-	-	-	-	-	-
\$1.50 and under \$1.60	6.0	-	-	-	-	-	-	-	-
\$1.60 and under \$1.70	2.7	2.0	-	-	-	-	-	-	-
\$1.70 and under \$1.80	21.3	-	-	-	2.9	5.0	-	-	-
\$1.80 and under \$1.90	9.9	2.0	-	-	9.5	4.4	0.9	-	-
\$1.90 and under \$2.00	7.6	4.0	-	0.5	9.2	10.0	4.2	-	-
\$2.00 and under \$2.10	5.4	14.3	-	5.4	16.7	39.6	21.8	-	-
\$2.10 and under \$2.20	7.1	17.4	-	29.6	41.2	3.5	37.0	-	-
\$2.20 and under \$2.30	15.3	35.2	-	10.6	5.5	29.3	17.1	2.4	14.3
\$2.30 and under \$2.40	20.8	12.2	9.0	17.0	13.0	4.7	9.3	4.8	-
\$2.40 and under \$2.50	3.4	1.8	44.6	31.3	2.0	3.5	6.9	54.8	30.8
\$2.50 and under \$2.60	.4	9.6	17.2	3.1	-	-	-	35.7	44.0
\$2.60 and under \$2.70	-	.4	19.1	-	-	-	-	-	11.0
\$2.70 and under \$2.80	-	-	1.1	.1	-	-	2.8	2.4	-
\$2.80 and under \$2.90	-	.2	7.7	1.6	-	-	-	-	-
\$2.90 and under \$3.00	-	-	1.3	.3	-	-	-	-	-
\$3.00 and over	-	.9	-	.4	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	1,570	449	612	742	347	341	216	42	91
Average hourly earnings ¹	\$2.02	\$2.23	\$2.53	\$2.32	\$2.10	\$2.09	\$2.16	\$2.46	\$2.48

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

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

Appendix A: Scope and Method of Survey

Scope of Survey

The survey included establishments primarily engaged in manufacturing machinery, except electrical (Major Group 35 as defined in the 1957 edition of the Standard Industrial Classification Manual, prepared by the Bureau of the Budget). This major group includes establishments engaged in manufacturing machinery and equipment, other than electrical equipment (Major Group 36) and transportation equipment (Major Group 37). Machines powered by built-in or detachable motors ordinarily are included in Major Group 35, with the exception of electrical household appliances (Major Group 36). Portable tools, both electric and pneumatic powered, are included in Major Group 35, but handtools are classified in Major Group 34. Central offices of the firms studied were excluded.

The study covered establishments with 20 or more workers at the time of reference of the data used in compiling the universe lists. Also included were establishments which employed 8 to 19 workers and which primarily manufactured special dies and tools, die sets, jigs and fixtures, or machine-tool accessories and measuring devices (Industries 3544 and 3545).

The number of establishments and workers actually studied by the Bureau, as well as the number estimated to be in the industry during the payroll period studied, are shown in the following table.

Establishments and workers within scope of survey and number studied, machinery industries,
21 areas, March-May 1961

(Minimum-size establishment: 20 workers¹)

Area ²	Payroll period	Number of establishments		Workers in establishments	
		Within scope of study	Studied	Within scope of study	Studied
New England:					
Boston -----	March	158	44	17,530	11,705
Hartford -----	May	116	40	28,123	24,284
Worcester -----	April	46	22	8,945	7,884
Middle Atlantic:					
Buffalo -----	April	73	28	11,204	9,378
Newark and Jersey City -----	April	274	55	29,513	17,718
New York City -----	April	299	65	21,517	11,717
Philadelphia -----	May	154	43	28,128	22,791
Pittsburgh -----	April	95	30	14,039	10,910
South:					
Baltimore -----	May	47	21	8,415	6,938
Dallas -----	March	63	24	7,240	4,918
Houston -----	March	82	26	14,002	11,010
Middle West:					
Chicago -----	May	628	102	77,414	38,656
Cleveland -----	May	298	68	34,707	20,723
Detroit -----	May	702	89	58,777	34,713
Milwaukee -----	April	165	44	49,066	39,642
Minneapolis-St. Paul -----	May	128	32	20,552	15,323
St. Louis -----	April	122	32	15,327	11,160
Far West:					
Denver -----	April	28	16	3,337	2,789
Los Angeles-Long Beach -----	April	450	74	37,428	15,267
Portland -----	May	35	15	3,119	2,390
San Francisco-Oakland -----	March	121	27	12,787	8,061
Total, 21 areas -----		4,084	897	501,170	327,977

¹ Establishments which manufactured special dies and tools, die sets, jigs and fixtures, or machine-tool accessories and measuring devices, and which employed 8 to 19 workers were also included.

² Standard Metropolitan Statistical areas except Chicago (Cook County); Hartford (Hartford metropolitan area and Berlin, Bristol, New Britain, Plainville, Plymouth, and Southington, Conn.); Newark and Jersey City (Essex, Hudson, Morris, and Union Counties); New York City (the 5 boroughs); Philadelphia (Philadelphia and Delaware Counties, Pa., and Camden County, N.J.); and Worcester (Worcester metropolitan area, except Northbridge).

Method of Study

Data were obtained from establishments surveyed the previous year, principally by mail but in some instances by personal visits of Bureau field economists under the direction of the Bureau's Assistant Regional Directors for Wages and Industrial Relations. The survey was conducted on a sample basis. To obtain appropriate accuracy at minimum cost, a greater proportion of large than of small establishments was studied. In combining the data, however, all establishments were given their appropriate weight. All estimates are presented, therefore, as relating to all establishments in the industry group in the areas, excluding only those below the minimum size at the time of reference of the universe data.

Establishment Definition

An establishment, for purposes of this study, is defined as a single physical location where industrial operations are performed. An establishment is not necessarily identical with the company, which may consist of one or more establishments.

Employment

The estimates of the number of workers within the scope of the study are intended as a general guide to the size and composition of the labor force included in the survey. The advance planning necessary to make a wage survey requires the use of lists of establishments assembled considerably in advance of the payroll period studied.

Production Workers

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

Occupations Selected for Study

Occupational classification was based on a uniform set of job descriptions designed to take account of interestablishment and interarea variations in duties within the same job. (See appendix B for listing of these job descriptions.) The occupations were chosen for their numerical importance, their usefulness in collective bargaining, or their representativeness of the entire job scale in the industry.

Occupational Earnings

Earnings data for the selected jobs (tables A-1 through A-5) are shown for full-time workers, i. e., those hired to work a full-time schedule for the given occupational classification. Working supervisors, apprentices, learners, beginners, trainees, handicapped, temporary, and probationary workers were not included.

The wages represent average straight-time hourly earnings, excluding premium pay for overtime and for work on weekends, holidays, and late shifts. Incentive payments, such as those resulting from piecework or production bonus systems and cost-of-living bonuses were included as part of the workers' regular pay; but nonproduction bonus payments, such as Christmas or yearend bonuses were excluded. The estimated average hourly earnings for each occupation were obtained by weighting each rate (or hourly earning) by the number of workers receiving the rate.

Occupational employment estimates refer to the total in all establishments within the scope of the study and not to the number actually surveyed. Because of the variation in occupational structure among establishments, estimates of occupational employment are subject to considerable fluctuation attributable to sampling. Hence, they serve only to indicate the relative numerical importance of the jobs studied. The fluctuations in employment do not materially affect the accuracy of the earnings data.

Wage Trends

The machinery index series has been developed from data obtained in the Bureau's program of occupational wage surveys and is based on straight-time hourly earnings of men production workers in selected machinery occupations.

The indexes for 1945, 1946, and 1947 are based on "miscellaneous machinery" which consists of all types of machinery manufacture except electrical machinery, machine tools, and machine-tool accessories. For 1949 and successive years, the information includes machine tools and machine-tool accessories, as well as miscellaneous machinery. In order to minimize the effect of the shift in industrial coverage, the two sets of indexes were linked by applying the percent of change in the miscellaneous machinery group from 1947 to 1948 to the previous 1947 index. The 1948 index computed in this fashion is the published index. To compute the 1949 index, the percentage change in all machinery from 1948 to 1949 was applied to this 1948 index.

Since the 1959 survey was based on a revised definition of the machinery industries group as provided in the 1957 edition of the SIC Manual, a linking procedure was necessary to minimize the effect on the index of the change in industry definition. This was done by computing the percent of change from 1958 to 1959 for those establishments included in both surveys. This percentage change was then applied to the 1958 index (computed on the previous industry definition) to obtain the index for 1959.

Indexes were constructed for each area to minimize the effect of changes in occupational composition of the work force and in the relative importance in the industry of the areas studied. For each year in a pair of successive years (1945-46, 1946-47, etc.), the average straight-time hourly earnings for each selected occupation were weighted by the number employed in that occupation during the latter of the 2 years. The result each year was an area aggregate for all selected jobs. The percentage relationship between the aggregates for the pair of years was computed and then linked to the index for the earlier of the 2 years. The resulting indexes based on 1945 were then converted to a 1947-49 base by dividing all the indexes by the average of the indexes for 1947-49.

In 1952, the occupational coverage of the machinery industries survey was increased to include all machine-tool operators, classes A, B, and C (except operators of certain special machines). Coverage of machine-tool operators before 1952 was limited to single- and multiple-spindle drill-press operators, engine-lathe operators, grinding-machine operators, and milling-machine operators. The indexes since 1952 have been computed on the basis of the broader occupational coverage indicated above. In addition, a system of constant weights has been utilized (rather than weighting by the actual employment in an occupation during the latter of the 2 years). The constant weights are based on an average of 1953 and 1954 employment. Their use thus eliminates the effect of changes in occupational composition of the work force.

Definitions for production and toolroom machine-tool operators and tool and die makers were revised in 1960. In computing the percent of change from 1959 to 1960 in areas affected by the changes, the average earnings used for these jobs, for the purposes of this index, in both years were based on the earnings of workers classified in accordance with the revised definitions.

In obtaining the composite index for all areas combined, the techniques followed were similar to those employed in determining area indexes. The technique used in computing the composite index for the earlier years, 1945-52, was as follows: For each year in a pair (1945-46, 1946-47, etc.), an overall aggregate for all areas combined was obtained. This aggregate was computed by weighting the overall average (aggregate earnings in selected jobs divided by the total employment in selected jobs) for each area by total production worker employment in the industry and area in the second of the 2 years. From this point, the procedure was identical with that used in constructing individual area indexes for these years. For indexes since 1952, a system of constant area weights has been used, thereby eliminating the effect of changes in the relative importance in the industry of the area studied.

Appendix B: Occupational Descriptions

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

ASSEMBLER

(Bench assembler; floor assembler; jig assembler; line assembler; subassembler)

Assembles and/or fits together parts to form complete units or subassemblies at a bench, conveyor line, or on the floor, depending upon the size of the units and the organization of the production process. Work may include processing operations requiring the use of handtools in scraping, chipping, and filing of parts to obtain a desired fit as well as power tools and special equipment when punching, riveting, soldering, or welding of parts is necessary. Workers who perform any of these processing operations exclusively as part of specialized assembling operations are excluded.

Class A—Assembles parts into complete units or subassemblies that require fitting of parts and decisions regarding proper performance of any component part or the assembled unit. Work involves any combination of the following: Assembling from drawings, blueprints or other written specifications; assembling units composed of a variety of parts and/or subassemblies; assembling large units requiring careful fitting and adjusting of parts to obtain specified clearances; and using a variety of hand and powered tools and precision measuring instruments.

Class B—Assembles parts into units or subassemblies in accordance with standard and prescribed procedures. Work involves any combination of the following: Assembling a limited range of standard and familiar products composed of a number of small- or medium-size parts requiring some fitting or adjusting; assembling large units that require little or no fitting of component parts; working under conditions where accurate performance and completion of work within set time limits are essential for subsequent assembling operations; and using a limited variety of hand or powered tools.

Class C—Performs short-cycle, repetitive assembling operations. Work does not involve any fitting or making decisions regarding proper performance of the component parts or assembling procedures.

AUTOMATIC-LATHE OPERATOR

(Automatic-between-centers-lathe operator; automatic-chucking-machine operator; automatic-turret-lathe operator)

Operates one or more lathes equipped with automatic feed mechanisms for actuating the cutting tools over the complete work cycle. Automatic lathes may differ as to type of construction (horizontal or vertical); number of spindles (single or multiple); method of feed (hand-feed, automatic-chucking, or hopper-feed); method of holding the work (in chucks or between centers); and method of presenting the tools to the stock in sequence (turrets, slides, revolving work stations). (For description of class of work, see machine-tool operator, production.)

DRILL-PRESS OPERATOR, RADIAL

Operates one or more types of radial-drilling machines designed primarily for the purpose of drilling, reaming, countersinking, counterboring, spotfacing, or tapping holes in large or heavy metal parts. Several types of radial drills are in use, the most common type being designed so that the tool head and saddle are movable along a projecting arm which can be rotated about a vertical column and adjusted vertically on that column. (For description of class of work, see machine-tool operator, production.)

DRILL-PRESS OPERATOR, SINGLE- OR MULTIPLE-SPINDLE

Operates one or more types of single- or multiple-spindle drill-presses, to perform such operations as drilling, reaming, countersinking, counterboring, spot-facing, and tapping. Drill-press operators, radial, and operators of portable drilling equipment are excluded. (For description of class of work, see machine-tool operator, production.)

ELECTRICIAN, MAINTENANCE

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

ENGINE-LATHE OPERATOR

Operates an engine lathe for shaping external and internal cylindrical surfaces of metal objects. The engine lathe, basically characterized by a headstock, tailstock, and power-fed tool carriage, is a general-purpose machine tool used primarily for turning. It is also commonly used in performing such operations as facing, boring, drilling and threading, and equipped with appropriate attachments, may be used for a very wide variety of special machining operations. The stock may be held in position by the lathe "centers" or by various types of chucks and fixtures. Bench-lathe operators, automatic-lathe operators, screw-machine operators, automatic, and turret-lathe operators, hand (including hand screw machine) are excluded. (For description of class of work, see machine-tool operators, production.)

GRINDING-MACHINE OPERATOR

(Centerless-grinder operator; cylindrical-grinder operator; external-grinder operator; internal-grinder operator; surface-grinder operator; Universal-grinder operator)

Operates one of several types of precision grinding machines to grind internal and external surfaces of metal parts to a smooth and even finish and to required dimensions. Precision grinding is used primarily as a finishing operation on previously machined parts, and consists of applying abrasive wheels rotating at high speeds to the surfaces to be ground. In addition to the types of grinding machines indicated above, this classification includes operators of other production grinding machines such as: Single-purpose grinders (drill grinders, broach grinders, saw grinders, gear-cutter grinders, thread grinders, etc.) and automatic and semiautomatic general purpose grinding machines. Operators of portable grinders are excluded. (For description of class of work, see machine-tool operator, production.)

INSPECTOR

Inspects parts, products and/or processes. Performs such operations as examining parts or products for flaws and defects, checking their dimensions and appearance to determine whether they meet the required standards and specifications.

INSPECTOR—Continued

Class A—Responsible for decisions regarding the quality of the product and/or operations. Work involves any combination of the following: Thorough knowledge of the processing operations in the branch of work to which he is assigned, including the use of a variety of precision measuring instruments; interpreting drawings and specifications in inspection work on units composed of a large number of component parts; examining a variety of products or processing operations; determining causes of flaws in products and/or processes and suggesting necessary changes to correct work methods; and devising inspection procedures for new products.

Class B—Work involves any combination of the following: Knowledge of processing operations in the branch of work to which he is assigned, limited to familiar products and processes or where performance is dependent on past experience; performing inspection operations on products and/or processes having rigid specifications, but where the inspection procedures involve a sequence of inspection operations, including decisions regarding proper fit or performance of some parts; and using precision measuring instruments.

Class C—Work involves any combination of the following: Short-cycle, repetitive inspection operations; using a standardized, special-purpose measuring instrument repetitively; and visual examination of parts or products, rejecting units having obvious deformities or flaws.

JANITOR, PORTER, OR CLEANER

(Sweeper; charwoman; janitress)

Cleans and keeps in an orderly condition factory working areas and washrooms, or premises of an office, apartment house, or commercial or other establishment. Duties involve a combination of the following: Sweeping, mopping, or scrubbing, polishing floors; removing chips, trash, and other refuse; dusting equipment, furniture, or fixtures; polishing metal fixtures or trimmings; and providing supplies and minor maintenance services; cleaning lavatories, showers, and restrooms. Workers who specialize in window washing are excluded.

LABORER, MATERIAL HANDLING

(Loader and unloader; handler and stacker; shelver; trucker; stockman or stock helper; warehouseman or warehouse helper)

A worker employed in a warehouse, manufacturing plant, store, or other establishment whose duties involve one or more of the following: Loading and unloading various materials and merchandise on or from freight cars, trucks or other transporting devices; unpacking, shelving, or placing materials or merchandise in proper storage location; and transporting materials or merchandise by hand truck, car, or wheelbarrow. Longshoremen, who load and unload ships are excluded.

MACHINE-TOOL OPERATOR, PRODUCTION

Operates one or more nonportable, power-driven machine tools in order to shape metal by progressively removing portion of the stock in the form of chips or shavings, or by abrasion. For wage study purposes, this classification is limited to operators of the following types of machine tools:

Automatic lathes	Machine tools, miscellaneous ⁵
Boring machines	Milling machines
Drill presses, radial	Planers
Drill presses, single- or multiple-spindle	Screw machines, automatic
Engine lathes	Screw machines, hand
Gear-cutting machines	Shapers
Gear-finishing machines	Turret lathes, automatic
Grinding machines	Turret lathes, hand

⁵ Operators required alternately to operate more than one type of machine tools as listed above are to be classified as machine-tool operator, miscellaneous.

MACHINE-TOOL OPERATOR, PRODUCTION

Class A—Sets up machines, by determining proper feeds, speeds, tooling and operation sequence or by selecting those prescribed in drawings, blueprints or layouts; makes necessary adjustments during operation where changes in work and setup are relatively frequent and where care is essential to achieve requisite dimensions of very close tolerances.

Class B—Sets up machines on standard or roughing operations where feeds, speeds, tooling and operation sequence are prescribed or maintains operation setup made by others; and makes all necessary adjustments during operation where care is essential to achieve very close tolerances or where changes in product are relatively frequent.

Class C—Operates machines on routine and repetitive operations; makes only minor adjustments during operations; and when trouble occurs stops machine and calls foreman, leadman, or setup man to correct the operation.

MACHINE-TOOL OPERATOR, TOOLROOM

Specializes in the operation of one or more types of machine tools such as jigs borers, cylindrical or surface grinders, engine lathes, or milling machines in the construction of machine-shop tools, gages, jigs, fixtures, or dies. Work involves most of the following: Planning and performing difficult machining operations; processing items requiring complicated setups or a high degree of accuracy; using a variety of precision measuring instruments; selecting feeds, speeds, tooling and operation sequence; and making necessary adjustments during operation to achieve requisite tolerances or dimensions. May be required to recognize when tools need dressing, to dress tools, and to select proper coolants and cutting and lubricating oils.

MACHINIST, PRODUCTION

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

MILLING-MACHINE OPERATOR

(Milling-machine operator, automatic; milling-machine operator, hand)

Performs a variety of work such as grooving, planing, and shaping metal objects on a milling machine, which removes material from metal surfaces by the cutting action of multitoothed rotating cutters of various sizes and shapes. Milling-machine types vary from the manually controlled machines employed in unit production to fully automatic (conveyor-fed) machines found in plants engaged in mass production. For wage study purposes, operators of single-purpose millers such as thread millers, duplicators, diesinkers, pantograph millers and engraving millers are excluded. (For description of class of work, see machine-tool operator, production.)

SCREW-MACHINE OPERATOR, AUTOMATIC

Operates one or more multiple- or single-spindle automatic screw machines. Automatic screw machines are production turning machines with automatic-feed cycle designed to produce parts from bar or tube stock fed automatically through spindles or the head stock. These machines, equipped with from one to eight spindles or a turret, automatically perform and repeat a cycle of operations on each length of stock fed into the machine. (For description of class of work, see machine-tool operator, production.)

TOOL AND DIE MAKER

(Die maker; jig maker; tool maker; fixture maker; gage maker)

Constructs and repairs machine-shop tools, gages, jigs, fixtures or dies for forgings, punching, and other metal-forming work. Work involves most of the following: Planning and laying out of work from models, blueprints, drawings, or other oral and written specifications; using a variety of tool and die maker's handtools and precision measuring instruments; understanding of the working properties of common metals and alloys; setting up and operating of machine tools and related equipment; making necessary shop computations relating to dimensions of work, speeds, feeds, and tooling of machines; heattreating of metal parts during fabrication as well as of finished tools and dies to achieve required qualities; working to close tolerances; fitting and assembling of parts to prescribed tolerances and allowances; and selecting appropriate materials, tools, and processes. In general, the tool and die maker's work requires a rounded training in machine-shop and toolroom practice usually acquired through a formal apprenticeship or equivalent training and experience.

For wage study purposes, tool and die makers are classified as follows:

Tool and die maker (jobbing)

Worker making dies and tools, die sets, jigs, and fixtures, etc., as the end product of an establishment.

Tool and die maker (other than jobbing)

Worker making and/or maintaining dies and tools, die sets, jigs and fixtures, etc., for use within an establishment.

TURRET-LATHE OPERATOR, HAND (INCLUDING HAND SCREW MACHINE)

Operates a lathe equipped with a turret used to present a number of cutting tools, required for a cycle of machining operations, to the work in sequence. Operations commonly performed on a turret lathe include turning, facing, boring, drilling, and threading. The operator rotates or indexes the turret to bring the tools toward the work for each operation. Individual workpieces, such as forgings and castings, are held in a chuck or the lathe may be equipped with a bar stock feeding device to present the correct length of stock to the tools at the beginning of each cycle of operations. (For description of class of work, see machine-tool operator, production.)

WELDER, HAND

Fuses (welds) metal objects by means of an oxyacetylene torch or arc welding apparatus in the fabrication of metal shapes and in repairing broken or cracked metal objects. In addition to performing hand welding or brazing operation, the welder may also lay out guide lines or marks on metal parts and may cut metal with a cutting torch.

Class A—Performs welding operations requiring most of the following: Planning and laying out of work from drawings, blueprints, or other written specifications; knowledge of welding properties of a variety of metals and alloys, setting up work and determining operation sequence; welding high pressure vessels or other objects involving critical safety and load requirements; working from a variety of positions.

Class B—Performs welding operations on repetitive work, where no critical safety and load requirements are involved; where the work calls mainly for one-position welding; and where the layout and planning of the work are performed by others.

INDUSTRY WAGE STUDIES

The following reports cover part of the Bureau's program of industry wage surveys. These reports cover the period 1950 to date and may be obtained free upon request as long as a supply is available. However, those for which a price is shown are available only from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., or any of its regional sales offices.

I. Occupational Wage Studies

Manufacturing

Apparel:

- Men's Dress Shirts and Nightwear, 1950 – Series 2, No. 80
- Men's and Boys' Dress Shirts and Nightwear, 1954 – BLS Report No. 74
- * Men's and Boys' Shirts (Except Work Shirts) and Nightwear, 1956 – BLS Report No. 116
- Men's and Boys' Suits and Coats, 1958 – BLS Report No. 140
- Women's and Misses' Coats and Suits, 1957 – BLS Report No. 122
- Women's and Misses' Dresses, 1960 – BLS Report No. 193
- Work Clothing, 1953 – BLS Report No. 51
- * Work Shirts, 1955 and 1956 – BLS Report No. 115
- * Work Shirts, 1957 – BLS Report No. 124

Chemicals and Petroleum:

- Fertilizer, 1949-50 – Series 2, No. 77
- * Fertilizer Manufacturing, 1955 and 1956 – BLS Report No. 111
- * Fertilizer Manufacturing, 1957 – BLS Report No. 132
- Industrial Chemicals, 1951 – Series 2, No. 87
- Industrial Chemicals, 1955 – BLS Report No. 103
- Petroleum Production and Refining, 1951 – Series 2, No. 83
- Petroleum Refining, 1959 – BLS Report No. 158
- Synthetic Fibers, 1958 – BLS Report No. 143

Food:

- Candy and Other Confectionery Products, 1960 – BLS Report No. 195
- * Canning and Freezing, 1955 and 1956 – BLS Report No. 117
- * Canning and Freezing, 1957 – BLS Report No. 136
- Distilled Liquors, 1952 – Series 2, No. 88
- Fluid Milk Industry, 1960 – BLS Report No. 174
- * Raw Sugar, 1955 and 1956 – BLS Report No. 117
- * Raw Sugar, 1957 – BLS Report No. 136

Leather:

- Footwear, 1953 – BLS Report No. 46
- * Footwear, 1955 and 1956 – BLS Report No. 115
- Footwear, 1957 – BLS Report No. 133
- Leather Tanning and Finishing, 1954 – BLS Report No. 80
- Leather Tanning and Finishing, 1959 – BLS Report No. 150

Lumber and Furniture:

- Household Furniture, 1954 – BLS Report No. 76
- Lumber in the South, 1949 and 1950 – Series 2, No. 76
- Southern Lumber Industry, 1953 – BLS Report No. 45
- * Southern Sawmills, 1955 and 1956 – BLS Report No. 113
- * Southern Sawmills, 1957 – BLS Report No. 130
- West Coast Sawmilling, 1952 – BLS Report No. 7
- West Coast Sawmilling, 1959 – BLS Report No. 156
- Wood Household Furniture, Except Upholstered, 1959 – BLS Report No. 152
- * Wooden Containers, 1955 and 1956 – BLS Report No. 115
- * Wooden Containers, 1957 – BLS Report No. 126

Paper and Allied Products:

- Pulp, Paper, and Paperboard, 1952 – Series 2, No. 91

Primary Metals, Fabricated Metal Products and Machinery:

- Basic Iron and Steel, 1951 – Series 2, No. 81
- Fabricated Structural Steel, 1957 – BLS Report No. 123
- Gray Iron Foundries, 1959 – BLS Report No. 151
- Nonferrous Foundries, 1951 – Series 2, No. 82
- Nonferrous Foundries, 1960 – BLS Report No. 180
- Machinery Industries, 1953-54 – BLS Bull. No. 1160(40 cents)
- Machinery Industries, 1954-55 – BLS Report No. 93
- Machinery Manufacturing, 1955-56 – BLS Report No. 107
- Machinery Manufacturing, 1957-58 – BLS Report No. 139
- Machinery Manufacturing, 1958-59 – BLS Report No. 147
- Machinery Manufacturing, 1959-60 – BLS Report No. 170
- Radio, Television, and Related Products, 1951 – Series 2, No. 84
- Steel Foundries, 1951 – Series 2, No. 85

Rubber and Plastics Products:

- Miscellaneous Plastics Products, 1960 – BLS Report No. 168

Stone, Clay, and Glass:

- Pressed or Blown Glass and Glassware, 1960 – BLS Report No. 177
- Structural Clay Products, 1954 – BLS Report No. 77
- Structural Clay Products, 1960 – BLS Report No. 172

Textiles:

- Cotton Textiles, 1954 – BLS Report No. 82
- Cotton Textiles, 1960 – BLS Report No. 184
- Cotton and Synthetic Textiles, 1952 – Series 2, No. 89
- Hosiery, 1952 – BLS Report No. 34
- Miscellaneous Textiles, 1953 – BLS Report No. 56
- * Processed Waste, 1955 and 1956 – BLS Report No. 115
- * Processed Waste, 1957 – BLS Report No. 124
- * Seamless Hosiery, 1955 and 1956 – BLS Report No. 112
- * Seamless Hosiery, 1957 – BLS Report No. 129
- Synthetic Textiles, 1954 – BLS Report No. 87
- Synthetic Textiles, 1960 – BLS Report No. 192
- Textile Dyeing and Finishing, 1956 – BLS Report No. 110
- Woolen and Worsted Textiles, 1952 – Series 2, No. 90
- Wool Textiles, 1957 – BLS Report No. 134

Tobacco:

- Cigar Manufacturing, 1955 – BLS Report No. 97
- * Cigar Manufacturing, 1955 and 1956 – BLS Report No. 117
- Cigarette Manufacturing, 1960 – BLS Report No. 167
- * Tobacco Stemming and Redrying, 1955 and 1956 – BLS Report No. 117
- * Tobacco Stemming and Redrying, 1957 – BLS Report No. 136

Transportation:

- Motor Vehicles and Parts, 1950 – BLS Bull. No. 1015 (20 cents)
- Motor Vehicles and Motor Vehicle Parts, 1957 – BLS Report No. 128
- Railroad Cars, 1952 – series 2, No. 86

* Studies of the effects of the \$1 minimum wage.

I. Occupational Wage Studies—Continued

Nonmanufacturing

Auto Dealer Repair Shops, 1958 – BLS Report No. 141
Banking Industry, 1960 – BLS Report No. 179
Crude Petroleum and Natural Gas Production, 1960 –
BLS Report No. 181
Department and Women's Ready-to-Wear Stores, 1950 –
Series 2, No. 78

Electric and Gas Utilities, 1950 – Series 2, No. 79
Electric and Gas Utilities, 1952 – BLS Report No. 12
Electric and Gas Utilities, 1957 – BLS Report No. 135
Hotels, 1960 – BLS Report No. 173
Power Laundries and Dry Cleaners, 1960 –
BLS Report No. 178

II. Other Industry Wage Studies

Communications Workers, Earnings in October 1956 – BLS Report No. 121
Communications Workers, Earnings in October 1957 – BLS Report No. 138
Communications Workers, Earnings in October 1958 – BLS Report No. 149
Communications Workers, Earnings in October 1959 – BLS Report No. 171
Factory Workers' Earnings – Distributions by Straight-Time Hourly Earnings, 1954 – BLS Bull. No. 1179 (25 cents)
Factory Workers' Earnings – 5 Industry Groups, 1956 – BLS Report No. 118
Factory Workers' Earnings – Distribution by Straight-Time Hourly Earnings, 1958 – BLS Bull. No. 1252 (40 cents)
Factory Workers' Earnings – Selected Manufacturing Industries, 1959 – BLS Bull. No. 1275 (35 cents)
Wages in Nonmetropolitan Areas, South and North Central Regions, October 1960 – BLS Report No. 190

Retail Trade, Employee Earnings in October 1956:

Initial Report – BLS Report No. 119 (30 cents)
Building Materials and Farm Equipment Dealers – BLS Bull. No. 1220-1 (20 cents)
General Merchandise Stores – BLS Bull. No. 1220-2 (35 cents)
Food Stores – BLS Bull. No. 1220-3 (30 cents)
Automotive Dealers and Gasoline Service Stations – BLS Bull. No. 1220-4 (35 cents)
Apparel and Accessories Stores – BLS Bull. No. 1220-5 (45 cents)
Furniture, Home Furnishings, and Appliance Stores – BLS Bull. No. 1220-6 (35 cents)
Drug Stores and Proprietary Stores – BLS Bull. No. 1220-7 (15 cents)
Summary Report – BLS Bull. No. 1220 (55 cents)

Regional Offices

U.S. Department of Labor
Bureau of Labor Statistics
18 Oliver Street
Boston 10, Mass.

U.S. Department of Labor
Bureau of Labor Statistics
341 Ninth Avenue
New York 1, N.Y.

U.S. Department of Labor
Bureau of Labor Statistics
1371 Peachtree Street, NE.
Atlanta 9, Ga.

U.S. Department of Labor
Bureau of Labor Statistics
105 West Adams Street
Chicago 3, Ill.

U.S. Department of Labor
Bureau of Labor Statistics
630 Sansome Street
San Francisco 11, Calif.