

Occupational Employment in Mining, Construction, Finance, and Services

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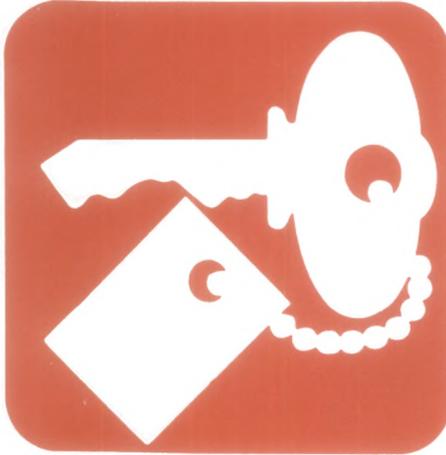
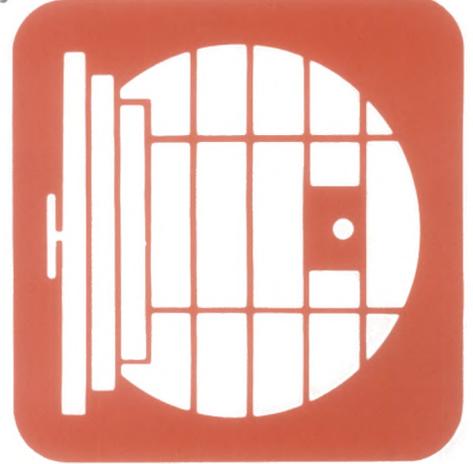
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Occupational Employment in Mining, Construction, Finance, and Services

U.S. Department of Labor
William E. Brock, Secretary

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Preface

This bulletin provides data from a 1984 survey of occupational employment in mining, construction, finance, insurance, real estate, and selected services industries. Occupational employment data from a 1983 survey of hospitals are also included (appendix B). Earlier surveys of these nonmanufacturing industries were conducted in 1973, 1975, 1978, and 1981. Results of the 1981 survey were published in Bulletin 2186, *Occupational Employment in Mining, Construction, Finance, and Services*. Remaining nonmanufacturing industries were surveyed in 1982 and the results were published in Bulletin 2220, *Occupational Employment in Transportation, Communications, Utilities, and Trade*.

Surveys of the manufacturing sector have been conducted at 3-year intervals since 1971. Results of the most recent survey, in 1983, were published in Bulletin 2248, *Occupational Employment in Manufacturing Industries*.

These periodic surveys are part of a Federal-State

cooperative program of occupational employment statistics (OES). The OES program provides information for many data users, including individuals and organizations engaged in planning vocational education programs, training programs supported by the Job Training Partnership Act, and higher education. OES data are also used to prepare information for career counseling, for job placement activities performed at State employment security offices, and for personnel planning and market research conducted by private enterprises.

This bulletin was prepared in the Office of Employment and Unemployment Statistics, Division of Occupational and Administrative Statistics, by Peter Uimonen and Barbara Keitt under the direction of Glyn Finley. Kevin Tidemann provided data processing support. Material in this publication is in the public domain and, with appropriate credit, may be reproduced without permission.

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Introduction

The Occupational Employment Statistics (OES) survey is designed to collect data on occupational employment of wage and salary workers by industry in nonagricultural establishments. The Bureau of Labor Statistics provides the funding, procedures, and technical assistance for the survey, and State employment security agencies collect the data. Supplemental funding was provided by the National Science Foundation.

In 1984, 50 States, the District of Columbia, and Puerto Rico participated in the survey, compared with 48 States and the District of Columbia in 1981, 43 States in 1978, 29 States in 1975, and 22 States in 1973. The estimates in this publication do not include data for Puerto Rico. Data on occupational employment in each participating jurisdiction are available from the agencies listed in appendix D.

Data presented

This bulletin contains the following national data on occupational employment for 2-digit Standard Industrial Classification (SIC)¹ industries: Employment,

¹ The SIC system is described in the 1972 edition of the *Standard Industrial Classification Manual* (Office of Management and Budget, Executive Office of the President, 1972).

percent of total employment, relative error, and the percent of establishments reporting the occupation.²

Employment estimates are based upon survey results adjusted by total industry employment. The percent of total employment refers to the percent of total industry employment in a specific occupation. Relative error is a measure of variability expressed as a proportion of the sample estimate. The percentage of establishments reporting a particular occupation indicates the frequency of occurrence of an occupation.

Occupations with fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 percent are not shown separately but are included in the appropriate residual categories. Employment is rounded to the nearest 10. The relative error and the percent of respondents reporting an occupation are rounded to the nearest whole percent. The percent of total employment was computed from rounded employment data.

² Occupational data at the more detailed 3-digit SIC level are available upon request from the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics. Definitions for all occupations surveyed are also available upon request.

Summary

In 1984, employment in the selected nonmanufacturing industries surveyed was approximately 26.9 million, or more than 28 percent of all nonagricultural wage and salary employment in the Nation.

As shown in table 1, 58 percent of the workers were employed in service industries, such as business and health services. Finance, insurance, and real estate employed 5.7 million workers, or 22 percent. Construction and mining, with 4.3 million and 1 million workers, respectively, accounted for the remainder.

Major occupational groups

The OES occupational classification system, introduced in 1983, was used for this survey. It emphasizes occupations of special interest to many data users, such as technology-related occupations and those which require substantial training. In addition, this system is both more concise and more compatible with the Standard Occupational Classification System than were older classification schemes. A detailed explanation of the OES classification system is given in appendix C.

Under this system, workers are classified into seven major occupational groups: Managerial and administrative workers; professional, paraprofessional, and technical workers; sales and related workers; clerical and administrative support workers; service workers; agriculture, forestry, fishing, and related workers; and production, construction, operating, maintenance, and material handling workers. Tables 2 and 3 present the distribution of employment of these seven major occupational groups in the various industries surveyed.

The following sections provide descriptive analyses of the distribution of occupational employment among the 2-digit SIC industries surveyed. Throughout, changes in occupational employment between survey years that may be due to changes in the classification system, as opposed to changes in the actual occupational mix of the establishments, are noted. These sections also present detailed occupational employment data by industry.

Managerial and administrative workers

Persons holding positions as managerial and administrative workers are primarily concerned with policymaking, planning, organizing, staffing, directing, and controlling activities common to many types of

organizations. Occupations included in this group are plant, office, and sales managers and corporate officers such as president and treasurer. First-line supervisors, such as production and clerical supervisors, however, are included in the same occupational division as the workers they supervise. The new coding structure contains a new occupation: First-line supervisor—sales. These supervisory workers are now included in the sales category rather than in the managers/administrators group (appendix C).

In 1984, managerial and administrative workers numbered 1.8 million, or 6.9 percent of total employment in the nonmanufacturing industries surveyed. The highest concentrations of these workers were in banks and credit agencies (290,560) and business services (281,770), both 16 percent of all managerial and administrative workers.

Professional, paraprofessional, and technical workers

Persons employed in professional positions usually deal with theoretical or practical aspects of such fields as science, engineering, art, education, medicine, law, and business relations. Most of these occupations require substantial educational preparation, usually at the university level. Paraprofessionals work under the direction of professionals. These occupations usually require some postsecondary education or, in some instances, a baccalaureate degree. Technical occupations require knowledge of fundamental scientific, engineering, mathematical, computer programming, or draft design principles. This knowledge is acquired through study at technical schools and junior colleges, through other formal postsecondary training less extensive than a 4-year college education, or through equivalent on-the-job training or experience.

In 1984, professional, paraprofessional, and technical workers numbered 5 million or 19 percent of employment in the surveyed industries. The largest concentrations of these workers were in health services (over 1 million) and business services (over 770,000).

Sales workers

Sales workers in these nonmanufacturing industries primarily include persons who are required to have specific knowledge of the commodity or service being sold. Sales representatives include those who sell com-

modities on a wholesale basis to wholesale, retail, industrial, professional, or other establishments. They solicit orders from established clientele and attempt to secure new customers; show samples or catalog illustrations of products or services to prospective buyers and explain their merit; quote prices and credit and discount terms; arrange delivery schedules; process orders; resolve customer complaints; and keep informed of the latest market conditions, product innovations, and price changes. Sales engineers include workers primarily concerned with selling to businesses goods and services where a technical background equivalent to a degree in engineering is required.

In 1984, the number of sales workers employed was 1.5 million or 5.6 percent of surveyed employment. The highest proportions of total sales workers were employed in insurance and real estate, business services, and security and commodity brokers and investment services.

Clerical and administrative support workers

Persons employed in this occupational group are concentrated in five categories: First-line supervisors—clerical; selected secretarial and general office occupations; electronic data processing and other office machine occupations; selected communication, mail, and message distributing occupations; and material recording, scheduling, dispatching, and distributing occupations. The last group is comprised of plant clerical workers who plan, coordinate, or expedite production and the flow of work. They are also involved in the clerical aspects of receiving, storing, issuing, or shipping of materials, merchandise, supplies, or equipment. The other nonsupervisory groups are primarily comprised of office clerical workers who prepare, systematize, transcribe, transfer, or preserve written communication and records, as well as collect accounts and distribute information.

There were 6.8 million clerical workers (26 percent of

the surveyed total) employed in the nonmanufacturing industries in 1984. The greatest number of such workers was found in banking, insurance and real estate, business services, and health services. Together, these industries alone employed 65 percent of these workers in this survey.

Service workers

Persons in this occupational group perform services for individuals or establishments. Service workers protect individuals and property, prepare and serve food and beverages, and clean interiors and equipment of buildings, offices, stores, vehicles, etc.

In 1984, service workers numbered 4.7 million or 18 percent of estimated employment. Health services, business services, and hotels and other lodging places accounted for about 64 percent of the total employment in this category.

Agriculture, forestry, fishing, and related workers

This category includes forestry workers such as choke setters, log handling equipment operators, nursery workers, and conservation workers. Agricultural workers include persons in occupations such as graders and sorters of agricultural products; gardeners and groundskeepers, except farm; and farm equipment operators. In 1984, the selected nonmanufacturing industries employed only 205,570 of these workers, accounting for less than 1 percent of the total.

Production, construction, operating, maintenance, and material handling occupations

This occupational group includes all skilled, semiskilled, and unskilled workers performing machine and manual tasks. In 1984, this group accounted for 6.1 million or 23 percent of estimated employment. The bulk of production jobs were found in the construction industries (54 percent).

Table 1. Employment in selected nonmanufacturing industries, 1984

Industry	Employment	Percent of total nonmanufacturing employment
Total	26,082,450	100.0
Mining, total	968,250	3.7
Mining, except oil and gas extraction	370,070	1.4
Oil and gas extraction	598,180	2.3
Construction, total	4,323,320	16.6
General building contractors	1,149,750	4.4
Heavy construction contractors	779,470	3.0
Special trade contractors	2,394,100	9.2
Finance, insurance, and real estate, total	5,651,860	21.7
Banks and credit agencies	2,358,080	9.0
Security and commodity brokers and investment services	479,520	1.8
Insurance and real estate	2,814,260	10.8
Services, total	15,139,100	58.0
Hotels and other lodging places	1,267,930	4.9
Personal services	1,002,860	3.8
Business services	4,069,420	15.6
Auto repair, services, and garages	677,880	2.6
Miscellaneous repair services	311,060	1.2
Motion pictures	229,000	.9
Amusement and recreation services, except motion pictures	791,470	3.0
Health services, except hospitals	3,070,950	11.8
Legal services	634,470	2.4
Social services	1,235,850	4.7
Museums and botanical and zoological gardens	39,230	.2
Membership organizations, except religious organizations	647,430	2.5
Miscellaneous services	1,161,550	4.5

Table 2. Employment in selected nonmanufacturing industries by major occupational group, 1984

Industry	Managers and administrative workers	Professional, paraprofessional, and technical workers	Sales and related workers	Clerical and administrative support workers	Agricultural, forestry, fishing, and related workers	Production, construction, operating, maintenance, and material handling workers	Service workers
Total	1,797,040	5,008,400	1,462,030	6,811,300	205,570	6,107,460	4,690,650
Mining, except oil and gas extraction	19,880	24,020	2,440	27,360	550	291,430	4,310
Oil and gas extraction	51,010	117,550	14,230	93,720	630	316,420	4,620
General building contractors	108,840	63,260	17,520	121,950	6,380	818,220	13,580
Heavy construction contractors	43,650	57,070	2,210	57,510	2,110	612,350	4,570
Special trade contractors	117,890	100,580	39,960	229,160	3,050	1,894,160	9,300
Banks and credit agencies	290,560	311,760	77,860	1,617,550	1,240	10,770	48,340
Security and commodity brokers and investment services	55,820	75,450	124,750	205,280	2,040	7,750	8,430
Insurance and real estate	244,770	352,160	539,830	1,168,990	77,000	189,830	241,680
Hotels and other lodging places	70,210	32,460	57,130	182,020	14,100	86,240	825,770
Personal services	30,220	130,030	105,280	100,840	2,590	267,020	366,880
Business services	281,770	771,460	216,520	1,144,900	14,430	575,420	1,064,920
Auto repair, services, and garages	22,600	8,770	83,470	74,430	310	477,010	11,290
Miscellaneous repair services	10,500	12,050	26,710	47,170	1,280	209,620	3,730
Motion pictures	23,430	52,940	32,150	27,050	350	27,980	65,100
Amusement and recreation services, except motion pictures	42,840	136,680	65,880	61,170	52,970	59,110	372,820
Health services, except hospitals	104,560	1,113,020	12,390	634,910	6,040	95,910	1,104,120
Legal services	9,050	277,330	20	339,760	400	830	7,080
Social services	93,660	446,980	12,420	214,660	5,360	105,820	356,950
Museums and botanical and zoological gardens	3,410	9,870	3,530	6,550	2,410	2,590	10,870
Membership organizations, except religious organizations	97,850	172,300	15,570	176,630	10,450	20,980	153,650
Miscellaneous services	74,520	742,660	12,160	279,690	1,880	38,000	12,640

Table 3. Percent distribution of employment in selected nonmanufacturing industries by major occupational group, 1984

Industry	All occupations	Managers and administrative workers	Professional, paraprofessional, and technical workers	Sales and related workers	Clerical and administrative support workers	Agricultural, forestry, and related workers	Production, construction, operating, maintenance, and material handling workers	Service workers
Total	100.0	6.9	19.2	5.6	26.1	0.8	23.4	18.0
Mining, except oil and gas extraction	100.0	5.4	6.5	.7	7.4	.1	78.8	1.2
Oil and gas extraction	100.0	8.5	19.7	2.4	15.7	.1	52.9	.8
General building contractors	100.0	9.5	5.5	1.5	10.6	.6	71.2	1.2
Heavy construction contractors	100.0	5.6	7.3	.3	7.4	.3	78.6	.6
Special trade contractors	100.0	4.9	4.2	1.7	9.6	.1	79.1	.4
Banks and credit agencies	100.0	12.3	13.2	3.3	68.6	.1	.5	2.0
Security and commodity brokers and investment services	100.0	11.6	15.7	26.0	42.8	.4	1.6	1.8
Insurance and real estate	100.0	8.7	12.5	19.2	41.5	2.7	6.7	8.6
Hotels and other lodging places	100.0	5.5	2.6	4.5	14.4	1.1	6.8	65.1
Personal services	100.0	3.0	13.0	10.5	10.1	.3	26.6	36.6
Business services	100.0	6.9	19.0	5.3	28.1	.4	14.1	26.2
Auto repair, services, and garages	100.0	3.3	1.3	12.3	11.0	.0	70.4	1.7
Miscellaneous repair services	100.0	3.4	3.9	8.6	15.2	.4	67.4	1.2
Motion pictures	100.0	10.2	23.1	14.0	11.8	.2	12.2	28.4
Amusement and recreation services, except motion pictures	100.0	5.4	17.3	8.3	7.7	6.7	7.5	47.1
Health services, except hospitals	100.0	3.4	36.2	.4	20.7	.2	3.1	36.0
Legal services	100.0	1.4	43.7	.0	53.6	.1	.1	1.1
Social services	100.0	7.6	36.2	1.0	17.4	.4	8.6	28.9
Museums and botanical and zoological gardens	100.0	8.7	25.2	9.0	16.7	6.1	6.6	27.7
Membership organizations, except religious organizations	100.0	15.1	26.6	2.4	27.3	1.6	3.2	23.7
Miscellaneous services	100.0	6.4	63.9	1.0	24.1	.2	3.3	1.1

Mining

This industry division comprises establishments engaged in the extraction of minerals, liquids, and gases such as coal, ores, crude petroleum, and natural gas. Mining also includes the exploration and development of mineral properties and other preparations customarily done at the mine site, or as part of the mining activity.

In 1984, mining employed approximately 1 million workers or 3.7 percent of all workers in the surveyed industries. Mining was classified into two major industry groups: Mining, except oil and gas extraction; and oil and gas extraction. Nearly 62 percent of these workers were employed in oil and gas extraction.

Mining, except oil and gas extraction

Establishments in this industry group (SIC's 10,11,12, and 14) are primarily engaged in metal mining, anthracite mining, bituminous coal and lignite mining, and mining and quarrying of nonmetallic minerals, except fuels.

Of the 370,070 workers in this group of industries in 1984, over half were engaged in mining bituminous coal and lignite. Thirty percent worked in mining and quarrying of nonmetallic minerals, except fuels; 16 percent in mining metals; and the remainder in mining anthracite (tables 4-7).

Total employment in mining, except oil and gas extraction, declined by almost 20 percent between 1981 and 1984. The percentage changes for each 3-digit SIC industry are shown in text table 1.

Text table 1. Mining, except oil and gas extraction: Employment by industry, 1981 and 1984

Industry	SIC code	Employment		Percent change, 1981-84
		1981	1984	
Iron ores	101	22,310	12,300	-44.9
Copper ores	102	36,530	17,380	-52.4
Lead and zinc ores	103	6,620	3,320	-49.8
Gold and silver ores	104	9,630	10,680	10.9
Bauxite and other aluminum ores	105	400	210	-47.5
Ferroalloy ores, except vanadium	106	7,860	4,190	-46.7
Metal mining services	108	6,260	3,920	-37.4
Miscellaneous metal ores	109	15,770	5,580	-64.6
Anthracite mining	111	3,580	2,710	-24.3
Bituminous coal and lignite mining	121	230,080	198,650	-13.7
Dimension stone	141	3,400	3,450	1.5
Crushed and broken stone	142	39,190	36,250	-7.5
Sand and gravel	144	35,580	34,590	-2.8
Clay and related minerals	145	9,590	8,440	-12.0
Chemical and fertilizer minerals	147	27,480	20,750	-24.5
Miscellaneous non-metallic minerals	149	6,540	6,330	-3.2

Employment in metal mining (SIC 10) declined at a relatively higher than average rate. This may have been due to the effects of the recession of 1982 and foreign competition, each of which resulted in a decline in metals prices and profits. There may have also been some industry-specific technological developments serving to decrease demand. For example, the demand for lead and copper may have declined due to the elimination of lead from paint and gasoline products and the greater use of fiber optics rather than copper in the telecommunications industry. The decline in bituminous coal and lignite mining employment was moderate compared with the average. This may have been partially explained by the substitution of coal for oil and natural gas in many industries.

The largest occupational concentrations of bituminous coal and lignite mining workers (SIC 12) are listed below. Together, they constitute about 21 percent of total industry employment, led by grader, dozer, and scraper operators, with over 10,000 workers.

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Grader, dozer, and scraper operators	10,130	5.1
Shuttle car operators	8,700	4.4
Underground mine machinery mechanics	8,610	4.3
Roof bolters	7,940	4.0
Truckdrivers, heavy or tractor-trailer	7,190	3.6

The five occupations with the highest proportion of total employees in the nonmetallic mineral mining industry, excluding fuels (SIC 14), are listed below. They accounted for about 31 percent of total industry employment. Heavy or tractor-trailer truckdrivers was the occupation with by far the most workers, 12,340.

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Truckdrivers, heavy or tractor-trailer	12,340	11.1
Excavating and loading machine operators	7,340	6.6
Crushing, grinding, mixing, and blending machine operators and tenders	6,190	5.6
Maintenance repairers, general utility	4,980	4.5
First-line supervisors, construction trades and extractive workers	3,550	3.2

Oil and gas extraction

This industry (SIC 13) consists of establishments engaged in the production of crude petroleum, natural gas, and cycle condensate, and also includes the recovery of oil from oil sands and oil shale.

In 1984, oil and gas extraction employed 598,180 workers or 62 percent of all workers employed in the mining industry (table 8). Production and related workers made up the majority with 316,420 or 53 percent of industry employment. This major occupational group was followed by professional, paraprofessional, and technical workers, with 117,550 or 19.7 percent of industry employment, and clerical and administrative workers (93,720 or 15.7 percent).

Changes in the OES classification structure resulted in shifts of specific occupations to different major divisions between 1981 and 1984. For example, in 1984, there were 4,520 first-line sales supervisors and 960 sales engineers categorized in the sales occupational division, whereas these workers were included in the managerial and professional divisions, respectively, in 1981. These examples do not exhaust the changes in major division employment that were due to changes in the OES structure, but they are the most significant.

Employment in the oil and gas extraction industry (SIC 13) declined by 10.4 percent between 1981 and 1984. This may have been generally due to the combined effects of the recession, a worldwide increase in supply, and increased conservation efforts, resulting in a decline in prices. As shown in text table 2, the employment decline was concentrated in the oil and gas field services industry (SIC 138). This may reflect a decline in investment in drilling rigs and exploratory activity.

Text table 2. Oil and gas extraction: Employment by industry, 1981 and 1984

Industry	SIC code	Employment		Percent change, 1981-84
		1981	1984	
Crude petroleum and natural gas	131	250,010	256,130	2.4
Natural gas liquids	132	6,790	6,590	-2.9
Oil and gas field services	138	410,950	335,380	-18.4

The five most populous occupations in the oil and gas extraction industry are given in the tabulation below. These jobs together made up 29 percent of total industry employment. The largest single occupation was roustabouts (12.8 percent).

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Roustabouts	76,480	12.8	-15.9
Service unit operators	30,320	5.1	(¹)
Secretaries	26,290	4.4	16.7
Derrick operators, oil and gas extraction	21,450	3.6	28.0
Rotary drill operators, oil and gas extraction	20,960	3.5	-6.8

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Between 1981 and 1984, derrick operator employment increased by 28 percent. During the same period, employment of secretaries increased by 16.7 percent, and roustabout employment declined by almost 16 percent.

Table 4. Mining, except oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 10, 11, 12, 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	370,070	100.00	--	--
Managerial and administrative occupations	19,890	5.37	n.a.	n.a.
Financial managers	2,630	.71	6	26
Personnel, training, and labor relations managers	930	.25	9	10
Purchasing managers	460	.12	13	7
Marketing, advertising, and public relations managers	390	.11	18	4
Administrative services managers	590	.16	15	5
Mining, quarrying, and oil and gas well drilling managers	8,230	2.22	8	46
General managers and top executives	4,040	1.09	7	25
All other managers and administrators	2,620	.71	10	12
Professional, paraprofessional, and technical occupations	24,040	6.50	n.a.	n.a.
Management support workers	6,900	1.86	n.a.	n.a.
Accountants, auditors, and other financial specialists	2,900	.78	n.a.	n.a.
Accountants and auditors	2,510	.68	8	21
Budget analysts	170	.05	22	3
All other financial specialists	220	.06	34	2
Purchasing agents, except wholesale and retail trade, and farm products	1,030	.28	9	12
Personnel, training, and labor relations specialists	1,190	.32	10	11
Cost estimators	140	.04	21	2
Compliance officers and enforcement inspectors, except construction	1,100	.30	10	6
All other management support workers	540	.15	19	3
Engineers	5,510	1.49	n.a.	n.a.
Metallurgists, and metallurgical, ceramic, and materials engineers	640	.17	6	5
Mining engineers, including mine safety	3,140	.85	7	19
Civil engineers, including traffic	410	.11	17	4
Mechanical engineers	600	.16	14	5
All other engineers	720	.19	16	5
Surveying and mapping scientists	740	.20	12	6
Engineering and related technicians and technologists	3,260	.88	n.a.	n.a.
Civil engineering technicians and technologists	190	.05	46	1
Drafters	1,110	.30	10	10
Surveying and mapping technicians and technologists	1,120	.30	9	7
All other engineering and related technicians and technologists	840	.23	n.a.	n.a.
Physical scientists	3,130	.85	n.a.	n.a.
Chemists, except biochemists	620	.17	8	5
Geologists, geophysicists, and oceanographers	2,220	.60	10	12
All other physical scientists	290	.08	24	3
Life scientists	280	.08	n.a.	n.a.
Physical and life science technicians and technologists	2,000	.54	n.a.	n.a.
Chemical technicians and technologists, except health	1,660	.45	5	6
All other physical and life science technicians and technologists	340	.09	12	2
Computer scientists and related workers	1,150	.31	n.a.	n.a.
Systems analysts, electronic data processing	440	.12	22	3
Computer programmers	560	.15	15	5
Computer programmer aides	150	.04	30	2
Lawyers	230	.06	21	2

See footnotes at end of table.

Table 4. Mining, except oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10, 11, 12, 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Legal assistants and technicians, except clerical	60	0.02	45	1
Registered nurses	140	.04	27	1
All other health professionals, paraprofessional and technicians	110	.03	n.a.	n.a.
All other professional, paraprofessional, and technical workers	530	.14	n.a.	n.a.
Sales and related occupations	2,430	.66	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	1,080	.29	8	13
Sales representatives, scientific and related products and services, except retail	340	.09	16	3
Sales representatives, except scientific and related products or services and retail	780	.21	9	9
All other sales and related workers	230	.06	38	2
Clerical and administrative support occupations	27,310	7.38	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,310	.35	10	12
Secretaries	5,310	1.43	6	37
Stenographers	100	.03	26	1
Receptionists and information clerks	400	.11	14	6
Typists	390	.11	16	4
Typists, word processing equipment	210	.06	16	2
Personnel clerks, except payroll and timekeeping	550	.15	11	6
File clerks	140	.04	25	2
Bookkeeping, accounting, and auditing clerks	4,620	1.25	5	38
Payroll and timekeeping clerks	1,450	.39	8	16
Billing, cost and rate clerks	450	.12	11	5
General office clerks	4,030	1.09	5	32
Electronic data processing and other office machine operators	870	.24	n.a.	n.a.
Computer operators, except peripheral equipment	350	.09	14	4
Data entry keyers, except composing	330	.09	12	4
All other office machine operators	190	.05	n.a.	n.a.
Switchboard operators	310	.08	11	5
Material recording, scheduling, dispatching, and distributing workers	6,690	1.81	n.a.	n.a.
Production, planning, and expediting clerks	870	.24	10	5
Weighers, measurers, checkers, and samplers, recordkeeping	2,700	.73	4	27
Stock clerks, stockroom, warehouse or storage yard	2,660	.72	6	12
All other material recording, scheduling, and distributing workers	460	.12	13	4
All other clerical and administrative support workers	480	.13	n.a.	n.a.
Service occupations	4,350	1.18	n.a.	n.a.
First-line supervisors and manager/supervisors, service	320	.09	23	2
Guards and watch guards	2,340	.63	9	12
Cleaning and building service workers, except private households	1,520	.41	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	1,430	.39	7	12
All other cleaning and building service workers, except private households	90	.02	24	1
All other service workers	170	.05	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	580	.16	n.a.	n.a.
Gardeners and groundskeepers, except farm	520	.14	39	2
All other agriculture, forestry, fishing, and related workers	60	.02	n.a.	n.a.

See footnotes at end of table.

Table 4. Mining, except oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10, 11, 12, 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Production, construction, operating, maintenance, and material handling occupations	291,470	78.76	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	25,740	6.96	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	6,240	1.69	5	15
First-line supervisors and manager/supervisors - construction trades and extractive workers	12,320	3.33	4	40
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	2,370	.64	8	8
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	2,330	.63	13	7
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	2,480	.67	12	6
Precision inspectors, testers, and graders	300	.08	17	1
Production inspectors, testers, graders, sorters, samplers, and weighers	1,020	.28	9	6
All other inspectors, testers and related occupations	240	.06	30	1
Mechanics, installers, and repairers	47,130	12.74	n.a.	n.a.
Machinery maintenance mechanics	15,780	4.26	n.a.	n.a.
Underground mine machinery mechanics	10,520	2.84	7	8
All other machinery maintenance mechanics	5,260	1.42	7	7
Millwrights	960	.26	13	1
Machinery maintenance workers	6,780	1.83	6	21
Maintenance repairers, general utility	9,700	2.62	5	33
Automotive mechanics	920	.25	11	4
Bus and truck mechanics and diesel engine specialists	2,650	.72	9	14
Mobile heavy equipment mechanics, except engines	8,760	2.37	6	25
Rail car repairers	480	.13	16	1
Riggers	110	.03	20	1
All other mechanics, installers, and repairers	990	.27	14	3
Construction trades workers, except material moving	14,420	3.90	n.a.	n.a.
Carpenters	880	.24	21	5
Brattice builders	2,090	.56	10	4
Electricians	8,150	2.20	6	16
Painters and paperhangers, construction and maintenance	190	.05	14	2
Plumbers, pipefitters, and steamfitters	490	.13	15	1
Paving, surfacing, and tamping equipment operators	270	.07	23	1
Rail-track laying and maintenance equipment operators	1,300	.35	10	3
All other construction trades workers	1,050	.28	13	2
Earth drillers, except oil and gas	5,410	1.46	7	21
Blasters and explosives workers	4,240	1.15	7	17
Rock splitters, quarry	1,200	.32	17	4
Roof bolters	8,300	2.24	7	6
Continuous mining machine operators	7,800	2.11	8	7
Mine cutting and channeling machine operators	4,020	1.09	11	6
All other mining machine operators	6,050	1.63	17	5
All other extractive workers, except helpers	8,100	2.19	12	5
Precision metal workers	1,200	.32	n.a.	n.a.
Machinists	1,200	.32	11	6
Precision workers, nec	190	.05	20	1
Machine setters, set-up operators, and tenders, metal and plastic	400	.11	n.a.	n.a.

See footnotes at end of table.

Table 4. Mining, except oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10, 11, 12, 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Machine tool cutting operators and tenders, metal and plastic	400	0.11	25	1
Machine setters, set-up operators, and tenders, except metal and plastic	17,360	4.69	n.a.	n.a.
Furnace, kiln, oven, drier, or kettle operators and tenders	1,550	.42	9	6
Boiler operators and tenders, low pressure	170	.05	13	1
Cutting and slicing machine operators and tenders	270	.07	12	1
Cleaning, washing, and pickling equipment operators and tenders	1,300	.35	19	4
Separating, filtering, clarifying, precipitating, and still machine operators and tenders	4,120	1.11	9	7
Crushing, grinding, mixing, and blending machine operators and tenders	8,990	2.43	3	37
All other machine setters and set-up operators, except metal and plastic	240	.06	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	720	.19	n.a.	n.a.
Other hand workers, nec	9,430	2.55	n.a.	n.a.
Welders and cutters	8,650	2.34	6	24
Solderers and brazers	60	.02	40	(³)
All other hand workers, nec	720	.19	28	1
Plant and system workers	2,650	.72	n.a.	n.a.
Stationary engineers	1,200	.32	12	3
All other plant and system operators	1,450	.39	10	3
Motor vehicle operators	24,460	6.61	n.a.	n.a.
Truck drivers, heavy or tractor trailer	21,880	5.91	4	49
Truck drivers, light, include delivery and route workers	1,620	.44	8	9
All other motor vehicle operators	960	.26	24	2
Rail yard engineers, dinkey operators, and hostlers	790	.21	16	3
Railroad brake, signal, and switch operators	530	.14	17	2
All other rail vehicle operatives and controllers	690	.19	19	1
All other transportation and motor vehicle operators	680	.18	14	2
Material moving equipment operators	64,270	17.37	n.a.	n.a.
Excavating and loading machine operators	13,960	3.77	6	45
Dragline operators	4,030	1.09	10	18
Dredge operators and dipper tenders	1,000	.27	8	7
Loading machine operators, underground mining	4,100	1.11	11	8
Shuttle car operators	9,210	2.49	8	6
Grader, dozer, and scraper operators	13,140	3.55	9	17
Hoist and winch operators	1,050	.28	9	4
Crane and tower operators	1,020	.28	8	6
Industrial truck and tractor operators	4,110	1.11	9	17
Conveyor operators and tenders	4,100	1.11	7	15
Pump operators	1,250	.34	8	6
Operating engineers	4,240	1.15	15	12
All other material moving equipment operators	3,060	.83	13	6
Helpers - mechanics and repairers	2,920	.79	11	7
Construction trades and extractive worker helpers	5,400	1.46	10	10
Freight, stock, and material movers, hand	2,860	.77	12	8
All other helpers, laborers, and material movers, hand	23,670	6.40	5	18

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 10)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	57,680	100.00	--	--
Managerial and administrative occupations	2,730	4.73	n.a.	n.a.
Financial managers	400	.69	7	30
Personnel, training, and labor relations managers	190	.33	6	16
Purchasing managers	80	.14	7	9
Marketing, advertising, and public relations managers	70	.12	19	5
Administrative services managers	120	.21	19	8
Mining, quarrying, and oil and gas well drilling managers	750	1.30	10	44
General managers and top executives	650	1.13	8	30
All other managers and administrators	470	.81	8	19
Professional, paraprofessional, and technical occupations	7,750	13.44	n.a.	n.a.
Management support workers	1,430	2.48	n.a.	n.a.
Accountants, auditors, and other financial specialists	690	1.20	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	220	.38	7	17
Personnel, training, and labor relations specialists	240	.42	6	15
Compliance officers and enforcement inspectors, except construction	140	.24	10	7
All other management support workers	140	.24	n.a.	n.a.
Engineers	1,710	2.96	n.a.	n.a.
Metallurgists, and metallurgical, ceramic, and materials engineers	450	.78	5	25
Mining engineers, including mine safety	810	1.40	4	37
Civil engineers, including traffic	50	.09	10	5
Mechanical engineers	190	.33	9	10
All other engineers	210	.36	9	10
Surveying and mapping scientists	250	.43	13	14
Engineering and related technicians and technologists	900	1.56	n.a.	n.a.
Civil engineering technicians and technologists	50	.09	17	2
Drafters	310	.54	7	24
Surveying and mapping technicians and technologists	210	.36	7	12
All other engineering and related technicians and technologists	330	.57	n.a.	n.a.
Physical scientists	1,860	3.22	n.a.	n.a.
Chemists, except biochemists	240	.42	7	14
Geologists, geophysicists, and oceanographers	1,520	2.64	5	49
All other physical scientists	100	.17	10	8
Physical and life science technicians and technologists	730	1.27	n.a.	n.a.
Chemical technicians and technologists, except health	550	.95	7	17
All other physical and life science technicians and technologists	180	.31	10	9
Computer scientists and related workers	340	.59	n.a.	n.a.
Systems analysts, electronic data processing	170	.29	12	6
Computer programmers	170	.29	12	10
Lawyers	60	.10	17	3
Registered nurses	60	.10	22	3
All other health professionals, paraprofessional and technicians	80	.14	n.a.	n.a.
All other professional, paraprofessional, and technical workers	330	.57	n.a.	n.a.

See footnotes at end of table.

Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales and related occupations	150	0.26	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	90	.16	16	8
All other sales and related workers	60	.10	n.a.	n.a.
Clerical and administrative support occupations	4,270	7.40	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	220	.38	9	13
Secretaries	1,110	1.92	5	59
Receptionists and information clerks	60	.10	12	7
Typists	90	.16	11	7
Typists, word processing equipment	80	.14	12	5
Personnel clerks, except payroll and timekeeping	110	.19	9	9
Bookkeeping, accounting, and auditing clerks	730	1.27	7	36
Payroll and timekeeping clerks	190	.33	7	17
General office clerks	460	.80	8	21
Electronic data processing and other office machine operators	200	.35	n.a.	n.a.
Data entry keyers, except composing	100	.17	9	7
All other office machine operators	100	.17	n.a.	n.a.
Switchboard operators	60	.10	7	7
Material recording, scheduling, dispatching, and distributing workers	820	1.42	n.a.	n.a.
Production, planning, and expediting clerks	190	.33	10	5
Stock clerks, stockroom, warehouse or storage yard	480	.83	7	16
All other material recording, scheduling, and distributing workers	150	.26	n.a.	n.a.
All other clerical and administrative support workers	140	.24	n.a.	n.a.
Service occupations	890	1.54	n.a.	n.a.
Guards and watch guards	480	.83	7	18
Cleaning and building service workers, except private households	310	.54	n.a.	n.a.
All other service workers	100	.17	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	10	.02	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations	41,880	72.61	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	4,620	8.01	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	1,580	2.74	7	19
First-line supervisors and manager/supervisors - construction trades and extractive workers	2,080	3.61	7	34
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	430	.75	17	8
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	210	.36	18	7
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	320	.55	14	7
Inspectors and related occupations	270	.47	n.a.	n.a.

See footnotes at end of table.

Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Mechanics, installers, and repairers	8,700	15.08	n.a.	n.a.
Machinery maintenance mechanics	3,290	5.70	n.a.	n.a.
Underground mine machinery mechanics	1,070	1.86	11	11
All other machinery maintenance mechanics	2,220	3.85	8	11
Millwrights	330	.57	26	3
Machinery maintenance workers	680	1.18	10	12
Maintenance repairers, general utility	1,400	2.43	11	25
Automotive mechanics	400	.69	17	8
Bus and truck mechanics and diesel engine specialists	530	.92	12	8
Mobile heavy equipment mechanics, except engines	1,620	2.81	7	18
Rail car repairers	240	.42	11	3
All other mechanics, installers, and repairers	210	.36	n.a.	n.a.
Construction trades workers, except material moving	3,030	5.25	n.a.	n.a.
Carpenters	200	.35	8	9
Electricians	1,930	3.35	7	20
Painters and paperhangers, construction and maintenance	80	.14	16	4
Plumbers, pipefitters, and steamfitters	400	.69	17	5
Rail-track laying and maintenance equipment operators	280	.49	20	3
All other construction trades workers	140	.24	20	2
Earth drillers, except oil and gas	1,320	2.29	8	25
Blasters and explosives workers	1,250	2.17	13	16
Roof bolters	210	.36	21	3
Mine cutting and channeling machine operators	1,450	2.51	21	5
All other mining machine operators	1,050	1.82	14	5
All other extractive workers, except helpers	1,230	2.13	20	5
Precision metal workers	510	.88	n.a.	n.a.
Machinists	510	.88	19	10
Precision workers, nec	100	.17	28	1
Machine setters, set-up operators, and tenders, except metal and plastic	3,590	6.22	n.a.	n.a.
Furnace, kiln, oven, drier, or kettle operators and tenders	480	.83	12	8
Boiler operators and tenders, low pressure	80	.14	13	3
Cleaning, washing, and pickling equipment operators and tenders	70	.12	19	2
Separating, filtering, clarifying, precipitating, and still machine operators and tenders	870	1.51	10	10
Crushing, grinding, mixing, and blending machine operators and tenders	1,900	3.29	6	22
All other machine setters and set-up operators, except metal and plastic	20	.03	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	170	.29	n.a.	n.a.
Hand working occupations, including assemblers and fabricators	1,730	3.00	n.a.	n.a.
Plant and system workers	540	.94	n.a.	n.a.
Stationary engineers	370	.64	20	4
All other plant and system operators	170	.29	21	3
Motor vehicle operators	2,300	3.99	n.a.	n.a.
Truck drivers, heavy or tractor trailer	2,130	3.69	9	17
Truck drivers, light, include delivery and route workers	170	.29	20	5
Rail yard engineers, dinkey operators, and hostlers	90	.16	23	2
Railroad brake, signal, and switch operators	90	.16	28	2
All other rail vehicle operatives and controllers	130	.23	20	2
All other transportation and motor vehicle operators	280	.49	21	2
Material moving equipment operators	4,740	8.22	n.a.	n.a.

See footnotes at end of table.

Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 10)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Excavating and loading machine operators	800	1.39	8	15
Dragline operators	80	.14	36	2
Loading machine operators, underground mining	870	1.51	28	5
Shuttle car operators	240	.42	22	2
Grader, dozer, and scraper operators	970	1.68	8	13
Hoist and winch operators	320	.55	13	8
Crane and tower operators	220	.38	20	3
Industrial truck and tractor operators	350	.61	8	7
Conveyor operators and tenders	200	.35	11	5
Pump operators	160	.28	20	5
Operating engineers	380	.66	14	6
All other material moving equipment operators	150	.26	24	4
Helpers - mechanics and repairers	530	.92	17	7
Construction trades and extractive worker helpers	780	1.35	14	13
Freight, stock, and material movers, hand	370	.64	18	7
All other helpers, laborers, and material movers, hand	2,610	4.52	9	13
All other production, construction, operating, maintenance, and material handling occupations	360	.62	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 12)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	198,650	100.00	--	--
Managerial and administrative occupations	10,830	5.45	n.a.	n.a.
Financial managers	1,110	.56	14	38
Personnel, training, and labor relations managers	580	.29	15	32
Purchasing managers	270	.14	21	21
Marketing, advertising, and public relations managers	230	.12	30	11
Administrative services managers	370	.19	23	15
Mining, quarrying, and oil and gas well drilling managers	4,700	2.37	14	61
General managers and top executives	2,040	1.03	14	51
All other managers and administrators	1,530	.77	16	32
Professional, paraprofessional, and technical occupations	11,510	5.79	n.a.	n.a.
Management support workers	4,010	2.02	n.a.	n.a.
Accountants, auditors, and other financial specialists	1,360	.68	n.a.	n.a.
Accountants and auditors	1,130	.57	17	36
All other financial specialists	230	.12	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	620	.31	14	33
Personnel, training, and labor relations specialists	710	.36	17	29
Cost estimators	60	.03	42	4
Compliance officers and enforcement inspectors, except construction	910	.46	12	24
All other management support workers	350	.18	28	9
Engineers	2,850	1.43	n.a.	n.a.
Mining engineers, including mine safety	1,980	1.00	12	51
Civil engineers, including traffic	230	.12	29	10
Mechanical engineers	240	.12	33	9
All other engineers	400	.20	n.a.	n.a.
Surveying and mapping scientists	420	.21	21	17
Engineering and related technicians and technologists	1,800	.91	n.a.	n.a.
Drafters	630	.32	18	27
Surveying and mapping technicians and technologists	760	.38	13	26
All other engineering and related technicians and technologists	410	.21	n.a.	n.a.
Physical scientists	730	.37	n.a.	n.a.
Chemists, except biochemists	170	.09	25	10
Geologists, geophysicists, and oceanographers	400	.20	49	16
All other physical scientists	160	.08	44	8
Life scientists	240	.12	n.a.	n.a.
Physical and life science technicians and technologists	410	.21	n.a.	n.a.
Chemical technicians and technologists, except health	290	.15	17	10
All other physical and life science technicians and technologists	120	.06	31	5
Computer scientists and related workers	610	.31	n.a.	n.a.
Systems analysts, electronic data processing	230	.12	41	10
Computer programmers	290	.15	29	12
Computer programmer aides	90	.05	49	5
Lawyers	140	.07	34	8
All other professional, paraprofessional, and technical workers	300	.15	n.a.	n.a.
Sales and related occupations	470	.24	n.a.	n.a.

See footnotes at end of table.

Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 12)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, sales and related workers	170	0.09	47	4
Sales representatives, scientific and related products and services, except retail	100	.05	43	3
All other sales and related workers	200	.10	n.a.	n.a.
Clerical and administrative support occupations	12,390	6.24	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	760	.38	17	29
Secretaries	2,430	1.22	13	51
Stenographers	60	.03	43	3
Receptionists and information clerks	240	.12	23	16
Typists	180	.09	35	8
Typists, word processing equipment	90	.05	38	4
Personnel clerks, except payroll and timekeeping	330	.17	18	17
File clerks	90	.05	41	5
Bookkeeping, accounting, and auditing clerks	1,710	.86	12	41
Payroll and timekeeping clerks	800	.40	14	33
Billing, cost and rate clerks	260	.13	18	13
General office clerks	1,600	.81	13	33
Electronic data processing and other office machine operators	440	.22	n.a.	n.a.
Computer operators, except peripheral equipment	180	.09	27	11
Data entry keyers, except composing	130	.07	29	10
All other office machine operators	130	.07	n.a.	n.a.
Switchboard operators	160	.08	21	14
Material recording, scheduling, dispatching, and distributing workers	2,920	1.47	n.a.	n.a.
Production, planning, and expediting clerks	380	.19	20	13
Weighers, measurers, checkers, and samplers, recordkeeping	580	.29	17	19
Stock clerks, stockroom, warehouse or storage yard	1,720	.87	9	37
All other material recording, scheduling, and distributing workers	240	.12	24	8
All other clerical and administrative support workers	320	.16	n.a.	n.a.
Service occupations	2,280	1.15	n.a.	n.a.
First-line supervisors and manager/supervisors, service	160	.08	43	7
Guards and watch guards	1,340	.67	15	24
Cleaning and building service workers, except private households	710	.36	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	660	.33	15	23
All other cleaning and building service workers, except private households	50	.03	40	2
All other service workers	70	.04	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	400	.20	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations	160,770	80.93	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	14,720	7.41	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	3,670	1.85	9	42

See footnotes at end of table.

Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 12)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors - construction trades and extractive workers	6,670	3.36	7	42
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	1,470	.74	13	23
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	1,490	.75	20	19
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	1,420	.71	20	15
Precision inspectors, testers, and graders	220	.11	23	3
Production inspectors, testers, graders, sorters, samplers, and weighers	390	.20	22	10
All other inspectors, testers and related occupations	210	.11	34	5
Mechanics, installers, and repairers	24,460	12.31	n.a.	n.a.
Machinery maintenance mechanics	10,420	5.25	n.a.	n.a.
Underground mine machinery mechanics	8,610	4.33	8	29
All other machinery maintenance mechanics	1,810	.91	17	16
Machinery maintenance workers	4,260	2.14	10	35
Maintenance repairers, general utility	3,250	1.64	14	24
Automotive mechanics	220	.11	29	7
Bus and truck mechanics and diesel engine specialists	1,000	.50	22	14
Mobile heavy equipment mechanics, except engines	4,500	2.27	11	34
Rail car repairers	230	.12	31	3
All other mechanics, installers, and repairers	580	.29	n.a.	n.a.
Construction trades workers, except material moving	8,990	4.53	n.a.	n.a.
Carpenters	420	.21	44	9
Brattice builders	2,000	1.01	10	22
Electricians	4,940	2.49	9	43
Rail-track laying and maintenance equipment operators	960	.48	13	12
All other construction trades workers	670	.34	18	7
Earth drillers, except oil and gas	2,500	1.26	14	32
Blasters and explosives workers	2,120	1.07	12	33
Roof bolters	7,940	4.00	7	33
Continuous mining machine operators	7,190	3.62	9	36
Mine cutting and channeling machine operators	1,820	.92	18	14
All other mining machine operators	4,200	2.11	24	18
All other extractive workers, except helpers	5,750	2.89	16	17
Precision metal workers	450	.23	n.a.	n.a.
Machinists	450	.23	18	16
Precision workers, nec	60	.03	33	2
Machine setters, set-up operators, and tenders, metal and plastic	210	.11	n.a.	n.a.
Machine tool cutting operators and tenders, metal and plastic	210	.11	42	1
Machine setters, set-up operators, and tenders, except metal and plastic	3,840	1.93	n.a.	n.a.
Cleaning, washing, and pickling equipment operators and tenders	940	.47	27	12
Separating, filtering, clarifying, precipitating, and still machine operators and tenders	1,800	.91	18	18
Crushing, grinding, mixing, and blending machine operators and tenders	860	.43	27	15
All other machine setters and set-up operators, except metal and plastic	30	.02	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	210	.11	n.a.	n.a.
Other hand workers, nec	5,410	2.72	n.a.	n.a.
Welders and cutters	5,100	2.57	9	40
All other hand workers, nec	310	.16	n.a.	n.a.

See footnotes at end of table.

Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 12)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Plant and system workers	1,070	0.54	n.a.	n.a.
Stationary engineers	480	.24	24	8
All other plant and system operators	590	.30	20	8
Motor vehicle operators	8,180	4.12	n.a.	n.a.
Truck drivers, heavy or tractor trailer	7,190	3.62	10	40
Truck drivers, light, include delivery and route workers	420	.21	26	12
All other motor vehicle operators	570	.29	39	3
Rail yard engineers, dinkey operators, and hostlers	580	.29	22	7
Railroad brake, signal, and switch operators	300	.15	29	5
All other rail vehicle operatives and controllers	510	.26	25	5
All other transportation and motor vehicle operators	220	.11	27	4
Material moving equipment operators	38,300	19.28	n.a.	n.a.
Excavating and loading machine operators	5,760	2.90	15	33
Dragline operators	2,160	1.09	19	23
Loading machine operators, underground mining	2,520	1.27	15	17
Shuttle car operators	8,700	4.38	8	30
Grader, dozer, and scraper operators	10,130	5.10	11	48
Hoist and winch operators	420	.21	19	9
Crane and tower operators	300	.15	21	7
Industrial truck and tractor operators	1,370	.69	26	14
Conveyor operators and tenders	2,160	1.09	13	20
Pump operators	620	.31	14	17
Operating engineers	1,640	.83	38	8
All other material moving equipment operators	2,520	1.27	15	21
Helpers - mechanics and repairers	1,880	.95	16	19
Construction trades and extractive worker helpers	3,090	1.56	17	11
Freight, stock, and material movers, hand	610	.31	50	8
All other helpers, laborers, and material movers, hand	15,260	7.68	7	39
All other production, construction, operating, maintenance, and material handling occupations	290	.15	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 7. Mining and quarrying of nonmetallic minerals, except fuels: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	110,860	100.00	--	--
Managerial and administrative occupations	6,170	5.57	n.a.	n.a.
Financial managers	1,100	.99	4	23
Personnel, training, and labor relations managers	130	.12	6	4
Purchasing managers	110	.10	5	4
Marketing, advertising, and public relations managers	100	.09	10	2
Administrative services managers	80	.07	10	2
Mining, quarrying, and oil and gas well drilling managers	2,730	2.46	3	42
General managers and top executives	1,310	1.18	4	18
All other managers and administrators	610	.55	6	6
Professional, paraprofessional, and technical occupations	4,680	4.22	n.a.	n.a.
Management support workers	1,420	1.28	n.a.	n.a.
Accountants, auditors, and other financial specialists	840	.76	n.a.	n.a.
Accountants and auditors	750	.68	4	15
All other financial specialists	90	.08	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	180	.16	4	5
Personnel, training, and labor relations specialists	230	.21	5	6
Compliance officers and enforcement inspectors, except construction	60	.05	8	2
All other management support workers	110	.10	n.a.	n.a.
Engineers	910	.82	n.a.	n.a.
Metallurgists, and metallurgical, ceramic, and materials engineers	140	.13	9	2
Mining engineers, including mine safety	330	.30	5	7
Civil engineers, including traffic	120	.11	9	2
Mechanical engineers	160	.14	11	2
All other engineers	160	.14	12	2
Surveying and mapping scientists	60	.05	9	2
Engineering and related technicians and technologists	550	.50	n.a.	n.a.
Drafters	160	.14	8	3
Surveying and mapping technicians and technologists	150	.14	15	1
All other engineering and related technicians and technologists	240	.22	n.a.	n.a.
Physical scientists	550	.50	n.a.	n.a.
Geologists, geophysicists, and oceanographers	300	.27	15	4
All other physical scientists	250	.23	n.a.	n.a.
Physical and life science technicians and technologists	860	.78	n.a.	n.a.
Computer scientists and related workers	100	.09	n.a.	n.a.
Computer programmers	100	.09	10	2
All other professional, paraprofessional, and technical workers	230	.21	n.a.	n.a.
Sales and related occupations	1,800	1.62	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	820	.74	5	16
Sales representatives, scientific and related products and services, except retail	210	.19	13	3
Sales representatives, except scientific and related products or services and retail	680	.61	5	12
All other sales and related workers	90	.08	12	1

See footnotes at end of table.

Table 7. Mining and quarrying of nonmetallic minerals, except fuels: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Clerical and administrative support occupations	10,470	9.44	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	300	.27	5	7
Secretaries	1,740	1.57	3	30
Receptionists and information clerks	110	.10	7	3
Typists	120	.11	9	3
Personnel clerks, except payroll and timekeeping	110	.10	6	3
Bookkeeping, accounting, and auditing clerks	2,150	1.94	2	38
Payroll and timekeeping clerks	440	.40	5	12
Billing, cost and rate clerks	160	.14	7	3
General office clerks	1,950	1.76	3	34
Electronic data processing and other office machine operators	230	.21	n.a.	n.a.
Data entry keyers, except composing	100	.09	8	2
All other office machine operators	130	.12	n.a.	n.a.
Switchboard operators	90	.08	5	3
Material recording, scheduling, dispatching, and distributing workers	2,900	2.62	n.a.	n.a.
Production, planning, and expediting clerks	270	.24	11	3
Weighers, measurers, checkers, and samplers, recordkeeping	1,980	1.79	3	33
Stock clerks, stockroom, warehouse or storage yard	450	.41	5	6
All other material recording, scheduling, and distributing workers	200	.18	9	3
All other clerical and administrative support workers	170	.15	n.a.	n.a.
Service occupations	1,090	.98	n.a.	n.a.
First-line supervisors and manager/supervisors, service	110	.10	23	1
Guards and watch guards	490	.44	5	8
Cleaning and building service workers, except private households	490	.44	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	140	.13	n.a.	n.a.
Gardeners and groundskeepers, except farm	140	.13	15	2
Production, construction, operating, maintenance, and material handling occupations	86,510	78.04	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	6,280	5.66	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	960	.87	5	8
First-line supervisors and manager/supervisors - construction trades and extractive workers	3,550	3.20	3	42
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	460	.41	7	5
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	570	.51	6	5
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	740	.67	8	4
Production inspectors, testers, graders, sorters, samplers, and weighers	360	.32	8	4

See footnotes at end of table.

Table 7. Mining and quarrying of nonmetallic minerals, except fuels: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other inspectors, testers and related occupations	100	0.09	n.a.	n.a.
Mechanics, installers, and repairers	13,680	12.34	n.a.	n.a.
Machinery maintenance mechanics	2,060	1.86	n.a.	n.a.
Underground mine machinery mechanics	830	.75	9	2
All other machinery maintenance mechanics	1,230	1.11	7	4
Millwrights	600	.54	15	1
Machinery maintenance workers	1,760	1.59	4	20
Maintenance repairers, general utility	4,980	4.49	3	37
Automotive mechanics	290	.26	10	2
Bus and truck mechanics and diesel engine specialists	1,100	.99	4	15
Mobile heavy equipment mechanics, except engines	2,570	2.32	3	25
Riggers	70	.06	20	(³)
All other mechanics, installers, and repairers	250	.23	n.a.	n.a.
Construction trades workers, except material moving	2,130	1.92	n.a.	n.a.
Carpenters	240	.22	9	2
Brattice builders	60	.05	15	1
Electricians	1,210	1.09	4	8
Painters and paperhangers, construction and maintenance	80	.07	10	1
Paving, surfacing, and tamping equipment operators	250	.23	15	1
Rail-track laying and maintenance equipment operators	50	.05	32	(³)
All other construction trades workers	240	.22	21	1
Earth drillers, except oil and gas	1,500	1.35	4	17
Blasters and explosives workers	810	.73	4	13
Rock splitters, quarry	1,000	.90	7	6
Roof bolters	140	.13	13	1
Continuous mining machine operators	530	.48	11	2
Mine cutting and channeling machine operators	750	.68	9	4
All other mining machine operators	770	.69	16	2
All other extractive workers, except helpers	890	.80	10	2
Precision metal workers	220	.20	n.a.	n.a.
Machinists	220	.20	10	2
Machine tool cutting operators and tenders, metal and plastic	160	.14	26	1
Machine setters, set-up operators, and tenders, except metal and plastic	9,800	8.84	n.a.	n.a.
Furnace, kiln, oven, drier, or kettle operators and tenders	1,040	.94	12	6
Boiler operators and tenders, low pressure	80	.07	15	1
Cutting and slicing machine operators and tenders	260	.23	12	2
Cleaning, washing, and pickling equipment operators and tenders	250	.23	9	3
Separating, filtering, clarifying, precipitating, and still machine operators and tenders	1,390	1.25	9	3
Crushing, grinding, mixing, and blending machine operators and tenders	6,190	5.58	3	45
All other machine setters and set-up operators, except metal and plastic	190	.17	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	400	.36	n.a.	n.a.
Other hand workers, nec	2,130	1.92	n.a.	n.a.
Welders and cutters	1,890	1.70	3	22
All other hand workers, nec	240	.22	23	1
Plant and system workers	1,010	.91	n.a.	n.a.
Stationary engineers	340	.31	15	2
All other plant and system operators	670	.60	13	2
Motor vehicle operators	13,510	12.19	n.a.	n.a.
Truck drivers, heavy or tractor trailer	12,340	11.13	2	59

See footnotes at end of table.

Table 7. Mining and quarrying of nonmetallic minerals, except fuels: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 14)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Truck drivers, light, include delivery and route workers	1,020	0.92	8	9
All other motor vehicle operators	150	.14	12	1
Rail yard engineers, dinky operators, and hostlers	120	.11	11	2
Railroad brake, signal, and switch operators	140	.13	14	1
All other transportation and motor vehicle operators	180	.16	24	1
Material moving equipment operators	20,680	18.65	n.a.	n.a.
Excavating and loading machine operators	7,340	6.62	2	54
Dragline operators	1,660	1.50	4	20
Dredge operators and dipper tenders	960	.87	7	10
Loading machine operators, underground mining	700	.63	7	6
Shuttle car operators	280	.25	12	1
Grader, dozer, and scraper operators	1,860	1.68	5	10
Hoist and winch operators	290	.26	11	3
Crane and tower operators	490	.44	7	7
Industrial truck and tractor operators	2,350	2.12	4	19
Conveyor operators and tenders	1,720	1.55	5	16
Pump operators	450	.41	10	3
Operating engineers	2,200	1.98	6	14
All other material moving equipment operators	380	.34	10	3
Helpers - mechanics and repairers	460	.41	9	3
Construction trades and extractive worker helpers	1,520	1.37	7	10
Freight, stock, and material movers, hand	1,880	1.70	8	9
All other helpers, laborers, and material movers, hand	5,630	5.08	5	14
All other production, construction, operating, maintenance, and material handling occupations	130	.12	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 13)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	598,180	100.00	--	--
Managerial and administrative occupations	51,010	8.53	n.a.	n.a.
Financial managers	9,350	1.56	8	30
Personnel, training, and labor relations managers	1,360	.23	10	7
Purchasing managers	2,440	.41	14	12
Marketing, advertising, and public relations managers	1,230	.21	12	4
Administrative services managers	2,820	.47	10	7
Mining, quarrying, and oil and gas well drilling managers	12,430	2.08	7	35
General managers and top executives	10,610	1.77	10	21
All other managers and administrators	10,770	1.80	10	11
Professional, paraprofessional, and technical occupations	117,550	19.65	n.a.	n.a.
Management support workers	28,560	4.77	n.a.	n.a.
Accountants, auditors, and other financial specialists	16,780	2.81	n.a.	n.a.
Accountants and auditors	13,820	2.31	7	20
Budget analysts	890	.15	13	3
All other financial specialists	2,070	.35	16	3
Purchasing agents, except wholesale and retail trade, and farm products	2,430	.41	18	7
Personnel, training, and labor relations specialists	2,050	.34	9	6
Cost estimators	470	.08	23	2
Compliance officers and enforcement inspectors, except construction	510	.09	21	3
All other management support workers	6,320	1.06	13	5
Engineers	29,260	4.89	n.a.	n.a.
Petroleum engineers	19,970	3.34	7	21
Chemical engineers	1,040	.17	12	2
Civil engineers, including traffic	1,580	.26	15	2
Electrical and electronic engineers	1,180	.20	16	3
Safety engineers, except mining	490	.08	21	3
Mechanical engineers	2,060	.34	16	4
All other engineers	2,940	.49	n.a.	n.a.
Surveying and mapping scientists	1,540	.26	22	3
Engineering and related technicians and technologists	12,070	2.02	n.a.	n.a.
Civil engineering technicians and technologists	570	.10	15	1
Electrical and electronic engineering technicians and technologists	1,310	.22	17	3
Mechanical engineering technicians and technologists	800	.13	19	1
Drafters	4,550	.76	8	10
Surveying and mapping technicians and technologists	1,270	.21	17	2
All other engineering and related technicians and technologists	3,570	.60	10	4
Physical scientists	21,670	3.62	n.a.	n.a.
Chemists, except biochemists	860	.14	23	1
Geologists, geophysicists, and oceanographers	20,350	3.40	7	17
All other physical scientists	460	.08	24	1
Physical and life science technicians and technologists	8,330	1.39	n.a.	n.a.
Chemical technicians and technologists, except health	830	.14	28	2
Petroleum technicians and technologists	6,150	1.03	12	6
All other physical and life science technicians and technologists	1,350	.23	18	2

See footnotes at end of table.

Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 13)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Computer scientists and related workers	8,330	1.39	n.a.	n.a.
Systems analysts, electronic data processing	5,030	.84	11	5
Computer programmers	2,640	.44	10	5
Computer programmer aides	660	.11	14	2
Social scientists, including urban and regional planners	340	.06	n.a.	n.a.
Lawyers	1,710	.29	13	4
Law clerks	80	.01	35	(³)
Paralegal personnel	280	.05	27	1
All other legal assistants and technicians, except clerical	600	.10	46	1
Public relations specialists and publicity writers	400	.07	25	2
All other professional, paraprofessional, and technical workers	4,380	.73	n.a.	n.a.
Sales and related occupations	14,230	2.38	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	4,520	.76	11	14
Sales engineers	960	.16	24	2
Sales representatives, scientific and related products and services, except retail	4,030	.67	14	7
Sales representatives, except scientific and related products or services and retail	3,160	.53	14	6
All other sales and related workers	1,560	.26	28	2
Clerical and administrative support occupations	93,720	15.67	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	5,190	.87	8	12
Secretaries	26,290	4.39	5	42
Stenographers	890	.15	15	2
Receptionists and information clerks	3,870	.65	10	18
Typists	2,630	.44	12	7
Typists, word processing equipment	1,640	.27	14	5
Personnel clerks, except payroll and timekeeping	1,180	.20	18	5
File clerks	1,560	.26	11	4
Order clerks, materials, merchandise, and service	640	.11	18	3
Bookkeeping, accounting, and auditing clerks	16,770	2.80	6	36
Payroll and timekeeping clerks	2,050	.34	11	13
Billing, cost and rate clerks	580	.10	21	2
General office clerks	16,710	2.79	6	34
Electronic data processing and other office machine operators	5,430	.91	n.a.	n.a.
Billing, posting, and calculating machine operators	80	.01	38	(³)
Computer operators, except peripheral equipment	2,460	.41	10	5
Peripheral EDP equipment operators	200	.03	21	1
Data entry keyers, except composing	1,850	.31	15	5
All other office machine operators	840	.14	13	2
Switchboard operators	700	.12	12	6
Material recording, scheduling, dispatching, and distributing workers	5,380	.90	n.a.	n.a.
Dispatchers, except police, fire, and ambulance	2,040	.34	12	5
Production, planning, and expediting clerks	1,680	.28	15	3
Weighers, measurers, checkers, and samplers, recordkeeping	120	.02	33	(³)
Stock clerks, stockroom, warehouse or storage yard	1,240	.21	18	5
All other material recording, scheduling, and distributing workers	300	.05	23	1

See footnotes at end of table.

Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 13)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other clerical and administrative support workers	2,210	0.37	13	3
Service occupations	4,620	.77	n.a.	n.a.
First-line supervisors and manager/supervisors, service	480	.08	24	2
Guards and watch guards	820	.14	16	3
Food and beverage preparation and service workers	1,180	.20	29	1
Cleaning and building service workers, except private households	1,680	.28	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	1,420	.24	14	8
All other cleaning and building service workers, except private households	260	.04	47	1
All other service workers	460	.08	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	630	.11	n.a.	n.a.
Gardeners and groundskeepers, except farm	490	.08	32	2
All other agriculture, forestry, fishing, and related workers	140	.02	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations	316,420	52.90	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	23,920	4.00	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	1,960	.33	12	6
First-line supervisors and manager/supervisors - construction trades and extractive workers	15,800	2.64	7	32
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	830	.14	25	3
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	2,020	.34	18	3
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	3,310	.55	13	5
Precision inspectors, testers, and graders	2,940	.49	29	2
All other inspectors, testers and related occupations	1,600	.27	n.a.	n.a.
Mechanics, installers, and repairers	21,730	3.63	n.a.	n.a.
Machinery maintenance mechanics	6,300	1.05	12	13
Machinery maintenance workers	370	.06	25	1
Maintenance repairers, general utility	5,800	.97	13	12
Automotive mechanics	1,290	.22	15	7
Bus and truck mechanics and diesel engine specialists	3,190	.53	13	8
Mobile heavy equipment mechanics, except engines	1,480	.25	18	4
Precision instrument repairers	900	.15	19	3
Mechanical control and valve installers and repairers	1,100	.18	21	1
All other mechanics, installers, and repairers	1,300	.22	n.a.	n.a.
Construction trades workers, except material moving	3,000	.50	n.a.	n.a.
Carpenters	510	.09	26	2
Electricians	1,230	.21	16	4
Pipelayers	600	.10	48	(³)
All other construction trades workers	660	.11	40	1
Blasters and explosives workers	1,520	.25	48	2

See footnotes at end of table.

Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 13)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Rotary drill operators, oil and gas extraction	20,960	3.50	9	19
Derrick operators, oil and gas extraction	21,450	3.59	9	15
Service unit operators	30,320	5.07	8	21
Roustabouts	76,480	12.79	5	41
Mining machine operators	1,920	.32	35	(³)
All other extractive workers, except helpers	10,060	1.68	14	5
Precision metal workers	1,930	.32	n.a.	n.a.
Machinists	1,930	.32	25	1
Machine setters, set-up operators, and tenders, metal and plastic	510	.09	n.a.	n.a.
Machine tool cutting operators and tenders, metal and plastic	110	.02	47	(³)
Combination machine tool operators and tenders, metal and plastic	400	.07	41	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	5,810	.97	n.a.	n.a.
Other hand workers, nec	5,470	.91	n.a.	n.a.
Welders and cutters	4,780	.80	12	12
All other hand workers, nec	690	.12	n.a.	n.a.
Plant and system workers	9,130	1.53	n.a.	n.a.
Gas plant operators	2,500	.42	18	3
Petroleum pump system operators	810	.14	32	1
Petroleum refinery and control panel operators	710	.12	35	1
Gaugers	2,440	.41	25	2
Stationary engineers	570	.10	47	1
All other plant and system operators	2,100	.35	30	1
Motor vehicle operators	18,080	3.02	n.a.	n.a.
Truck drivers, heavy or tractor trailer	14,600	2.44	10	20
Truck drivers, light, include delivery and route workers	3,160	.53	18	6
All other motor vehicle operators	320	.05	39	1
Pilots, ship	160	.03	38	(³)
Aircraft pilots and flight engineers	600	.10	16	2
All other transportation and motor vehicle operators	420	.07	29	1
Material moving equipment operators	33,570	5.61	n.a.	n.a.
Oil pumps, except well head	9,800	1.64	15	12
Well head pumpers	12,180	2.04	14	15
Gas compressor operators	870	.15	35	1
Excavating and loading machine operators	2,260	.38	20	4
Dragline operators	90	.02	42	(³)
Grader, dozer, and scraper operators	1,570	.26	23	3
Hoist and winch operators	1,150	.19	38	2
Crane and tower operators	580	.10	24	1
Industrial truck and tractor operators	250	.04	35	1
Pump operators	1,220	.20	33	1
Operating engineers	2,440	.41	25	4
All other material moving equipment operators	1,160	.19	29	1
Helpers - mechanics and repairers	2,620	.44	18	7
Construction trades and extractive worker helpers	4,970	.83	20	3
Freight, stock, and material movers, hand	1,390	.23	25	4
All other helpers, laborers, and material movers, hand	13,790	2.31	13	7
All other production, construction, operating, maintenance, and material handling occupations	2,070	.35	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Construction

This industry division (SIC's 15-17) includes new construction, additions, alterations, and repair work. Three broad types of activities are covered: Building construction by general contractors or operative builders; other construction by general contractors; and special trade contractors.

In 1984, the construction industry employed approximately 4.3 million workers or 17 percent of the workers in the surveyed industries. About 55 percent of these construction workers were engaged in special trades contracting, such as electrical work, masonry, and plumbing (table 9).

The largest occupational group in the construction industry consisted of 3.3 million production and related workers, accounting for over three-fourths of industry employment. Special trades contracting employed 57 percent of the workers in this major group. Clerical workers, ranking second of the seven major groups, made up 9.5 percent of total employment in the construction industry.

General building contractors

This industry (SIC 15) includes establishments primarily engaged in the construction of residential, farm, industrial, commercial, and other buildings. The industry employed over 1.1 million workers in 1984, or 27 percent of all workers employed in construction. This level of employment was 4.7 percent higher than in 1981.

As shown in table 10, the 818,220 production and related workers accounted for 71 percent of total industry employment. Clerical and administrative support workers ranked second, with 11 percent. The third largest group was managerial and administrative workers, with 9.5 percent. Sales and service workers made up 1.5 and 1.2 percent of industry employment, respectively.

A change in the OES structure resulted in the inclusion of 4,200 first-line sales supervisors and sales engineers in the sales group in 1984, occupations which were previously included under managers and officers. Also, about 73,000 workers were classified in other first-line supervisory occupations, many of which were included in the managerial group in 1981.

The five most populous occupations are shown in the following tabulation. Together, they accounted for over 53 percent of total employment in the industry.

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Carpenters	319,410	27.8	8.1
Carpenters' helpers . .	116,700	10.1	49.6
Construction managers	65,940	5.7	(¹)
First-line supervisors, construction trades . .	64,300	5.6	(¹)
Secretaries	44,580	3.9	35.3

¹ Because of changes in the survey design system, data for 1981 and 1984 are not comparable.

Carpenters' helpers increased by almost 50 percent in the general building contractors' industry between 1981 and 1984. The number of carpenters increased by over 8 percent during the same period. The number of secretaries increased by about 35 percent.

Heavy construction contractors

Establishments in this industry (SIC 16) are primarily engaged in heavy construction such as highways and streets, bridges, sewers, railroads, irrigation projects, flood control projects and marine construction, and miscellaneous types of construction work other than buildings.

In 1984, these establishments employed 779,470 workers or 18 percent of the total employed in construction. This was a 16.6-percent decline in employment from 1981.

As shown in text table 3, the heavy construction industry, excluding highways and streets (SIC 162), declined the most. Although fixed investment recovered in 1983 and 1984 after the recession, the component made up of spending on structures did not increase. This may explain the employment decline in SIC 162.

As shown in table 11, heavy construction contractors employed 612,350 production and related workers, accounting for 78.6 percent of total industry employment.

Text table 3. Heavy construction contractors: Employment by industry, 1981 and 1984

Industry	SIC code	Employment		Percent change, 1981-84
		1981	1984	
Highway and street construction	161	267,130	258,140	-3.4
Heavy construction, except highway and street	162	667,710	521,290	-21.9

Clerical and administrative support workers and professional, paraprofessional, and technical workers numbered 57,510 (7.4 percent) and 57,070 (7.3 percent), respectively.

Sales engineers and first-line supervisors accounted for 1,320 sales workers in 1984. These occupations were included in the professional and managerial categories in 1981.

The five largest occupations in this industry are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Truckdrivers, heavy or tractor-trailer	49,970	6.4
Operating engineers	43,790	5.6
Graders, dozers, and scraper operators	43,730	5.6
First-line supervisors, construction trades	33,100	4.3
Pipelayers	29,970	3.8

Special trades contractors

This industry (SIC 17) includes establishments engaged in specialized activities such as electrical work, plumbing, and painting. Establishments engaged in miscellaneous specialized activities such as industrial machinery and equipment installation, gas leakage detection, and water well drilling are also included.

In 1984, this industry employed almost 2.4 million workers, constituting 55 percent of employment in the construction industry. This was an 8.7-percent increase from 1981.

As shown in table 12, 79 percent of the industry's workers, approximately 1.9 million, were production and related workers. Clerical and administrative support workers accounted for 9.6 percent of industry employ-

ment, followed by the managerial and administrative group with approximately 4.9 percent. Professional, paraprofessional, and technical occupations made up 4.2 percent of industry employment.

The 1984 data includes about 4,500 first-line sales supervisors and sales engineers in the sales group, occupations which were previously included in the managerial and professional groups. In 1984, there were 84,540 first-line production supervisors, whereas there were only 27,670 nonworking production supervisors in 1981. Some of this difference is likely due to changes in the OES classification system.

The five most populous jobs in special trades contracting are listed in the following tabulation:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Electricians	231,820	9.7	3.7
Plumbers, pipefitters, and steamfitters	166,370	7.0	-1.1
Painters and paper- hangers, construction and maintenance ...	106,840	4.5	8.8
Carpenters	95,210	4.0	7.6
Heating, air- conditioning, and refrigeration mechanics and installers	93,610	3.9	(¹)

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Employment in painting and paperhanging occupations increased by 8.8 percent in the special trades contracting industry between 1981 and 1984. Employment of carpenters and electricians increased by 7.6 and 3.7 percent, respectively, while employment of plumbers, pipefitters, and steamfitters declined by about 1 percent.

Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 15, 16 and 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	4,323,300	100.00	--	--
Managerial and administrative occupations	270,390	6.25	n.a.	n.a.
Financial managers	56,500	1.31	1	22
Personnel, training, and labor relations managers	1,490	.03	6	1
Purchasing managers	1,870	.04	7	1
Marketing, advertising, and public relations managers	2,110	.05	7	1
Administrative services managers	3,200	.07	7	1
Construction managers	154,600	3.58	1	40
General managers and top executives	41,240	.95	2	13
All other managers and administrators	9,380	.22	7	2
Professional, paraprofessional, and technical occupations	220,930	5.11	n.a.	n.a.
Management support workers	143,080	3.31	n.a.	n.a.
Accountants, auditors, and other financial specialists	25,330	.59	n.a.	n.a.
Accountants and auditors	23,860	.55	2	10
Budget analysts	570	.01	11	(³)
All other financial specialists	900	.02	23	(³)
Purchasing agents, except wholesale and retail trade, and farm products	13,280	.31	3	6
Personnel, training, and labor relations specialists	1,070	.02	12	(³)
Cost estimators	95,000	2.20	1	30
Construction and building inspectors	4,820	.11	13	1
All other management support workers	3,580	.08	n.a.	n.a.
Engineers	37,890	.88	n.a.	n.a.
Civil engineers, including traffic	18,660	.43	11	3
Electrical and electronic engineers	5,770	.13	10	1
Industrial engineers, except safety	1,230	.03	22	(³)
Safety engineers, except mining	580	.01	9	(³)
Mechanical engineers	8,000	.19	8	2
All other engineers	3,650	.08	n.a.	n.a.
Architects, except landscape and marine	1,080	.02	12	(³)
Surveying and mapping scientists	1,600	.04	7	1
Engineering and related technicians and technologists	29,800	.69	n.a.	n.a.
Civil engineering technicians and technologists	1,710	.04	14	(³)
Electrical and electronic engineering technicians and technologists	3,970	.09	14	(³)
Mechanical engineering technicians and technologists	510	.01	18	(³)
Drafters	19,160	.44	3	5
Surveying and mapping technicians and technologists	2,000	.05	10	(³)
All other engineering and related technicians and technologists	2,450	.06	n.a.	n.a.
Computer scientists and related workers	2,800	.06	n.a.	n.a.
Systems analysts, electronic data processing	1,140	.03	14	(³)
Computer programmers	1,660	.04	11	1
Health practitioners, technologists, technicians, and related health workers	540	.01	n.a.	n.a.
Interior designers	740	.02	17	(³)
All other professional, paraprofessional, and technical workers	3,400	.08	n.a.	n.a.
Sales and related occupations	59,690	1.38	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	1,990	.05	10	1
Sales engineers	8,080	.19	5	2

See footnotes at end of table.

Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15, 16 and 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales representatives, scientific and related products and services, except retail	1,060	0.02	17	(³)
Sales representatives, except scientific and related products or services and retail	37,700	.87	3	9
All other sales and related workers	10,860	.25	7	1
Clerical and administrative support occupations	408,610	9.45	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	6,580	.15	4	3
Secretaries	132,270	3.06	1	40
Stenographers	540	.01	15	(³)
Receptionists and information clerks	4,040	.09	5	2
Typists	13,640	.32	3	5
Typists, word processing equipment	4,520	.10	7	2
Personnel clerks, except payroll and timekeeping	730	.02	8	(³)
File clerks	1,160	.03	14	(³)
Procurement clerks	860	.02	19	(³)
Bookkeeping, accounting, and auditing clerks	93,990	2.17	1	35
Payroll and timekeeping clerks	22,850	.53	2	12
Billing, cost and rate clerks	1,080	.02	7	1
General office clerks	91,640	2.12	1	27
Electronic data processing and other office machine operators	6,140	.14	n.a.	n.a.
Billing, posting, and calculating machine operators	1,480	.03	10	1
Computer operators, except peripheral equipment	2,040	.05	11	1
Data entry keyers, except composing	1,920	.04	13	1
All other office machine operators	700	.02	n.a.	n.a.
Switchboard operators	1,290	.03	12	1
Material recording, scheduling, dispatching, and distributing workers	24,020	.56	n.a.	n.a.
Dispatchers, except police, fire, and ambulance	1,730	.04	14	1
Production, planning, and expediting clerks	1,780	.04	15	(³)
Weighers, measurers, checkers, and samplers, recordkeeping	440	.01	12	(³)
Stock clerks, stockroom, warehouse or storage yard	18,640	.43	3	7
Traffic, shipping, and receiving clerks	980	.02	19	(³)
All other material recording, scheduling, and distributing workers	450	.01	28	(³)
All other clerical and administrative support workers	3,260	.08	n.a.	n.a.
Service occupations	27,450	.63	n.a.	n.a.
First-line supervisors and manager/supervisors, service	1,490	.03	12	(³)
Crossing guards	750	.02	11	(³)
Guards and watch guards	3,450	.08	12	(³)
All other protective service workers	620	.01	27	(³)
Food and beverage preparation and service workers	940	.02	25	(³)
Cleaning and building service workers, except private households	18,920	.44	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	16,890	.39	4	5
All other cleaning and building service workers, except private households	2,030	.05	n.a.	n.a.
All other service workers	1,280	.03	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	11,550	.27	n.a.	n.a.
Gardeners and groundskeepers, except farm	10,500	.24	7	2
All other agriculture, forestry, fishing, and related workers	1,050	.02	23	(³)

See footnotes at end of table.

Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15, 16 and 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Production, construction, operating, maintenance, and material handling occupations	3,324,680	76.90	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	195,560	4.52	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	4,140	.10	7	1
First-line supervisors and manager/supervisors - construction trades and extractive workers	179,870	4.16	1	35
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	1,830	.04	10	1
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	5,370	.12	7	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	4,350	.10	7	1
Precision inspectors, testers, and graders	1,720	.04	22	(³)
All other inspectors, testers and related occupations	990	.02	n.a.	n.a.
Mechanics, installers, and repairers	263,610	6.10	n.a.	n.a.
Millwrights	20,070	.46	5	2
Machinery maintenance workers	4,090	.09	6	1
Maintenance repairers, general utility	38,890	.90	4	8
Automotive mechanics	4,810	.11	4	2
Bus and truck mechanics and diesel engine specialists	6,170	.14	4	2
Mobile heavy equipment mechanics, except engines	20,650	.48	3	6
Telephone and cable TV line installers and repairers	26,530	.61	8	1
Electric home appliance and power tool repairers	1,230	.03	20	(³)
Electrical powerline installers and repairers	12,640	.29	11	1
All other electrical and electronic equipment mechanics, installers, and repairers	3,660	.08	15	(³)
Heating, air conditioning, and refrigeration mechanics and installers	96,160	2.22	2	7
Elevator installers and repairers	12,070	.28	8	(³)
Riggers	5,780	.13	25	(³)
Installers and repairers, manufactured buildings, mobile homes, and travel trailers	780	.02	26	(³)
All other mechanics, installers, and repairers	10,080	.23	n.a.	n.a.
Construction trades workers, except material moving	1,704,470	39.43	n.a.	n.a.
Carpenters	441,380	10.21	1	25
Ceiling tile installers and acoustical carpenters	15,720	.36	6	1
Drywall installers	58,370	1.35	3	4
Tapers	22,430	.52	4	3
Lathers	10,580	.24	6	1
Electricians	250,360	5.79	1	9
Brickmasons	88,360	2.04	2	8
Stonemasons	7,760	.18	7	1
Tile setters, hard	13,380	.31	6	1
Concrete and terrazzo finishers	87,710	2.03	2	10
Reinforcing metal workers	19,640	.45	5	2
Plasterers and stucco masons	19,000	.44	5	2
Painters and paperhangers, construction and maintenance	122,940	2.84	1	8
Plumbers, pipefitters, and steamfitters	202,210	4.68	2	11
Pipelayers	2,420	.06	14	(³)
Pipelayers	34,270	.79	5	3

See footnotes at end of table.

Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15, 16 and 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Carpet installers	11,740	0.27	7	1
Floor layers, except carpet, wood, and hard tiles	5,330	.12	9	1
Floor sanding machine operators	2,370	.05	12	(³)
Air hammer operators	9,420	.22	7	2
Pile driving operators	3,100	.07	13	(³)
Paving, surfacing, and tamping equipment operators	28,930	.67	4	3
Rail-track laying and maintenance equipment operators	1,660	.04	27	(³)
Insulation workers	42,420	.98	4	2
Sheet metal duct installers	2,460	.06	15	(³)
Roofers	88,210	2.04	2	5
Glaziers	20,390	.47	4	2
Structural metal workers	50,280	1.16	4	4
Fence erectors	14,050	.32	5	1
All other construction trades workers	27,580	.64	5	2
Earth drillers, except oil and gas	9,250	.21	5	1
Blasters and explosives workers	1,770	.04	16	(³)
All other extractive workers, except helpers	1,710	.04	23	(³)
Precision metal workers	94,660	2.19	n.a.	n.a.
Sheet-metal workers	80,880	1.87	3	6
Boilermakers	11,930	.28	8	1
All other precision metal workers	1,850	.04	n.a.	n.a.
Precision woodworkers	11,310	.26	n.a.	n.a.
Cabinetmakers and bench carpenters	11,310	.26	7	1
Precision workers, nec	710	.02	25	(³)
Machine setters, set-up operators, and tenders, metal and plastic	11,410	.26	n.a.	n.a.
Machine tool cutting operators and tenders, metal and plastic	440	.01	23	(³)
Metal fabricators, structural metal products	10,970	.25	6	1
Machine setters, set-up operators, and tenders, except metal and plastic	9,030	.21	n.a.	n.a.
Sawing machine operators and tenders	480	.01	40	(³)
Crushing, grinding, mixing, and blending machine operators and tenders	6,240	.14	8	1
All other machine setters and set-up operators, except metal and plastic	760	.02	35	(³)
All other machine operators and tenders, except metal and plastic	1,550	.04	n.a.	n.a.
Precision assemblers, metal	5,960	.14	n.a.	n.a.
Fitters, structural metal, precision	5,410	.13	15	(³)
All other precision assemblers, metal	550	.01	29	(³)
Other hand workers, nec	33,220	.77	n.a.	n.a.
Welders and cutters	29,070	.67	5	4
Carpet cutters, diagrammers, and seamers	810	.02	21	(³)
All other hand workers, nec	3,340	.08	n.a.	n.a.
Plant and system workers	1,860	.04	n.a.	n.a.
Motor vehicle operators	111,080	2.57	n.a.	n.a.
Truck drivers, heavy or tractor trailer	72,700	1.68	2	11
Truck drivers, light, include delivery and route workers	36,350	.84	2	11
All other motor vehicle operators	2,030	.05	17	(³)
All other transportation and motor vehicle operators	1,170	.03	23	(³)
Material moving equipment operators	199,330	4.61	n.a.	n.a.
Excavating and loading machine operators	36,810	.85	3	6
Dragline operators	3,220	.07	8	1
Dredge operators and dipper tenders	880	.02	28	(³)
Grader, dozer, and scraper operators	62,340	1.44	2	8
Hoist and winch operators	2,610	.06	15	1
Crane and tower operators	8,130	.19	7	2
Industrial truck and tractor operators	6,460	.15	9	1
Pump operators	1,430	.03	13	(³)
Operating engineers	75,030	1.74	2	9

See footnotes at end of table.

Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15, 16 and 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other material moving equipment operators	2,420	0.06	10	(³)
Helpers - mechanics and repairers	13,620	.32	5	3
Helpers - brick and stone masons, and hard tile setters	69,130	1.60	2	7
Helpers - carpenters and related	157,770	3.65	2	13
Helpers - electricians and powerline transmission installers	50,410	1.17	4	3
Helpers - painters, paperhangers, plasterers, and stucco masons	26,210	.61	3	3
Helpers - plumbers, pipefitters, and steamfitters	53,920	1.25	3	5
Helpers - roofers	20,420	.47	4	2
Helpers - all other construction trades	34,370	.79	4	3
Helpers - extractive workers	2,210	.05	11	(³)
Freight, stock, and material movers, hand	19,480	.45	4	5
All other helpers, laborers, and material movers, hand	217,920	5.04	2	12
All other production, construction, operating, maintenance, and material handling occupations	400	.01	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 15)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,149,750	100.00	--	--
Managerial and administrative occupations	108,840	9.47	n.a.	n.a.
Financial managers	19,810	1.72	3	25
Personnel, training, and labor relations managers	640	.06	11	2
Purchasing managers	680	.06	9	2
Marketing, advertising, and public relations managers	1,290	.11	8	3
Administrative services managers	1,900	.17	11	3
Construction managers	65,940	5.74	2	54
General managers and top executives	15,000	1.30	4	17
All other managers and administrators	3,580	.31	10	3
Professional, paraprofessional, and technical occupations	63,260	5.50	n.a.	n.a.
Management support workers	44,210	3.85	n.a.	n.a.
Accountants, auditors, and other financial specialists	9,030	.79	n.a.	n.a.
Accountants and auditors	8,400	.73	4	12
Budget analysts	240	.02	15	1
All other financial specialists	390	.03	20	1
Purchasing agents, except wholesale and retail trade, and farm products	3,760	.33	6	7
Personnel, training, and labor relations specialists	470	.04	21	1
Cost estimators	26,860	2.34	3	29
Construction and building inspectors	2,400	.21	16	2
All other management support workers	1,690	.15	n.a.	n.a.
Engineers	6,660	.58	n.a.	n.a.
Civil engineers, including traffic	4,790	.42	8	5
Electrical and electronic engineers	290	.03	36	(³)
Industrial engineers, except safety	180	.02	25	(³)
Safety engineers, except mining	150	.01	13	1
Mechanical engineers	740	.06	31	1
All other engineers	510	.04	n.a.	n.a.
Architects, except landscape and marine	930	.08	13	2
Landscape architects	160	.01	25	(³)
Surveying and mapping scientists	320	.03	18	(³)
Engineering and related technicians and technologists	8,220	.71	n.a.	n.a.
Civil engineering technicians and technologists	630	.05	21	1
Drafters	6,130	.53	6	8
Surveying and mapping technicians and technologists	530	.05	23	(³)
All other engineering and related technicians and technologists	930	.08	n.a.	n.a.
Computer scientists and related workers	1,120	.10	n.a.	n.a.
Systems analysts, electronic data processing	330	.03	16	1
Computer programmers	610	.05	14	1
Computer programmer aides	180	.02	14	1
Health practitioners, technologists, technicians, and related health workers	400	.03	n.a.	n.a.
Interior designers	590	.05	19	1
All other professional, paraprofessional, and technical workers	650	.06	n.a.	n.a.
Sales and related occupations	17,520	1.52	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	1,290	.11	13	2
Sales engineers	2,910	.25	11	3

See footnotes at end of table.

Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales representatives, scientific and related products and services, except retail	650	0.06	25	(³)
Sales representatives, except scientific and related products or services and retail	6,040	.53	9	3
All other sales and related workers	6,630	.58	9	3
Clerical and administrative support occupations	121,950	10.61	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	2,860	.25	7	6
Secretaries	44,580	3.88	2	44
Stenographers	400	.03	19	(³)
Receptionists and information clerks	1,960	.17	7	5
Typists	4,350	.38	6	6
Typists, word processing equipment	1,720	.15	10	3
Personnel clerks, except payroll and timekeeping	320	.03	12	1
File clerks	530	.05	25	1
Procurement clerks	270	.02	16	1
Bookkeeping, accounting, and auditing clerks	29,300	2.55	2	37
Payroll and timekeeping clerks	5,770	.50	4	12
Billing, cost and rate clerks	440	.04	12	1
General office clerks	24,020	2.09	3	25
Electronic data processing and other office machine operators	1,480	.13	n.a.	n.a.
Computer operators, except peripheral equipment	710	.06	9	2
All other office machine operators	770	.07	n.a.	n.a.
Switchboard operators	620	.05	9	2
Material recording, scheduling, dispatching, and distributing workers	1,980	.17	n.a.	n.a.
Dispatchers, except police, fire, and ambulance	130	.01	31	(³)
Production, planning, and expediting clerks	660	.06	20	1
Stock clerks, stockroom, warehouse or storage yard	810	.07	15	2
Traffic, shipping, and receiving clerks	220	.02	24	(³)
All other material recording, scheduling, and distributing workers	160	.01	n.a.	n.a.
All other clerical and administrative support workers	1,350	.12	n.a.	n.a.
Service occupations	13,580	1.18	n.a.	n.a.
First-line supervisors and manager/supervisors, service	940	.08	16	1
Protective service occupations	1,760	.15	n.a.	n.a.
Food and beverage preparation and service workers	640	.06	30	(³)
Cleaning and building service workers, except private households	9,480	.82	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	8,400	.73	8	7
All other cleaning and building service workers, except private households	1,080	.09	n.a.	n.a.
All other service workers	760	.07	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	6,380	.55	n.a.	n.a.
Gardeners and groundskeepers, except farm	6,120	.53	9	4
All other agriculture, forestry, fishing, and related workers	260	.02	39	(³)
Production, construction, operating, maintenance, and material handling occupations	818,220	71.17	n.a.	n.a.

See footnotes at end of table.

Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	69,170	6.02	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	950	.08	18	1
First-line supervisors and manager/supervisors - construction trades and extractive workers	64,300	5.59	2	38
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	450	.04	22	1
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	2,200	.19	12	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	1,270	.11	15	1
Mechanics, installers, and repairers	26,840	2.33	n.a.	n.a.
Millwrights	5,930	.52	11	2
Machinery maintenance workers	810	.07	16	1
Maintenance repairers, general utility	12,770	1.11	7	8
Automotive mechanics	390	.03	15	1
Bus and truck mechanics and diesel engine specialists	360	.03	19	1
Mobile heavy equipment mechanics, except engines	2,370	.21	9	4
All other electrical and electronic equipment mechanics, installers, and repairers	200	.02	35	(³)
Heating, air conditioning, and refrigeration mechanics and installers	2,440	.21	23	1
Riggers	180	.02	40	(³)
All other mechanics, installers, and repairers	1,390	.12	n.a.	n.a.
Construction trades workers, except material moving	449,260	39.07	n.a.	n.a.
Carpenters	319,410	27.78	1	75
Ceiling tile installers and acoustical carpenters	1,160	.10	43	(³)
Drywall installers	7,850	.68	10	4
Tapers	1,920	.17	14	2
Lathers	450	.04	46	(³)
Electricians	8,770	.76	10	5
Brickmasons	19,210	1.67	6	10
Stonemasons	580	.05	26	(³)
Concrete and terrazzo finishers	22,530	1.96	6	12
Reinforcing metal workers	4,010	.35	10	2
Plasterers and stucco masons	710	.06	26	(³)
Painters and paperhangers, construction and maintenance	14,480	1.26	6	9
Plumbers, pipefitters, and steamfitters	13,740	1.20	10	5
Pipelaying fitters	490	.04	35	(³)
Pipelayers	820	.07	28	(³)
Carpet installers	240	.02	37	(³)
Air hammer operators	350	.03	24	(³)
Pile driving operators	150	.01	29	(³)
Paving, surfacing, and tamping equipment operators	2,040	.18	19	1
Insulation workers	1,890	.16	22	(³)
Sheet metal duct installers	500	.04	32	(³)
Roofers	4,800	.42	12	3
Glaziers	210	.02	49	(³)
Structural metal workers	14,830	1.29	8	5
Fence erectors	690	.06	45	(³)
All other construction trades workers	7,430	.65	12	2
Earth drillers, except oil and gas	390	.03	42	(³)
All other extractive workers, except helpers	240	.02	46	(³)

See footnotes at end of table.

Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 15)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Precision metal workers	4,490	0.39	n.a.	n.a.
Sheet- metal workers	2,830	.25	15	1
Boilermakers	1,540	.13	25	(³)
All other precision metal workers	120	.01	n.a.	n.a.
Precision woodworkers	7,000	.61	n.a.	n.a.
Cabinetmakers and bench carpenters	7,000	.61	9	4
Machine setters, set-up operators, and tenders, except metal and plastic	2,580	.22	n.a.	n.a.
Sawing machine operators and tenders	190	.02	38	(³)
Woodworking machine operators and tenders, except sawing	140	.01	38	(³)
Crushing, grinding, mixing, and blending machine operators and tenders	210	.02	34	(³)
All other machine setters and set-up operators, except metal and plastic	1,740	.15	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	300	.03	n.a.	n.a.
Precision assemblers, metal	720	.06	n.a.	n.a.
Fitters, structural metal, precision	560	.05	36	(³)
All other precision assemblers, metal	160	.01	47	(³)
Other hand workers, nec	5,340	.46	n.a.	n.a.
Welders and cutters	5,180	.45	11	3
All other hand workers, nec	160	.01	n.a.	n.a.
Motor vehicle operators	15,440	1.34	n.a.	n.a.
Truck drivers, heavy or tractor trailer	8,080	.70	6	8
Truck drivers, light, include delivery and route workers	6,680	.58	6	8
All other motor vehicle operators	680	.06	22	(³)
All other transportation and motor vehicle operators	220	.02	32	(³)
Material moving equipment operators	17,980	1.56	n.a.	n.a.
Excavating and loading machine operators	1,320	.11	15	1
Dragline operators	120	.01	31	(³)
Grader, dozer, and scraper operators	2,330	.20	14	2
Hoist and winch operators	300	.03	21	(³)
Crane and tower operators	1,250	.11	13	1
Industrial truck and tractor operators	380	.03	22	(³)
Operating engineers	11,890	1.03	6	10
All other material moving equipment operators	390	.03	22	(³)
Helpers - mechanics and repairers	2,110	.18	16	2
Helpers - brick and stone masons, and hard tile setters	11,430	.99	7	6
Helpers - carpenters and related	116,700	10.15	2	41
Helpers - electricians and powerline transmission installers	860	.07	33	(³)
Helpers - painters, paperhangers, plasterers, and stucco masons	4,330	.38	10	2
Helpers - plumbers, pipefitters, and steamfitters	2,720	.24	13	2
Helpers - roofers	1,270	.11	20	1
Helpers - all other construction trades	8,390	.73	10	2
Freight, stock, and material movers, hand	3,570	.31	13	3
All other helpers, laborers, and material movers, hand	66,420	5.78	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	750	.07	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 16)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	779,470	100.00	--	--
Managerial and administrative occupations	43,650	5.60	n.a.	n.a.
Financial managers	7,170	.92	4	28
Personnel, training, and labor relations managers	750	.10	8	5
Purchasing managers	1,070	.14	10	5
Marketing, advertising, and public relations managers	650	.08	13	3
Administrative services managers	990	.13	10	4
Construction managers	21,690	2.78	3	52
General managers and top executives	8,310	1.07	4	24
All other managers and administrators	3,020	.39	16	4
Professional, paraprofessional, and technical occupations	57,070	7.32	n.a.	n.a.
Management support workers	22,980	2.95	n.a.	n.a.
Accountants, auditors, and other financial specialists	5,150	.66	n.a.	n.a.
Accountants and auditors	4,340	.56	5	17
Budget analysts	320	.04	16	1
All other financial specialists	490	.06	40	1
Purchasing agents, except wholesale and retail trade, and farm products	2,400	.31	8	9
Personnel, training, and labor relations specialists	550	.07	15	2
Cost estimators	11,350	1.46	3	35
Construction and building inspectors	1,880	.24	25	2
Compliance officers and enforcement inspectors, except construction	200	.03	19	1
All other management support workers	1,450	.19	19	2
Engineers	22,590	2.90	n.a.	n.a.
Mining engineers, including mine safety	160	.02	35	(³)
Civil engineers, including traffic	12,230	1.57	17	14
Electrical and electronic engineers	2,540	.33	18	1
Industrial engineers, except safety	1,030	.13	26	1
Safety engineers, except mining	370	.05	10	3
Mechanical engineers	3,370	.43	17	2
All other engineers	2,890	.37	n.a.	n.a.
Architects, except landscape and marine	130	.02	26	(³)
Surveying and mapping scientists	920	.12	10	3
Engineering and related technicians and technologists	6,980	.90	n.a.	n.a.
Civil engineering technicians and technologists	920	.12	14	2
Electrical and electronic engineering technicians and technologists	380	.05	24	(³)
Mechanical engineering technicians and technologists	340	.04	23	(³)
Drafters	2,970	.38	12	4
Surveying and mapping technicians and technologists	1,440	.18	12	3
All other engineering and related technicians and technologists	930	.12	n.a.	n.a.
Computer scientists and related workers	1,700	.22	n.a.	n.a.
Systems analysts, electronic data processing	650	.08	20	1
Computer programmers	810	.10	19	3
Computer programmer aides	240	.03	15	1
All other professional, paraprofessional, and technical workers	1,770	.23	n.a.	n.a.
Sales and related occupations	2,210	.28	n.a.	n.a.

See footnotes at end of table.

Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 16)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, sales and related workers	270	0.03	21	1
Sales engineers	1,050	.13	14	3
Sales representatives, scientific and related products and services, except retail	130	.02	26	(³)
Sales representatives, except scientific and related products or services and retail	460	.06	12	1
All other sales and related workers	300	.04	30	1
Clerical and administrative support occupations	57,510	7.38	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	2,420	.31	7	12
Secretaries	13,470	1.73	3	40
Stenographers	140	.02	18	1
Receptionists and information clerks	1,200	.15	7	8
Typists	2,150	.28	12	6
Typists, word processing equipment	1,200	.15	20	2
Personnel clerks, except payroll and timekeeping	380	.05	12	2
File clerks	590	.08	17	2
Procurement clerks	500	.06	30	1
Bookkeeping, accounting, and auditing clerks	10,620	1.36	3	39
Payroll and timekeeping clerks	4,740	.61	4	24
Billing, cost and rate clerks	540	.07	9	4
General office clerks	11,700	1.50	5	31
Electronic data processing and other office machine operators	3,050	.39	n.a.	n.a.
Billing, posting, and calculating machine operators	200	.03	47	1
Computer operators, except peripheral equipment	1,110	.14	18	4
Data entry keyers, except composing	1,160	.15	20	3
All other office machine operators	580	.07	n.a.	n.a.
Switchboard operators	420	.05	8	3
Material recording, scheduling, dispatching, and distributing workers	3,810	.49	n.a.	n.a.
Dispatchers, except police, fire, and ambulance	620	.08	8	4
Production, planning, and expediting clerks	950	.12	24	2
Weighers, measurers, checkers, and samplers, recordkeeping	400	.05	12	2
Stock clerks, stockroom, warehouse or storage yard	1,110	.14	18	4
Traffic, shipping, and receiving clerks	610	.08	28	1
All other material recording, scheduling, and distributing workers	120	.02	24	1
All other clerical and administrative support workers	580	.07	n.a.	n.a.
Service occupations	4,570	.59	n.a.	n.a.
First-line supervisors and manager/supervisors, service	390	.05	21	1
Crossing guards	710	.09	12	2
Guards and watch guards	1,140	.15	20	2
All other protective service workers	240	.03	33	(³)
Cleaning and building service workers, except private households	1,770	.23	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	1,580	.20	7	7
All other cleaning and building service workers, except private households	190	.02	n.a.	n.a.
All other service workers	320	.04	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	2,110	.27	n.a.	n.a.

See footnotes at end of table.

Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 16)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Gardeners and groundskeepers, except farm	1,600	0.21	17	3
All other agriculture, forestry, fishing, and related workers	510	.07	35	(³)
Production, construction, operating, maintenance, and material handling occupations	612,350	78.56	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	41,860	5.37	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	2,310	.30	8	8
First-line supervisors and manager/supervisors - construction trades and extractive workers	33,100	4.25	2	49
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	1,250	.16	11	4
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	2,850	.37	8	4
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	2,350	.30	10	3
Precision inspectors, testers, and graders	690	.09	27	1
All other inspectors, testers and related occupations	630	.08	n.a.	n.a.
Mechanics, installers, and repairers	59,860	7.68	n.a.	n.a.
Millwrights	4,100	.53	14	2
Machinery maintenance workers	2,850	.37	7	8
Maintenance repairers, general utility	7,010	.90	8	13
Automotive mechanics	2,460	.32	7	8
Bus and truck mechanics and diesel engine specialists	3,830	.49	6	11
Mobile heavy equipment mechanics, except engines	14,470	1.86	3	31
Telephone and cable TV line installers and repairers	13,830	1.77	12	4
Electrical powerline installers and repairers	5,880	.75	18	1
All other electrical and electronic equipment mechanics, installers, and repairers	550	.07	30	1
Riggers	3,880	.50	36	1
All other mechanics, installers, and repairers	1,000	.13	n.a.	n.a.
Construction trades workers, except material moving	149,520	19.18	n.a.	n.a.
Carpenters	26,750	3.43	4	21
Lathers	140	.02	36	(³)
Electricians	9,780	1.25	13	4
Brickmasons	1,720	.22	13	3
Stonemasons	390	.05	25	1
Concrete and terrazzo finishers	12,010	1.54	5	15
Reinforcing metal workers	3,380	.43	13	4
Painters and paperhangers, construction and maintenance	1,610	.21	14	2
Plumbers, pipefitters, and steamfitters	22,100	2.84	11	6
Pipelayer fitters	1,450	.19	19	1
Pipelayers	29,970	3.84	5	19
Septic tank servicers and sewer pipe cleaners	100	.01	49	(³)
Air hammer operators	5,640	.72	11	8
Pile driving operators	2,290	.29	16	3
Paving, surfacing, and tamping equipment operators	14,740	1.89	5	12
Rail-track laying and maintenance equipment operators	1,620	.21	28	1

See footnotes at end of table.

Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 16)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Insulation workers	1,450	0.19	24	1
Sheet metal duct installers	360	.05	42	(³)
Structural metal workers	5,780	.74	14	3
Fence erectors	1,130	.14	18	1
All other construction trades workers	7,110	.91	13	3
Earth drillers, except oil and gas	2,250	.29	15	3
Blasters and explosives workers	1,250	.16	22	2
All other extractive workers, except helpers	1,120	.14	32	(³)
Precision metal workers	5,840	.75	n.a.	n.a.
Machinists	600	.08	24	1
Boilermakers	4,750	.61	15	2
All other precision metal workers	490	.06	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic	4,860	.62	n.a.	n.a.
Crushing, grinding, mixing, and blending machine operators and tenders	3,520	.45	12	6
All other machine setters and set-up operators, except metal and plastic	700	.09	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	640	.08	n.a.	n.a.
Precision assemblers, metal	2,170	.28	n.a.	n.a.
Fitters, structural metal, precision	2,170	.28	34	1
Other hand workers, nec	14,220	1.82	n.a.	n.a.
Welders and cutters	12,780	1.64	9	15
Solderers and brazers	90	.01	46	(³)
All other hand workers, nec	1,350	.17	n.a.	n.a.
Plant and system workers	1,540	.20	n.a.	n.a.
Stationary engineers	160	.02	41	(³)
All other plant and system operators	1,380	.18	12	3
Motor vehicle operators	57,700	7.40	n.a.	n.a.
Truck drivers, heavy or tractor trailer	49,970	6.41	2	52
Truck drivers, light, include delivery and route workers	6,540	.84	6	13
All other motor vehicle operators	1,190	.15	25	1
All other transportation and motor vehicle operators	810	.10	31	1
Material moving equipment operators	123,050	15.79	n.a.	n.a.
Excavating and loading machine operators	22,520	2.89	4	28
Dragline operators	2,620	.34	10	7
Dredge operators and dipper tenders	760	.10	31	1
Grader, dozer, and scraper operators	43,730	5.61	3	40
Hoist and winch operators	1,670	.21	22	2
Crane and tower operators	4,280	.55	12	8
Industrial truck and tractor operators	1,860	.24	27	2
Pump operators	340	.04	27	1
Operating engineers	43,790	5.62	3	32
All other material moving equipment operators	1,480	.19	13	2
Helpers - mechanics and repairers	6,260	.80	7	15
Helpers - brick and stone masons, and hard tile setters	960	.12	25	1
Helpers - carpenters and related	10,940	1.40	8	10
Helpers - electricians and powerline transmission installers	3,240	.42	19	1
Helpers - plumbers, pipefitters, and steamfitters	7,220	.93	10	5
Helpers - all other construction trades	14,950	1.92	7	8
Helpers - extractive workers	700	.09	25	(³)
Freight, stock, and material movers, hand	2,670	.34	15	3
All other helpers, laborers, and material movers, hand	97,780	12.54	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	260	.03	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	2,394,100	100.00	—	—
Managerial and administrative occupations	117,890	4.92	n.a.	n.a.
Financial managers	29,530	1.23	2	20
All other administrative managers	700	.03	n.a.	n.a.
Construction managers	66,960	2.80	1	34
General managers and top executives	17,930	.75	3	10
All other managers and administrators	2,770	.12	n.a.	n.a.
Professional, paraprofessional, and technical occupations	100,580	4.20	n.a.	n.a.
Management support workers	75,880	3.17	n.a.	n.a.
Accountants, auditors, and other financial specialists	11,150	.47	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	7,120	.30	3	5
Cost estimators	56,780	2.37	1	29
All other management support workers	830	.03	n.a.	n.a.
Engineers	8,640	.36	n.a.	n.a.
Electrical and electronic engineers	2,940	.12	10	1
Mechanical engineers	3,890	.16	6	2
All other engineers	1,810	.08	n.a.	n.a.
Surveying and mapping scientists	360	.02	14	(³)
Engineering and related technicians and technologists	14,600	.61	n.a.	n.a.
Electrical and electronic engineering technicians and technologists	3,540	.15	15	1
Drafters	10,060	.42	3	5
All other engineering and related technicians and technologists	1,000	.04	n.a.	n.a.
All other professional, paraprofessional, and technical workers	1,100	.05	n.a.	n.a.
Sales and related occupations	39,960	1.67	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	430	.02	14	(³)
Sales engineers	4,120	.17	6	2
Sales representatives, scientific and related products and services, except retail	280	.01	28	(³)
Sales representatives, except scientific and related products or services and retail	31,200	1.30	3	12
All other sales and related workers	3,930	.16	10	1
Clerical and administrative support occupations	229,160	9.57	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,310	.05	9	1
Secretaries	74,220	3.10	1	39
Receptionists and information clerks	880	.04	14	1
Typists	7,130	.30	3	5
Typists, word processing equipment	1,600	.07	7	1
Bookkeeping, accounting, and auditing clerks	54,070	2.26	1	33
Payroll and timekeeping clerks	12,340	.52	2	11
General office clerks	55,920	2.34	1	27
Electronic data processing and other office machine operators	1,620	.07	n.a.	n.a.
Material recording, scheduling, dispatching, and distributing workers	18,230	.76	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	16,720	.70	2	9
All other material recording, scheduling, and distributing workers	1,510	.06	n.a.	n.a.
All other clerical and administrative support workers	1,840	.08	n.a.	n.a.
Service occupations	9,300	.39	n.a.	n.a.

See footnotes at end of table.

Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC. 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Guards and watch guards	570	0.02	31	(³)
All other protective service workers	400	.02	n.a.	n.a.
Cleaning and building service workers, except private households	7,680	.32	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	6,920	.29	5	5
All other cleaning and building service workers, except private households	760	.03	27	(³)
All other service workers	650	.03	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	3,050	.13	n.a.	n.a.
Gardeners and groundskeepers, except farm	2,780	.12	10	1
All other agriculture, forestry, fishing, and related workers	270	.01	43	(³)
Production, construction, operating, maintenance, and material handling occupations	1,894,160	79.12	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	84,540	3.53	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	890	.04	14	(³)
First-line supervisors and manager/supervisors - construction trades and extractive workers	82,480	3.45	1	32
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand	320	.01	23	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	850	.04	n.a.	n.a.
Inspectors and related occupations	1,200	.05	n.a.	n.a.
Mechanics, installers, and repairers	176,900	7.39	n.a.	n.a.
Millwrights	10,040	.42	6	1
Machinery maintenance workers	420	.02	30	(³)
Maintenance repairers, general utility	19,110	.80	4	7
Automotive mechanics	1,960	.08	5	2
Bus and truck mechanics and diesel engine specialists	1,980	.08	6	1
Mobile heavy equipment mechanics, except engines	3,810	.16	6	2
Telephone and cable TV line installers and repairers	12,620	.53	11	1
Electric home appliance and power tool repairers	1,180	.05	20	(³)
Electrical powerline installers and repairers	6,650	.28	15	(³)
All other electrical and electronic equipment mechanics, installers, and repairers	2,910	.12	18	(³)
Heating, air conditioning, and refrigeration mechanics and installers	93,610	3.91	2	9
Elevator installers and repairers	12,060	.50	8	1
Riggers	1,720	.07	13	(³)
Installers and repairers, manufactured buildings, mobile homes, and travel trailers	560	.02	25	(³)
All other mechanics, installers, and repairers	8,270	.35	n.a.	n.a.
Construction trades workers, except material moving	1,105,570	46.18	n.a.	n.a.
Carpenters	95,210	3.98	2	11
Ceiling tile installers and acoustical carpenters	14,560	.61	6	2
Drywall installers	50,510	2.11	3	4
Tapers	20,500	.86	4	3
Lathers	10,000	.42	6	1
Electricians	231,820	9.68	1	12
Brickmasons	67,430	2.82	2	8

See footnotes at end of table.

Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Stonemasons	6,790	0.28	8	1
Tile setters, hard	13,230	.55	6	2
Concrete and terrazzo finishers	53,170	2.22	2	8
Reinforcing metal workers	12,260	.51	6	2
Plasterers and stucco masons	18,230	.76	5	2
Painters and paperhangers, construction and maintenance	106,840	4.46	1	9
Plumbers, pipefitters, and steamfitters	166,370	6.95	2	13
Pipelaying fitters	480	.02	23	(³)
Pipelayers	3,470	.14	7	1
Septic tank servicers and sewer pipe cleaners	260	.01	46	(³)
Carpet installers	11,500	.48	7	1
Floor layers, except carpet, wood, and hard tiles	5,210	.22	9	1
Floor sanding machine operators	2,330	.10	13	(³)
Air hammer operators	3,430	.14	7	1
Pile driving operators	650	.03	26	(³)
Paving, surfacing, and tamping equipment operators	12,160	.51	4	2
Insulation workers	39,080	1.63	4	3
Sheet metal duct installers	1,590	.07	19	(³)
Roofers	83,380	3.48	2	7
Glaziers	20,170	.84	4	2
Structural metal workers	29,660	1.24	4	3
Fence erectors	12,230	.51	5	1
All other construction trades workers	13,050	.55	6	2
Earth drillers, except oil and gas	6,620	.28	5	2
Blasters and explosives workers	490	.02	18	(³)
All other extractive workers, except helpers	350	.01	31	(³)
Precision metal workers	84,330	3.52	n.a.	n.a.
Sheet-metal workers	77,580	3.24	3	8
Boilermakers	5,640	.24	11	1
All other precision metal workers	1,110	.05	n.a.	n.a.
Precision woodworkers	4,280	.18	n.a.	n.a.
Cabinetmakers and bench carpenters	4,280	.18	11	(³)
Precision workers, nec	600	.03	29	(³)
Machine setters, set-up operators, and tenders, metal and plastic	240	.01	n.a.	n.a.
Machine tool cutting operators and tenders, metal and plastic	240	.01	30	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	12,760	.53	n.a.	n.a.
Crushing, grinding, mixing, and blending machine operators and tenders	2,510	.10	11	1
All other machine setters and set-up operators, except metal and plastic	9,290	.39	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	960	.04	n.a.	n.a.
Precision assemblers, metal	3,020	.13	n.a.	n.a.
Fitters, structural metal, precision	2,690	.11	10	(³)
All other precision assemblers, metal	330	.01	41	(³)
Other hand workers, nec	13,730	.57	n.a.	n.a.
Welders and cutters	11,120	.46	5	3
Carpet cutters, diagrammers, and seamers	800	.03	21	(³)
All other hand workers, nec	1,810	.08	n.a.	n.a.
Motor vehicle operators	37,790	1.58	n.a.	n.a.
Truck drivers, heavy or tractor trailer	14,660	.61	4	4
Truck drivers, light, include delivery and route workers	23,130	.97	2	12
Material moving equipment operators	58,120	2.43	n.a.	n.a.
Excavating and loading machine operators	12,980	.54	4	4
Dragline operators	490	.02	16	(³)
Grader, dozer, and scraper operators	16,280	.68	4	5
Hoist and winch operators	640	.03	15	(³)

See footnotes at end of table.

Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 17)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Crane and tower operators	2,600	0.11	8	1
Industrial truck and tractor operators	4,230	.18	7	1
Pump operators	1,000	.04	16	(³)
Operating engineers	19,350	.81	3	5
All other material moving equipment operators	550	.02	20	(³)
Helpers - mechanics and repairers	5,250	.22	7	2
Helpers - brick and stone masons, and hard tile setters	56,730	2.37	2	8
Helpers - carpenters and related	30,120	1.26	3	5
Helpers - electricians and powerline transmission installers	46,310	1.93	4	4
Helpers - painters, paperhangers, plasterers, and stucco masons	21,650	.90	4	4
Helpers - plumbers, pipefitters, and steamfitters	43,990	1.84	3	7
Helpers - roofers	19,020	.79	4	3
Helpers - all other construction trades	11,040	.46	6	2
Helpers - extractive workers	1,360	.06	12	(³)
Freight, stock, and material movers, hand	13,240	.55	4	5
All other helpers, laborers, and material movers, hand	54,220	2.26	3	7
All other production, construction, operating, maintenance, and material handling occupations	690	.03	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Finance, Insurance, and Real Estate

In 1984, finance, insurance, and real estate employed over 5.6 million workers or 22 percent of all workers in the industries surveyed. The banking and insurance industries, with 2.9 million workers, accounted for more than half the total in this industry division. The real estate industry employed over 1 million or 18.7 percent; the remaining 30 percent were distributed among the other five industries in the group.

Occupational employment for these industries is shown in tables 13 through 20.

Banks and credit agencies

This industry group (SIC's 60 and 61) includes establishments engaged in accepting deposits or issuing shares and extending credit in the form of loans. In other words, they serve as intermediaries between primary lenders and borrowers.

In 1984, these establishments employed over 2.3 million workers, accounting for 9 percent of total employment in all the industries surveyed. Banks employed 71 percent of the workers in this industry group.

As shown in table 13, banking institutions employed nearly 1.2 million clerical workers in 1984, or 70 percent of the workers in this industry. The remaining employment in banking institutions was distributed as follows: Professional, paraprofessional, and technical workers, 13 percent; managerial and administrative workers, 12 percent; service and sales workers, 2 percent each; and production and agricultural workers, less than 1 percent.

The 1984 data includes 4,230 first-line sales supervisors and 5,900 cashiers in the sales group. These were classified in the managerial and clerical groups in 1981. The banking industry also employed 2,840 real estate appraisers, who were reclassified from the professional to the sales category in 1984. Loan officers and counselors, numbering 59,220, were classified in the professional group in 1984, but were included in the managerial category in 1981.

Employment changes between 1981 and 1984 for each 3-digit industry making up banks and credit agencies (SIC's 601-616) are listed in text table 4.

The relatively high employment growth rates for savings and loans and nondeposit trust companies may have been due to financial deregulation, which allowed many of these establishments to offer consumer transac-

Text table 4. Banks and credit agencies: Employment by industry, 1981 and 1984

Industry	SIC code	Employment		Percent change, 1981-84
		1981	1984	
Federal Reserve banks . . .	601	24,480	23,650	-3.4
Commercial and stock savings banks	602	1,474,160	1,511,610	2.5
Mutual savings banks	603	74,350	76,930	3.5
Nondeposit trust companies	604	2,490	3,780	51.8
Establishments performing functions closely related to banking	605	42,280	51,550	21.9
Rediscount and financing institutions	611	3,090	4,550	47.2
Savings and loans	612	264,980	322,710	21.8
Agricultural credit institutions	613	17,330	18,670	7.7
Personal credit institutions	614	205,620	202,300	-1.6
Business credit institutions	615	32,850	40,660	23.8
Mortgage bankers and brokers	616	61,860	100,770	62.9

tion accounts and interest-bearing checking accounts on a competitive basis with commercial banks. Also, a portion of the rise in employment in the mortgage banking and brokering industry may have been due to the decline in interest rates and the increased demand for housing during 1983 and 1984.

The five largest occupations in the banking industry are listed in the tabulation below. They made up nearly 43 percent of total employment in the industry.

	Employment, 1984	Percent of industry employment, 1984	Percent change in employment, 1981-84
Tellers	374,350	22.4	2.6
General office clerks	109,830	6.6	-8.5
Secretaries	88,800	5.3	14.2
First-line supervisors, clerical	73,200	4.4	(¹)
Bookkeeping, accounting, and auditing clerks	67,760	4.1	12.3

¹ Because of the changes in the survey classification system, data for 1981 and 1984 are not comparable.

The number of secretaries employed by the banking industry increased by 14.2 percent between 1981 and 1984. Bookkeeping, accounting, and auditing clerks increased

by 12.3 percent and tellers, by 2.6 percent. Employment of general office clerks declined by 8.5 percent during this period.

Clerical workers were also predominant in credit agencies other than banks, accounting for two-thirds of total employment in this industry (table 14). The remaining employment was distributed as follows: Managerial and administrative workers, 13.5 percent; professional, paraprofessional, and technical workers, 13.2 percent; sales workers, 6 percent; and service workers, 1 percent.

In 1984, the sales group included 4,430 real estate appraisers, 4,800 first-line sales supervisors, and 6,920 cashiers. These occupations were reclassified from professional, managerial, and clerical categories, respectively, used in 1981. Loan officers and counselors, numbering 25,000 in 1984, were reclassified from the managerial category to the professional group.

The tabulation below lists the five most populous occupations in credit agencies, excluding banks. Together, they constituted 44.7 percent of total industry employment.

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Tellers	129,210	18.7	31.3
Loan and credit clerks .	67,550	9.8	(¹)
Financial managers . . .	46,140	6.7	(¹)
General office clerks . .	35,960	5.2	1.0
Bookkeeping, account- ing, and auditing clerks	29,420	4.3	14.9

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

The number of tellers employed by credit agencies increased by over 31 percent between 1981 and 1984. Bookkeeping, accounting, and auditing clerks increased by about 15 percent, while the number of general office clerks remained about the same.

Security and commodity brokers and investment services

Establishments in this industry group (SIC's 62 and 67) engage in the underwriting, purchase, sale, or brokerage of securities and commodities; exchange of securities and commodities; and investment trusts, including investment, holding, and commodity trading companies.

In 1984, security and commodity brokers and services employed 339,150, or 71 percent of the workers in this industry group. Holding and other investment offices accounted for the remaining employment, with 140,370 workers.

As shown in tables 15 and 16, clerical workers, the largest occupational group in these industries, accounted for 44 percent of total employment in security and commodity brokers and 39 percent of employment

in holding and other investment offices. Other occupational groups with large numbers of workers in these industries were sales workers (34 percent) and professional, paraprofessional, and technical workers (12 percent) in security and commodity brokers and services; and professional, paraprofessional, and technical workers (24 percent), and managerial and administrative workers (19 percent) in holding and other investment offices.

Security and commodity brokers (SIC 62) employed 3,310 cashiers in 1984. Cashiers, classified as a sales occupation in 1984, were previously classified in the clerical group. First-line supervisors (7,130 in 1984) were reclassified to the sales from the managerial group. For holding and other investment companies (SIC 67), 1984 data included 3,640 first-line sales supervisors and 860 cashiers in the sales category previously classified in the managerial and clerical groups, respectively.

The five most populous occupations in security and commodity brokers and services, which accounted for 57.5 percent of industry employment, are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Sales agents— securities, com- modities, and finan- cial services	95,010	28.0	(¹)
Brokerage clerks	44,050	13.0	196.0
Secretaries	31,920	9.4	21.2
General office clerks .	13,940	4.1	1.9
General managers and top executives	10,150	3.0	(¹)

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

This industry employed over 44,000 brokerage clerks in 1984, a 196-percent increase from 1981. There was also a 21-percent increase in the employment of secretaries during the period. Employment of general office clerks increased by about 2 percent.

The five largest occupations in holding and other investment offices, which made up 39 percent of industry employment, are shown below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Secretaries	16,970	12.1	20.6
Financial managers . .	10,960	7.8	(¹)
Bookkeeping, account- ing, and auditing clerks	9,440	6.7	52.3
Accountants and auditors	9,300	6.6	14.4
General office clerks .	7,850	5.6	11.0

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Between 1981 and 1984, holding and other investment offices increased employment of bookkeeping, accounting, and auditing clerks by 5.2 percent. Employment of secretaries increased by 20.6 percent; the number of accountants and auditors increased by 14.4 percent; and general office clerks increased by 11 percent.

Insurance and real estate

This industry group (SIC's 63-66) includes insurance carriers of all types; agents and brokers dealing in insurance and organizations offering services to insurance companies and policyholders; real estate operators; owners and lessors of real property; developers, agents, and brokers; and establishments regularly engaged in any combination of insurance, real estate, loans, and law where no one of these activities dominates the business.

In 1984, these establishments employed 2.8 million workers or 10.8 percent of the workers covered by the survey. Insurance carriers accounted for 44 percent of the employment in this industry group. The real estate industry employed 37.5 percent of the workers in this industry group. The remaining employment was distributed as follows: Insurance agents, brokers, and services, 18 percent; and combined real estate, insurance, loan, and law offices, less than 1 percent.

As shown in table 17, clerical workers, numbering 655,060, accounted for 53 percent of total employment in the insurance carriers industry. Other occupational groups with large numbers of workers were professional, paraprofessional, and technical workers and sales workers, with 18.9 and 18.1 percent, respectively.

The sales occupational category included 26,800 first-line sales supervisors in 1984. This occupation was previously classified under the managerial group. Title searchers, numbering 4,500, were shifted from the clerical to the professional group in the 1984 survey.

The five most populous occupations in the insurance carriers industry, which together accounted for about 38 percent of total industry employment, are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Sales agents and placers, insurance . . .	187,650	15.3	6.5
General office clerks . .	91,460	7.4	-1.1
Insurance policy processing clerks	71,080	5.8	(¹)
Insurance adjusters, examiners, and in- vestigators	67,740	5.5	(¹)
Underwriters	49,700	4.0	9.8

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Employment of underwriters increased by almost 10 percent between 1981 and 1984. Insurance sales agents and placers increased by 6.5 percent while general office clerks declined slightly.

Clerical workers also accounted for more than half—53 percent—of total employment in insurance agents, brokers, and services (table 18). Sales workers, the second largest occupational group, accounted for 25 percent. Professional, paraprofessional, and technical workers made up 14 percent and managerial and administrative workers made up 6 percent.

Changes in the OES structure resulted in the reclassification of first-line sales supervisors, numbering 18,730 in 1984, from the managerial to the sales group in SIC 64.

The five largest occupations in insurance agents, brokers, and services are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Sales agents and placers, insurance ¹	107,230	20.9	78.7
Insurance policy processing clerks	63,860	12.5	(²)
Underwriters	35,860	7.0	49.0
Bookkeeping, account- ing, and auditing clerks	28,010	5.5	43.9
General office clerks .	26,870	5.2	-37.0

¹ Excludes the self-employed.

² Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Employment of insurance sales agents and placers increased by 78.7 percent between 1981 and 1984. The number of underwriters increased by 49 percent, and bookkeeping, accounting, and auditing clerks increased by 44 percent. Employment of general office clerks declined by 37 percent.

In real estate, clerical and service workers numbered 235,980 (22.3 percent of industry employment) and 223,380 (21.1 percent), respectively (table 19). These were followed by sales workers, 17.2 percent; production and related workers, 16.9 percent; and managerial and administrative workers, 11.1 percent.

In 1984, employment in the sales group included 34,870 first-line sales supervisors who were classified under the managerial group in 1981. Real estate appraisers, 10,920 in 1984, were shifted from the professional to the sales category. Title searchers, numbering 4,530 workers in 1984, were reclassified from the clerical to the professional group.

The five most populous occupations in the real estate industry are listed on the following page.

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Maintenance re- pairers, general utility	122,630	11.6	41.9
Janitors and cleaners, except maids and household cleaners ..	105,820	10.0	-8.4
Sales agents, real estate ¹	89,870	8.5	-.7
Gardeners and groundskeepers, except farm	75,260	7.1	15.9
Property and real estate managers and administrators	44,730	4.2	(²)

¹ Excludes the self-employed.

² Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Employment of maintenance repairers increased by

42 percent between 1981 and 1984. Gardeners and groundskeepers increased by 16 percent. Janitors and cleaners declined by 8.4 percent, while real estate sales agents declined slightly.

In combined real estate, insurance, loan, and law offices, sales workers made up 38.6 percent of industry employment and clerical workers accounted for 37.7 percent (table 20).

The five largest occupations in combined real estate, insurance, loan, and law offices are given below:

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Sales agents and placers, insurance	2,260	15.2
Sales agents, real estate	1,830	12.3
Secretaries	1,690	11.4
General office clerks	1,060	7.1
Brokers, real estate	920	6.2

Table 13. Banking: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 60)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,667,950	100.00	--	--
Managerial and administrative occupations	197,560	11.84	n.a.	n.a.
Financial managers	63,230	3.79	3	79
Personnel, training, and labor relations managers	7,040	.42	5	33
Purchasing managers	1,740	.10	8	15
Marketing, advertising, and public relations managers	6,150	.37	6	28
Administrative services managers	6,790	.41	15	15
Food service and lodging managers	250	.01	17	2
General managers and top executives	56,860	3.41	2	48
All other managers and administrators	55,500	3.33	2	32
Professional, paraprofessional, and technical occupations	220,450	13.22	n.a.	n.a.
Management support workers	163,580	9.81	n.a.	n.a.
Accountants, auditors, and other financial specialists	128,910	7.73	n.a.	n.a.
Underwriters	460	.03	27	2
Credit analysts	21,310	1.28	5	38
Loan officers and counselors	59,220	3.55	3	48
Accountants and auditors	25,000	1.50	4	45
Budget analysts	2,230	.13	7	10
All other financial specialists	20,690	1.24	8	23
Purchasing agents, except wholesale and retail trade, and farm products	1,320	.08	10	9
Personnel, training, and labor relations specialists	6,150	.37	5	19
Cost estimators	240	.01	16	1
Management analysts	2,760	.17	9	7
All other management support workers	24,200	1.45	10	14
Engineers	490	.03	16	1
Engineering and related technicians and technologists	440	.03	23	1
Computer scientists and related workers	27,280	1.64	n.a.	n.a.
Systems analysts, electronic data processing	10,540	.63	8	16
Computer programmers	13,400	.80	7	18
Computer programmer aides	3,340	.20	9	7
Mathematical scientists and related workers	10,820	.65	n.a.	n.a.
Operations and systems researchers and analysts, except computer	3,230	.19	10	6
Statisticians	900	.05	30	1
Financial analysts, statistical	4,490	.27	9	8
All other mathematical scientists	2,200	.13	n.a.	n.a.
Social scientists, including urban and regional planners	2,560	.15	n.a.	n.a.
Economists, including market research analysts	1,520	.09	7	5
All other social scientists	1,040	.06	38	1
Lawyers	1,670	.10	7	8
Law clerks	180	.01	11	2
Paralegal personnel	360	.02	14	2
All other legal assistants and technicians, except clerical	710	.04	34	2
Public relations specialists and publicity writers	3,960	.24	9	11
All other professional, paraprofessional, and technical workers	8,400	.50	n.a.	n.a.
Sales and related occupations	37,050	2.22	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	4,230	.25	9	8
Sales representatives and salespersons, services	24,680	1.48	n.a.	n.a.

See footnotes at end of table.

Table 13. Banking: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 60)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales agents and placers, insurance	650	0.04	21	2
Brokers, real estate	240	.01	25	1
Sales agents, real estate	280	.02	19	1
Appraisers, real estate	2,840	.17	11	8
Sales agents, securities, commodities, financial services	17,450	1.05	10	16
Sales agents, selected business services	810	.05	17	2
All other sales representatives and salespersons, service	2,410	.14	12	4
Cashiers	5,900	.35	14	8
All other sales and related workers	2,240	.13	n.a.	n.a.
Clerical and administrative support occupations	1,164,820	69.84	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	73,200	4.39	3	47
Tellers	374,350	22.44	1	89
New accounts clerks	58,880	3.53	2	67
Transit clerks	18,240	1.09	5	24
Loan interviewers	9,130	.55	6	19
Credit authorizers	2,400	.14	13	6
Credit checkers	11,030	.66	5	23
Loan and credit clerks	59,330	3.56	2	64
Adjustment clerks	18,010	1.08	6	21
Statement clerks	34,190	2.05	4	39
Brokerage clerks	5,720	.34	10	11
Insurance examining clerks	1,240	.07	10	6
Bill and account collectors	14,620	.88	5	24
Secretaries	88,800	5.32	2	75
Stenographers	3,500	.21	9	8
Receptionists and information clerks	11,750	.70	6	32
Typists	13,960	.84	7	19
Typists, word processing equipment	6,660	.40	7	19
Personnel clerks, except payroll and timekeeping	3,780	.23	6	20
Correspondence clerks	1,990	.12	17	3
File clerks	13,450	.81	5	24
Statistical clerks	2,260	.14	18	3
Bookkeeping, accounting, and auditing clerks	67,760	4.06	3	61
Payroll and timekeeping clerks	4,130	.25	6	21
Billing, cost and rate clerks	2,180	.13	16	4
General office clerks	109,830	6.58	2	43
Electronic data processing and other office machine operators	78,860	4.73	n.a.	n.a.
Billing, posting, and calculating machine operators	9,350	.56	9	12
Duplicating machine operators	1,380	.08	9	7
Mail machine operators, preparation and handling	1,850	.11	8	8
Computer operators, except peripheral equipment	17,080	1.02	4	28
Peripheral EDP equipment operators	6,830	.41	8	12
Data entry keyers, except composing	26,370	1.58	6	32
All other office machine operators	16,000	.96	6	14
Switchboard operators	9,700	.58	4	42
Mail clerks, except mail machine operators and postal service	7,750	.46	5	24
Messengers	14,030	.84	4	36
Material recording, scheduling, dispatching, and distributing workers	5,330	.32	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	2,700	.16	4	17
All other material recording, scheduling, and distributing workers	2,630	.16	23	3
All other clerical and administrative support workers	38,760	2.32	n.a.	n.a.
Service occupations	39,380	2.36	n.a.	n.a.

See footnotes at end of table.

Table 13. Banking: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 60)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, service	2,340	0.14	8	10
Guards and watch guards	12,650	.76	6	16
Food and beverage preparation and service workers	3,020	.18	10	7
Cleaning and building service workers, except private households	20,890	1.25	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	18,630	1.12	4	36
All other cleaning and building service workers, except private households	2,260	.14	n.a.	n.a.
All other service workers	480	.03	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	810	.05	n.a.	n.a.
Gardeners and groundskeepers, except farm	810	.05	17	3
Production, construction, operating, maintenance, and material handling occupations	7,880	.47	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	620	.04	n.a.	n.a.
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	170	.01	21	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	450	.03	n.a.	n.a.
Mechanics, installers, and repairers	3,560	.21	20	13
Maintenance repairers, general utility	3,060	.18	6	11
All other mechanics, installers, and repairers	500	.03	14	1
Construction trades workers, except material moving	190	.01	n.a.	n.a.
Electricians	190	.01	9	2
All other construction and extractive workers, except helpers	570	.03	n.a.	n.a.
Plant and system workers	430	.03	n.a.	n.a.
Motor vehicle operators	1,210	.07	n.a.	n.a.
Truck drivers, light, include delivery and route workers	640	.04	14	2
Taxi drivers and chauffeurs	570	.03	14	3
All other transportation and material moving equipment operators	340	.02	24	2
Freight, stock, and material movers, hand	380	.02	29	1
All other helpers, laborers, and material movers, hand	260	.02	25	1
All other production, construction, operating, maintenance, and material handling occupations	320	.02	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 14. Credit agencies, except banks: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 61)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	690,130	100.00	--	--
Managerial and administrative occupations	93,000	13.48	n.a.	n.a.
Financial managers	46,140	6.69	1	80
Personnel, training, and labor relations managers	2,430	.35	3	10
Purchasing managers	720	.10	4	4
Marketing, advertising, and public relations managers	2,870	.42	4	11
Administrative services managers	2,360	.34	6	6
General managers and top executives	22,660	3.28	3	26
All other managers and administrators	15,820	2.29	n.a.	n.a.
Professional, paraprofessional, and technical occupations	91,310	13.23	n.a.	n.a.
Management support workers	74,620	10.81	n.a.	n.a.
Accountants, auditors, and other financial specialists	65,860	9.54	n.a.	n.a.
Underwriters	2,160	.31	8	4
Credit analysts	20,010	2.90	3	31
Loan officers and counselors	25,000	3.62	3	20
Accountants and auditors	12,760	1.85	3	26
Budget analysts	650	.09	8	2
All other financial specialists	5,280	.77	5	9
Purchasing agents, except wholesale and retail trade, and farm products	480	.07	10	2
Personnel, training, and labor relations specialists	2,260	.33	4	6
Cost estimators	100	.01	26	(³)
Management analysts	760	.11	10	2
All other management support workers	5,160	.75	9	5
Computer scientists and related workers	8,310	1.20	n.a.	n.a.
Systems analysts, electronic data processing	3,240	.47	6	7
Computer programmers	4,100	.59	4	7
Computer programmer aides	970	.14	6	3
Mathematical scientists and related workers	2,460	.36	n.a.	n.a.
Operations and systems researchers and analysts, except computer	790	.11	10	2
Statisticians	130	.02	21	(³)
Financial analysts, statistical	1,460	.21	8	3
All other mathematical scientists	80	.01	n.a.	n.a.
Social scientists, including urban and regional planners	370	.05	n.a.	n.a.
Lawyers	1,140	.17	6	3
Law clerks	120	.02	13	1
Paralegal personnel	170	.02	9	1
All other legal assistants and technicians, except clerical	400	.06	24	1
Public relations specialists and publicity writers	1,980	.29	6	8
All other professional, paraprofessional, and technical workers	1,740	.25	n.a.	n.a.
Sales and related occupations	40,810	5.91	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	4,800	.70	5	5
Sales representatives and salespersons, services	28,140	4.08	n.a.	n.a.
Sales agents and placers, insurance	690	.10	13	1
Brokers, real estate	330	.05	29	1
Sales agents, real estate	940	.14	19	1
Appraisers, real estate	4,430	.64	6	9
Sales agents, securities, commodities, financial services	19,140	2.77	5	12

See footnotes at end of table.

Table 14. Credit agencies, except banks: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 61)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales agents, selected business services	670	0.10	18	1
All other sales representatives and salespersons, service	1,940	.28	10	2
Cashiers	6,920	1.00	5	10
All other sales and related workers	950	.14	n.a.	n.a.
Clerical and administrative support occupations	452,730	65.60	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	26,820	3.89	2	19
Tellers	129,210	18.72	1	48
New accounts clerks	27,610	4.00	2	25
Transit clerks	850	.12	8	2
Loan interviewers	7,020	1.02	5	7
Credit authorizers	860	.12	16	1
Credit checkers	8,360	1.21	4	15
Loan and credit clerks	67,550	9.79	2	61
Adjustment clerks	6,340	.92	12	5
Statement clerks	6,010	.87	4	10
Brokerage clerks	340	.05	14	1
Insurance examining clerks	1,720	.25	10	3
Bill and account collectors	15,500	2.25	3	18
Secretaries	29,160	4.23	2	43
Stenographers	1,270	.18	9	3
Receptionists and information clerks	7,790	1.13	3	21
Typists	5,230	.76	7	8
Typists, word processing equipment	2,580	.37	6	7
Personnel clerks, except payroll and timekeeping	1,170	.17	4	5
Correspondence clerks	760	.11	18	1
File clerks	5,110	.74	4	11
Statistical clerks	460	.07	17	1
Bookkeeping, accounting, and auditing clerks	29,420	4.26	2	46
Payroll and timekeeping clerks	1,870	.27	4	8
Billing, cost and rate clerks	1,510	.22	43	1
General office clerks	35,960	5.21	3	31
Electronic data processing and other office machine operators	15,230	2.21	n.a.	n.a.
Billing, posting, and calculating machine operators	1,810	.26	8	3
Duplicating machine operators	370	.05	7	2
Mail machine operators, preparation and handling	700	.10	12	2
Computer operators, except peripheral equipment	4,830	.70	4	11
Peripheral EDP equipment operators	770	.11	10	2
Data entry keyers, except composing	5,960	.86	7	9
All other office machine operators	790	.11	10	2
Switchboard operators	4,180	.61	3	17
Mail clerks, except mail machine operators and postal service	2,210	.32	4	6
Messengers	2,400	.35	5	9
Material recording, scheduling, dispatching, and distributing workers	1,360	.20	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	1,040	.15	5	4
All other material recording, scheduling, and distributing workers	320	.05	16	1
All other clerical and administrative support workers	6,870	1.00	n.a.	n.a.
Service occupations	8,960	1.30	n.a.	n.a.
First-line supervisors and manager/supervisors, service	630	.09	12	2
Guards and watch guards	1,050	.15	9	2
Food and beverage preparation and service workers	400	.06	18	1
Cleaning and building service workers, except private households	6,740	.98	n.a.	n.a.

See footnotes at end of table.

Table 14. Credit agencies, except banks: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 61)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Janitors and cleaners, except maids and housekeeping cleaners	6,160	0.89	4	15
All other cleaning and building service workers, except private households	580	.08	n.a.	n.a.
All other service workers	140	.02	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	430	.06	n.a.	n.a.
Gardeners and groundskeepers, except farm	430	.06	13	1
Production, construction, operating, maintenance, and material handling occupations	2,890	.42	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	290	.04	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	140	.02	24	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	150	.02	n.a.	n.a.
Mechanics, installers, and repairers	1,470	.21	35	4
Maintenance repairers, general utility	1,250	.18	10	3
All other mechanics, installers, and repairers	220	.03	24	(³)
Machine setters, set-up operators, operators and tenders	90	.01	22	(³)
Motor vehicle operators	220	.03	n.a.	n.a.
Truck drivers, light, include delivery and route workers	140	.02	35	(³)
Taxi drivers and chauffeurs	80	.01	27	(³)
All other transportation and material moving equipment operators	230	.03	25	(³)
Freight, stock, and material movers, hand	120	.02	23	(³)
All other helpers, laborers, and material movers, hand	170	.02	21	(³)
All other production, construction, operating, maintenance, and material handling occupations	300	.04	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.
n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 15. Security and commodity brokers and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 62)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	339,150	100.00	--	--
Managerial and administrative occupations	28,950	8.54	n.a.	n.a.
Financial managers	7,400	2.18	7	42
Personnel, training, and labor relations managers	520	.15	10	6
Purchasing managers	160	.05	16	3
Marketing, advertising, and public relations managers	970	.29	14	6
Administrative services managers	1,610	.47	31	4
General managers and top executives	10,150	2.99	9	29
All other managers and administrators	8,140	2.40	n.a.	n.a.
Professional, paraprofessional, and technical occupations	41,060	12.11	n.a.	n.a.
Management support workers	12,850	3.79	n.a.	n.a.
Accountants, auditors, and other financial specialists	8,980	2.65	n.a.	n.a.
Underwriters	230	.07	39	1
Credit analysts	540	.16	29	1
Accountants and auditors	5,640	1.66	11	17
Budget analysts	310	.09	19	2
All other financial specialists	2,260	.67	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	280	.08	23	2
Personnel, training, and labor relations specialists	510	.15	15	4
Management analysts	250	.07	26	1
All other management support workers	2,830	.83	n.a.	n.a.
Engineers	200	.06	46	1
Computer scientists and related workers	8,410	2.48	n.a.	n.a.
Systems analysts, electronic data processing	3,320	.98	24	7
Computer programmers	4,620	1.36	14	10
Computer programmer aides	470	.14	21	2
Mathematical scientists and related workers	8,440	2.49	n.a.	n.a.
Operations and systems researchers and analysts, except computer	1,160	.34	31	1
Financial analysts, statistical	6,800	2.01	11	14
All other mathematical scientists	480	.14	n.a.	n.a.
Social scientists, including urban and regional planners	3,660	1.08	n.a.	n.a.
Lawyers	930	.27	20	6
Law clerks	190	.06	33	1
Paralegal personnel	180	.05	29	1
All other legal assistants and technicians, except clerical	120	.04	27	1
Public relations specialists and publicity writers	280	.08	35	2
All other professional, paraprofessional, and technical workers	5,800	1.71	n.a.	n.a.
Sales and related occupations	115,370	34.02	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	7,130	2.10	6	40
Sales representatives and salespersons, services	100,340	29.59	n.a.	n.a.
Sales agents, securities, commodities, financial services	95,010	28.01	2	70
Sales agents, selected business services	1,630	.48	35	3
All other sales representatives and salespersons, service	3,700	1.09	18	3
Cashiers	3,310	.98	9	24
All other sales and related workers	4,590	1.35	n.a.	n.a.

See footnotes at end of table.

Table 15. Security and commodity brokers and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 62)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Clerical and administrative support occupations	150,040	44.24	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	6,520	1.92	8	17
New accounts clerks	720	.21	22	5
Transit clerks	230	.07	39	1
Loan and credit clerks	130	.04	49	(³)
Adjustment clerks	960	.28	29	2
Statement clerks	300	.09	35	1
Brokerage clerks	44,050	12.99	6	43
All other bank clerks	180	.05	n.a.	n.a.
Bill and account collectors	220	.06	34	1
Secretaries	31,920	9.41	5	72
Stenographers	380	.11	29	3
Receptionists and information clerks	3,330	.98	7	31
Typists	2,570	.76	11	9
Typists, word processing equipment	2,650	.78	10	13
Personnel clerks, except payroll and timekeeping	510	.15	11	4
Correspondence clerks	440	.13	35	1
File clerks	1,250	.37	13	5
Statistical clerks	350	.10	23	1
Bookkeeping, accounting, and auditing clerks	9,770	2.88	13	30
Payroll and timekeeping clerks	710	.21	11	7
Billing, cost and rate clerks	150	.04	46	1
General office clerks	13,940	4.11	9	32
Electronic data processing and other office machine operators	11,220	3.31	n.a.	n.a.
Billing, posting, and calculating machine operators	170	.05	28	1
Duplicating machine operators	550	.16	16	3
Mail machine operators, preparation and handling	350	.10	23	3
Computer operators, except peripheral equipment	2,950	.87	14	12
Peripheral EDP equipment operators	590	.17	15	3
Data entry keyers, except composing	4,890	1.44	11	14
All other office machine operators	1,720	.51	20	6
Switchboard operators	2,360	.70	7	22
Mail clerks, except mail machine operators and postal service	1,740	.51	9	8
Messengers	5,570	1.64	9	11
Material recording, scheduling, dispatching, and distributing workers	630	.19	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	330	.10	15	2
All other material recording, scheduling, and distributing workers	300	.09	32	1
All other clerical and administrative support workers	7,240	2.13	n.a.	n.a.
Service occupations	1,810	.53	n.a.	n.a.
First-line supervisors and manager/supervisors, service	140	.04	20	1
Guards and watch guards	680	.20	16	2
Food and beverage preparation and service workers	230	.07	40	1
Cleaning and building service workers, except private households	760	.22	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	630	.19	18	3
All other cleaning and building service workers, except private households	130	.04	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	100	.03	n.a.	n.a.

See footnotes at end of table.

Table 15. Security and commodity brokers and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 62)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Production, construction, operating, maintenance, and material handling occupations	1,820	0.54	n.a.	n.a.
Mechanics, installers, and repairers	940	.28	69	2
Maintenance repairers, general utility	340	.10	27	2
All other mechanics, installers, and repairers	600	.18	42	(³)
Precision production occupations	70	.02	47	(³)
Transportation equipment operators	170	.05	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	640	.19	n.a.	n.a.

Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 16. Holding and other investment offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 67)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	140,370	100.00	--	--
Managerial and administrative occupations	26,870	19.14	n.a.	n.a.
Financial managers	10,960	7.81	3	63
Personnel, training, and labor relations managers	1,030	.73	8	8
Purchasing managers	170	.12	16	3
Marketing, advertising, and public relations managers	1,130	.81	10	9
Administrative services managers	1,410	1.00	20	8
Food service and lodging managers	110	.08	35	1
General managers and top executives	7,400	5.27	4	35
All other managers and administrators	4,660	3.32	7	18
Professional, paraprofessional, and technical occupations	34,390	24.50	n.a.	n.a.
Management support workers	16,320	11.63	n.a.	n.a.
Accountants, auditors, and other financial specialists	11,730	8.36	n.a.	n.a.
Underwriters	130	.09	31	1
Credit analysts	170	.12	24	1
Loan officers and counselors	350	.25	23	2
Accountants and auditors	9,300	6.63	5	37
Budget analysts	380	.27	15	3
All other financial specialists	1,400	1.00	19	6
Purchasing agents, except wholesale and retail trade, and farm products	320	.23	18	3
Personnel, training, and labor relations specialists	1,070	.76	11	6
Management analysts	610	.43	37	2
All other management support workers	2,590	1.85	n.a.	n.a.
Engineers	1,650	1.18	30	5
Engineering and related technicians and technologists	700	.50	19	4
Physical scientists	380	.27	30	1
Life scientists	150	.11	44	(³)
Computer scientists and related workers	4,280	3.05	n.a.	n.a.
Systems analysts, electronic data processing	1,560	1.11	9	9
Computer programmers	2,310	1.65	8	10
Computer programmer aides	410	.29	15	2
Mathematical scientists and related workers	2,550	1.82	n.a.	n.a.
Operations and systems researchers and analysts, except computer	570	.41	43	1
Financial analysts, statistical	1,550	1.10	10	10
All other mathematical scientists	270	.19	n.a.	n.a.
Mathematical technicians	160	.11	46	(³)
Social scientists, including urban and regional planners	610	.43	n.a.	n.a.
Economists, including market research analysts	280	.20	18	2
All other social scientists	330	.24	38	1
Lawyers	1,900	1.35	8	12
Paralegal personnel	200	.14	16	2
All other legal assistants and technicians, except clerical	160	.11	n.a.	n.a.
Health practitioners, technologists, technicians, and related health workers	290	.21	n.a.	n.a.
Public relations specialists and publicity writers	550	.39	21	4
All other professional, paraprofessional, and technical workers	4,650	3.31	n.a.	n.a.
Sales and related occupations	9,380	6.68	n.a.	n.a.

See footnotes at end of table.

Table 16. Holding and other investment offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 67)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, sales and related workers	3,640	2.59	6	23
Sales representatives and salespersons, services	4,050	2.89	n.a.	n.a.
Brokers, real estate	90	.06	37	1
Sales agents, real estate	90	.06	34	1
Sales agents, securities, commodities, financial services	2,320	1.65	14	8
Sales agents, selected business services	900	.64	15	4
All other sales representatives and salespersons, service	650	.46	21	2
Cashiers	860	.61	19	4
All other sales and related workers	830	.59	n.a.	n.a.
Clerical and administrative support occupations	55,240	39.35	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,880	1.34	8	11
Tellers	680	.48	29	1
New accounts clerks	240	.17	29	(³)
Transit clerks	110	.08	37	(³)
Loan and credit clerks	370	.26	26	1
Adjustment clerks	210	.15	28	1
Brokerage clerks	1,010	.72	21	3
All other bank clerks	190	.14	n.a.	n.a.
Bill and account collectors	290	.21	31	1
Secretaries	16,970	12.09	3	69
Stenographers	700	.50	21	4
Receptionists and information clerks	2,180	1.55	6	22
Typists	1,090	.78	10	8
Typists, word processing equipment	1,390	.99	9	9
Personnel clerks, except payroll and timekeeping	360	.26	11	4
File clerks	610	.43	17	3
Statistical clerks	90	.06	35	1
Bookkeeping, accounting, and auditing clerks	9,440	6.73	4	50
Payroll and timekeeping clerks	1,010	.72	8	10
Billing, cost and rate clerks	220	.16	21	1
General office clerks	7,850	5.59	7	28
Electronic data processing and other office machine operators	4,400	3.13	n.a.	n.a.
Billing, posting, and calculating machine operators	60	.04	49	(³)
Duplicating machine operators	180	.13	21	1
Computer operators, except peripheral equipment	1,720	1.23	9	11
Peripheral EDP equipment operators	260	.19	25	1
Data entry keyers, except composing	1,800	1.28	10	9
All other office machine operators	380	.27	n.a.	n.a.
Switchboard operators	940	.67	11	10
Mail clerks, except mail machine operators and postal service	540	.38	9	4
Messengers	660	.47	12	6
Material recording, scheduling, dispatching, and distributing workers	490	.35	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	330	.24	24	2
All other material recording, scheduling, and distributing workers	160	.11	33	1
All other clerical and administrative support workers	1,320	.94	n.a.	n.a.
Service occupations	6,620	4.72	n.a.	n.a.
First-line supervisors and manager/supervisors, service	340	.24	27	2
Guards and watch guards	980	.70	19	3
Food and beverage preparation and service workers	2,040	1.45	23	3

See footnotes at end of table.

Table 16. Holding and other investment offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 67)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Cleaning and building service workers, except private households	2,290	1.63	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	1,480	1.05	9	10
All other cleaning and building service workers, except private households	810	.58	n.a.	n.a.
All other service workers	970	.69	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	1,940	1.38	n.a.	n.a.
Gardeners and groundskeepers, except farm	1,440	1.03	13	6
All other agriculture, forestry, fishing, and related workers	500	.36	24	1
Production, construction, operating, maintenance, and material handling occupations	5,930	4.22	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	430	.31	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	80	.06	30	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	100	.07	28	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	250	.18	19	2
Mechanics, installers, and repairers	1,830	1.30	40	11
Maintenance repairers, general utility	1,500	1.07	10	9
All other mechanics, installers, and repairers	330	.24	30	2
Construction trades workers, except material moving	160	.11	n.a.	n.a.
Carpenters	160	.11	34	1
All other construction and extractive workers, except helpers	750	.53	n.a.	n.a.
Precision production occupations	90	.06	36	(³)
Machine setters, set-up operators, operators and tenders	360	.26	35	1
Hand working occupations, including assemblers and fabricators	430	.31	29	(³)
Plant and system workers	90	.06	n.a.	n.a.
Motor vehicle operators	350	.25	n.a.	n.a.
Truck drivers, light, include delivery and route workers	240	.17	26	2
Taxi drivers and chauffeurs	110	.08	18	2
All other transportation and material moving equipment operators	590	.42	21	3
Freight, stock, and material movers, hand	370	.26	25	2
All other helpers, laborers, and material movers, hand	480	.34	25	2

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 63)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,228,720	100.00	--	--
Managerial and administrative occupations	94,940	7.73	n.a.	n.a.
Financial managers	12,430	1.01	6	31
Personnel, training, and labor relations managers	3,460	.28	5	16
Purchasing managers	820	.07	6	6
Marketing, advertising, and public relations managers	6,480	.53	5	17
Administrative services managers	8,240	.67	8	15
Property and real estate managers and administrators	1,230	.10	12	3
Food service and lodging managers	150	.01	15	1
General managers and top executives	28,860	2.35	4	34
All other managers and administrators	33,270	2.71	5	24
Professional, paraprofessional, and technical occupations	232,740	18.94	n.a.	n.a.
Management support workers	131,570	10.71	n.a.	n.a.
Accountants, auditors, and other financial specialists	72,970	5.94	n.a.	n.a.
Underwriters	49,700	4.04	2	35
Credit analysts	550	.04	13	2
Accountants and auditors	16,900	1.38	4	25
Budget analysts	1,630	.13	7	5
All other financial specialists	4,190	.34	9	5
Purchasing agents, except wholesale and retail trade, and farm products	870	.07	8	4
Special agents, insurance	13,650	1.11	5	22
Personnel, training, and labor relations specialists	5,000	.41	5	12
Cost estimators	750	.06	30	1
Construction and building inspectors	1,140	.09	31	1
Assessors	310	.03	26	1
Claims examiners, property and casualty insurance	23,690	1.93	5	18
All other management support workers	13,190	1.07	7	10
Engineers	4,590	.37	n.a.	n.a.
Safety engineers, except mining	4,120	.34	7	8
All other engineers	470	.04	20	1
Engineering and related technicians and technologists	550	.04	n.a.	n.a.
Drafters	170	.01	18	1
All other engineering and related technicians and technologists	380	.03	n.a.	n.a.
Computer scientists and related workers	44,770	3.64	n.a.	n.a.
Systems analysts, electronic data processing	16,560	1.35	7	11
Computer programmers	24,580	2.00	7	13
Computer programmer aides	3,630	.30	9	5
Mathematical scientists and related workers	16,520	1.34	n.a.	n.a.
Operations and systems researchers and analysts, except computer	5,180	.42	10	5
Statisticians	1,430	.12	10	3
Actuaries	4,560	.37	6	7
Financial analysts, statistical	2,950	.24	13	3
All other mathematical scientists	1,200	.10	30	1
Mathematical technicians	1,200	.10	19	1
Social scientists, including urban and regional planners	710	.06	n.a.	n.a.
Lawyers	5,150	.42	11	12
Law clerks	310	.03	11	2
Paralegal personnel	710	.06	8	3
Title searchers	4,500	.37	6	7
Title examiners and abstractors	6,250	.51	5	8

See footnotes at end of table.

Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 63)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other legal assistants and technicians, except clerical	1,420	0.12	14	2
Librarians, professional	260	.02	13	1
Registered nurses	1,260	.10	6	5
Licensed practical nurses	150	.01	22	1
All other health professionals, paraprofessional and technicians	1,620	.13	10	3
Public relations specialists and publicity writers	1,680	.14	7	5
Photographers	160	.01	9	1
All other professional, paraprofessional, and technical workers	10,560	.86	n.a.	n.a.
Sales and related occupations	222,710	18.13	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	26,800	2.18	2	42
Sales representatives and salespersons, services	194,470	15.83	n.a.	n.a.
Sales agents and placers, insurance	187,650	15.27	2	50
Sales agents, real estate	590	.05	47	(³)
Appraisers, real estate	160	.01	29	1
All other sales representatives and salespersons, service	6,070	.49	8	6
All other sales and related workers	1,440	.12	n.a.	n.a.
Clerical and administrative support occupations	655,060	53.31	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	42,180	3.43	3	31
Credit checkers	170	.01	18	1
Loan and credit clerks	4,450	.36	7	6
Adjustment clerks	4,160	.34	9	3
Insurance adjusters, examiners, and investigators	67,740	5.51	3	33
Insurance appraisers, auto damage	5,770	.47	8	8
Insurance examining clerks	5,830	.47	13	3
Insurance claims clerks	44,760	3.64	4	29
Insurance policy processing clerks	71,080	5.78	3	35
Bill and account collectors	3,390	.28	9	4
Library assistants and bookmobile drivers	140	.01	14	1
Real estate clerks	450	.04	17	1
Legal secretaries	2,280	.19	8	7
All other secretaries	53,330	4.34	2	60
Stenographers	5,760	.47	15	8
Receptionists and information clerks	8,640	.70	4	27
Typists	31,100	2.53	3	33
Typists, word processing equipment	15,330	1.25	4	25
Personnel clerks, except payroll and timekeeping	3,140	.26	5	12
Correspondence clerks	9,490	.77	6	6
File clerks	29,760	2.42	3	31
Statistical clerks	5,520	.45	9	6
Bookkeeping, accounting, and auditing clerks	32,030	2.61	3	38
Payroll and timekeeping clerks	2,880	.23	6	11
Billing, cost and rate clerks	16,960	1.38	4	13
General office clerks	91,460	7.44	3	44
Electronic data processing and other office machine operators	42,760	3.48	n.a.	n.a.
Billing, posting, and calculating machine operators	2,270	.18	8	4
Duplicating machine operators	1,630	.13	6	5
Mail machine operators, preparation and handling	2,070	.17	11	6
Computer operators, except peripheral equipment	10,080	.82	7	14
Peripheral EDP equipment operators	2,750	.22	8	5
Data entry keyers, except composing	20,200	1.64	4	18
All other office machine operators	3,760	.31	8	4

See footnotes at end of table.

Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 63)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Switchboard operators	4,890	0.40	3	25
Mail clerks, except mail machine operators and postal service	10,970	.89	3	23
Messengers	1,980	.16	7	6
Material recording, scheduling, dispatching, and distributing workers	4,430	.36	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	3,120	.25	5	10
All other material recording, scheduling, and distributing workers	1,310	.11	9	2
All other clerical and administrative support workers	32,230	2.62	n.a.	n.a.
Service occupations	13,630	1.11	n.a.	n.a.
First-line supervisors and manager/supervisors, service	2,230	.18	10	4
Guards and watch guards	2,130	.17	10	3
All other protective service workers	230	.02	n.a.	n.a.
Food and beverage preparation and service workers	2,500	.20	15	2
Cleaning and building service workers, except private households	6,260	.51	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	5,430	.44	6	9
All other cleaning and building service workers, except private households	830	.07	n.a.	n.a.
All other service workers	280	.02	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	470	.04	n.a.	n.a.
Gardeners and groundskeepers, except farm	470	.04	14	2
Production, construction, operating, maintenance, and material handling occupations	9,170	.75	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	630	.05	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	190	.02	29	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	440	.04	n.a.	n.a.
Mechanics, installers, and repairers	2,590	.21	31	6
Maintenance repairers, general utility	1,820	.15	6	5
All other mechanics, installers, and repairers	770	.06	25	1
Construction trades workers, except material moving	640	.05	n.a.	n.a.
Carpenters	210	.02	12	1
Electricians	430	.03	13	1
All other construction and extractive workers, except helpers	380	.03	n.a.	n.a.
Precision printing workers	1,690	.14	n.a.	n.a.
Precision compositors, typesetters, and arrangers	440	.04	11	2
Job printers	1,250	.10	12	3
Precision workers, nec	440	.04	31	(³)
Machine setters, set-up operators, operators and tenders	620	.05	29	1
Plant and system workers	460	.04	n.a.	n.a.
Stationary engineers	320	.03	14	1
All other plant and system operators	140	.01	23	(³)
Truck drivers, light, include delivery and route workers	480	.04	14	2
All other transportation and material moving equipment operators	240	.02	n.a.	n.a.
Freight, stock, and material movers, hand	410	.03	22	1

See footnotes at end of table.

Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 63)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other helpers, laborers, and material movers, hand	380	0.03	27	(³)
All other production, construction, operating, maintenance, and material handling occupations	210	.02	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 18. Insurance agents, brokers, and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 64)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	512,610	100.00	--	--
Managerial and administrative occupations	31,320	6.11	n.a.	n.a.
Financial managers	14,300	2.79	3	26
Personnel, training, and labor relations managers	610	.12	7	2
Purchasing managers	150	.03	10	1
Marketing, advertising, and public relations managers	1,180	.23	9	2
Administrative services managers	1,300	.25	16	2
Property and real estate managers and administrators	230	.04	26	(³)
General managers and top executives	9,660	1.88	3	11
All other managers and administrators	3,890	.76	n.a.	n.a.
Professional, paraprofessional, and technical occupations	73,620	14.36	n.a.	n.a.
Management support workers	60,170	11.74	n.a.	n.a.
Accountants, auditors, and other financial specialists	42,550	8.30	n.a.	n.a.
Underwriters	35,860	7.00	2	23
Credit analysts	80	.02	21	(³)
Accountants and auditors	5,640	1.10	4	10
Budget analysts	250	.05	37	(³)
All other financial specialists	720	.14	20	1
Purchasing agents, except wholesale and retail trade, and farm products	120	.02	20	(³)
Special agents, insurance	7,630	1.49	6	8
Personnel, training, and labor relations specialists	850	.17	23	1
Construction and building inspectors	180	.04	41	(³)
Claims examiners, property and casualty insurance	6,270	1.22	6	6
All other management support workers	2,570	.50	n.a.	n.a.
Engineers	1,270	.25	n.a.	n.a.
Safety engineers, except mining	1,090	.21	17	1
All other engineers	180	.04	35	(³)
Engineering and related technicians and technologists	150	.03	n.a.	n.a.
Drafters	80	.02	35	(³)
All other engineering and related technicians and technologists	70	.01	n.a.	n.a.
Computer scientists and related workers	3,470	.68	n.a.	n.a.
Systems analysts, electronic data processing	1,340	.26	25	1
Computer programmers	1,750	.34	7	2
Computer programmer aides	380	.07	11	1
Mathematical scientists and related workers	2,530	.49	n.a.	n.a.
Operations and systems researchers and analysts, except computer	290	.06	23	(³)
Actuaries	1,590	.31	13	1
Financial analysts, statistical	340	.07	26	(³)
All other mathematical scientists	240	.05	n.a.	n.a.
Mathematical technicians	70	.01	38	(³)
Economists, including market research analysts	200	.04	32	(³)
Lawyers	680	.13	13	1
Paralegal personnel	130	.03	17	(³)
Title searchers	420	.08	22	1
Title examiners and abstractors	1,110	.22	15	1
All other legal assistants and technicians, except clerical	220	.04	n.a.	n.a.
Registered nurses	740	.14	26	(³)
Licensed practical nurses	240	.05	34	(³)
All other health professionals, paraprofessional and technicians	380	.07	27	(³)

See footnotes at end of table.

Table 18. Insurance agents, brokers, and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 64)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Public relations specialists and publicity writers	290	0.06	20	(³)
All other professional, paraprofessional, and technical workers	1,620	.32	n.a.	n.a.
Sales and related occupations	129,850	25.33	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	18,730	3.65	2	26
Sales representatives and salespersons, services	110,300	21.52	n.a.	n.a.
Sales agents and placers, insurance	107,230	20.92	1	67
Brokers, real estate	140	.03	41	(³)
Sales agents, real estate	310	.06	32	(³)
Appraisers, real estate	90	.02	47	(³)
All other sales representatives and salespersons, service	2,530	.49	11	1
All other sales and related workers	820	.16	18	1
Clerical and administrative support occupations	272,350	53.13	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	5,140	1.00	5	6
Credit checkers	80	.02	44	(³)
Loan and credit clerks	880	.17	16	1
Adjustment clerks	310	.06	19	(³)
Insurance adjusters, examiners, and investigators	22,630	4.41	4	12
Insurance appraisers, auto damage	2,670	.52	11	3
Insurance examining clerks	450	.09	23	(³)
Insurance claims clerks	16,430	3.21	3	23
Insurance policy processing clerks	63,860	12.46	2	44
Bill and account collectors	520	.10	14	1
Real estate clerks	830	.16	17	1
Legal secretaries	340	.07	17	(³)
All other secretaries	40,650	7.93	2	44
Stenographers	900	.18	11	1
Receptionists and information clerks	9,880	1.93	3	21
Typists	11,450	2.23	3	13
Typists, word processing equipment	6,670	1.30	4	12
Personnel clerks, except payroll and timekeeping	400	.08	12	1
Correspondence clerks	350	.07	15	(³)
File clerks	11,050	2.16	3	17
Statistical clerks	880	.17	14	1
Bookkeeping, accounting, and auditing clerks	28,010	5.46	2	45
Payroll and timekeeping clerks	990	.19	8	3
Billing, cost and rate clerks	3,570	.70	6	4
General office clerks	26,870	5.24	3	23
Electronic data processing and other office machine operators	7,080	1.38	n.a.	n.a.
Billing, posting, and calculating machine operators	1,550	.30	13	3
Duplicating machine operators	140	.03	14	(³)
Mail machine operators, preparation and handling	300	.06	9	1
Computer operators, except peripheral equipment	1,300	.25	8	2
Peripheral EDP equipment operators	340	.07	17	(³)
Data entry keyers, except composing	3,170	.62	7	3
All other office machine operators	280	.05	29	(³)
Switchboard operators	3,000	.59	4	9
Mail clerks, except mail machine operators and postal service	2,480	.48	5	6
Messengers	340	.07	10	1
Material recording, scheduling, dispatching, and distributing workers	510	.10	n.a.	n.a.
All other clerical and administrative support workers	3,130	.61	n.a.	n.a.

See footnotes at end of table.

Table 18. Insurance agents, brokers, and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 64)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Service occupations	3,940	0.77	n.a.	n.a.
First-line supervisors and manager/supervisors, service	230	.04	20	(³)
Protective service occupations	200	.04	n.a.	n.a.
Food and beverage preparation and service workers	90	.02	32	(³)
Cleaning and building service workers, except private households	2,840	.55	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	2,680	.52	6	6
All other cleaning and building service workers, except private households	160	.03	33	(³)
All other service workers	580	.11	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	250	.05	n.a.	n.a.
Gardeners and groundskeepers, except farm	250	.05	18	(³)
Production, construction, operating, maintenance, and material handling occupations	1,280	.25	n.a.	n.a.
Inspectors and related occupations	80	.02	40	(³)
Mechanics, installers, and repairers	430	.08	n.a.	n.a.
Precision printing workers	160	.03	n.a.	n.a.
Job printers	160	.03	21	(³)
Transportation equipment operators	170	.03	n.a.	n.a.
Helpers - laborers and material movers, hand	220	.04	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	220	.04	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 19. Real estate: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 65)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,058,070	100.00	--	--
Managerial and administrative occupations	117,240	11.08	n.a.	n.a.
Financial managers	29,470	2.79	3	27
Personnel, training, and labor relations managers	860	.08	8	2
Purchasing managers	570	.05	11	1
Marketing, advertising, and public relations managers	2,120	.20	8	3
Administrative services managers	3,510	.33	10	3
Property and real estate managers and administrators	44,730	4.23	4	17
Food service and lodging managers	8,930	.84	9	5
General managers and top executives	14,970	1.41	4	13
All other managers and administrators	12,080	1.14	6	7
Professional, paraprofessional, and technical occupations	44,730	4.23	n.a.	n.a.
Management support workers	19,470	1.84	n.a.	n.a.
Accountants, auditors, and other financial specialists	13,610	1.29	n.a.	n.a.
Underwriters	140	.01	36	(³)
Accountants and auditors	12,600	1.19	4	12
Budget analysts	330	.03	12	1
All other financial specialists	540	.05	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	320	.03	14	1
Special agents, insurance	110	.01	32	(³)
Personnel, training, and labor relations specialists	410	.04	20	1
Cost estimators	400	.04	17	1
Construction and building inspectors	640	.06	18	1
All other management support workers	3,980	.38	n.a.	n.a.
Engineers	1,120	.11	n.a.	n.a.
Safety engineers, except mining	170	.02	35	(³)
All other engineers	950	.09	16	1
Architects, except landscape and marine	500	.05	16	1
Landscape architects	300	.03	16	1
Surveying and mapping scientists	130	.01	41	(³)
Engineering and related technicians and technologists	2,040	.19	n.a.	n.a.
Drafters	1,490	.14	10	2
Surveying and mapping technicians and technologists	150	.01	43	(³)
All other engineering and related technicians and technologists	400	.04	48	(³)
Computer scientists and related workers	1,390	.13	n.a.	n.a.
Systems analysts, electronic data processing	340	.03	14	1
Computer programmers	750	.07	10	1
Computer programmer aides	300	.03	13	1
Mathematical scientists and related workers	510	.05	n.a.	n.a.
Operations and systems researchers and analysts, except computer	220	.02	22	(³)
Mathematical scientists	290	.03	n.a.	n.a.
Social scientists, including urban and regional planners	160	.02	n.a.	n.a.
Lawyers	1,400	.13	18	1
Paralegal personnel	240	.02	16	(³)
Title searchers	4,530	.43	5	3
Title examiners and abstractors	5,680	.54	4	4
All other legal assistants and technicians, except clerical	680	.06	n.a.	n.a.
Registered nurses	730	.07	25	(³)
Licensed practical nurses	530	.05	26	(³)

See footnotes at end of table.

Table 19. Real estate: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 65)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other health professionals, paraprofessional and technicians	1,940	0.18	23	(³)
Public relations specialists and publicity writers	700	.07	11	1
All other professional, paraprofessional, and technical workers	2,680	.25	n.a.	n.a.
Sales and related occupations	181,540	17.16	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	34,870	3.30	3	25
Sales representatives and salespersons, services	142,250	13.44	n.a.	n.a.
Sales agents and placers, insurance	4,150	.39	10	3
Brokers, real estate	31,420	2.97	3	19
Sales agents, real estate	89,870	8.49	3	18
Appraisers, real estate	10,920	1.03	8	4
All other sales representatives and salespersons, service	5,890	.56	9	3
All other sales and related workers	4,420	.42	12	2
Clerical and administrative support occupations	235,980	22.30	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	5,590	.53	6	6
Loan interviewers	170	.02	34	(³)
Credit checkers	130	.01	48	(³)
Loan and credit clerks	4,860	.46	9	3
Adjustment clerks	220	.02	26	(³)
Selected insurance workers	400	.04	n.a.	n.a.
Bill and account collectors	820	.08	15	1
Real estate clerks	18,460	1.74	7	11
Legal secretaries	800	.08	19	1
All other secretaries	61,100	5.77	2	42
Stenographers	2,260	.21	12	2
Receptionists and information clerks	26,030	2.46	4	19
Typists	6,140	.58	5	5
Typists, word processing equipment	4,420	.42	6	4
Personnel clerks, except payroll and timekeeping	320	.03	11	1
Correspondence clerks	380	.04	29	(³)
File clerks	780	.07	10	1
Bookkeeping, accounting, and auditing clerks	44,540	4.21	2	37
Payroll and timekeeping clerks	2,780	.26	6	5
Billing, cost and rate clerks	400	.04	16	1
General office clerks	37,320	3.53	3	25
Electronic data processing and other office machine operators	4,440	.42	n.a.	n.a.
Computer operators, except peripheral equipment	700	.07	10	1
Data entry keyers, except composing	3,040	.29	7	3
All other office machine operators	700	.07	n.a.	n.a.
Switchboard operators	7,600	.72	8	6
Mail clerks, except mail machine operators and postal service	480	.05	13	1
Messengers	1,180	.11	13	2
Material recording, scheduling, dispatching, and distributing workers	860	.08	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	470	.04	13	1
All other material recording, scheduling, and distributing workers	390	.04	32	(³)
All other clerical and administrative support workers	3,500	.33	n.a.	n.a.
Service occupations	223,380	21.11	n.a.	n.a.
First-line supervisors and manager/supervisors, service	8,100	.77	6	4
Guards and watch guards	43,880	4.15	4	11

See footnotes at end of table.

Table 19. Real estate: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 65)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other protective service workers	1,600	0.15	n.a.	n.a.
Food and beverage preparation and service workers	19,160	1.81	8	3
Cleaning and building service workers, except private households	138,290	13.07	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	105,820	10.00	3	30
Elevator operators	6,950	.66	12	1
All other cleaning and building service workers, except private households	25,520	2.41	6	7
All other service workers	12,350	1.17	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	76,240	7.21	n.a.	n.a.
Gardeners and groundskeepers, except farm	75,260	7.11	3	28
All other agriculture, forestry, fishing, and related workers	980	.09	35	(³)
Production, construction, operating, maintenance, and material handling occupations	178,960	16.91	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	7,820	.74	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	3,510	.33	8	2
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	270	.03	26	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	4,040	.38	9	4
Inspectors and related occupations	130	.01	38	(³)
Mechanics, installers, and repairers	125,120	11.83	22	44
Maintenance repairers, general utility	122,630	11.59	2	43
All other mechanics, installers, and repairers	2,490	.24	21	1
Construction trades workers, except material moving	24,440	2.31	n.a.	n.a.
Carpenters	11,150	1.05	7	6
Electricians	1,220	.12	12	1
Painters and paperhangers, construction and maintenance	11,380	1.08	6	7
Plumbers, pipefitters, and steamfitters	690	.07	15	1
All other construction and extractive workers, except helpers	2,270	.21	16	1
Machine setters, set-up operators, operators and tenders	150	.01	38	(³)
Plant and system workers	1,850	.17	n.a.	n.a.
Stationary engineers	1,300	.12	23	1
All other plant and system operators	550	.05	28	(³)
Truck drivers, light, include delivery and route workers	1,990	.19	13	2
Aircraft pilots and flight engineers	250	.02	33	(³)
All other transportation and material moving equipment operators	3,600	.34	12	1
Freight, stock, and material movers, hand	2,170	.21	19	1
All other helpers, laborers, and material movers, hand	8,870	.84	10	3
All other production, construction, operating, maintenance, and material handling occupations	300	.03	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 20. Combined real estate, insurance, loan, and law offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 66)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	14,860	100.00	--	--
Managerial and administrative occupations	1,270	8.55	n.a.	n.a.
Selected staff and administrative specialty managerial occupations	440	2.96	n.a.	n.a.
Property and real estate managers and administrators	670	4.51	5	25
General managers and top executives	160	1.08	10	5
Professional, paraprofessional, and technical occupations	1,070	7.20	n.a.	n.a.
Management support workers	800	5.38	n.a.	n.a.
Accountants, auditors, and other financial specialists	800	5.38	n.a.	n.a.
Underwriters	680	4.58	7	16
All other financial specialists	120	.81	n.a.	n.a.
Legal assistants and technicians, except clerical	150	1.01	n.a.	n.a.
All other professional, paraprofessional, and technical workers	120	.81	n.a.	n.a.
Sales and related occupations	5,730	38.56	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	510	3.43	7	16
Sales representatives and salespersons, services	5,220	35.13	n.a.	n.a.
Sales agents and placers, insurance	2,260	15.21	3	59
Brokers, real estate	920	6.19	4	35
Sales agents, real estate	1,830	12.31	6	24
Appraisers, real estate	130	.87	10	7
All other sales representatives and salespersons, service	80	.54	20	1
Clerical and administrative support occupations	5,600	37.69	n.a.	n.a.
Loan and credit clerks	70	.47	33	1
Insurance adjusters, examiners, and investigators	100	.67	17	3
Insurance policy processing clerks	130	.87	18	2
All other insurance examiners, appraisers, and clerks	70	.47	n.a.	n.a.
Real estate clerks	270	1.82	8	11
Secretaries	1,690	11.37	n.a.	n.a.
Receptionists and information clerks	590	3.97	9	20
Typists	250	1.68	9	11
Typists, word processing equipment	90	.61	13	5
Bookkeeping, accounting, and auditing clerks	920	6.19	3	45
General office clerks	1,060	7.13	5	29
Electronic data processing and other office machine operators	120	.81	n.a.	n.a.
Switchboard operators	60	.40	14	3
All other clerical and administrative support workers	180	1.21	n.a.	n.a.
Service occupations	730	4.91	n.a.	n.a.
Cleaning and building service workers, except private households	630	4.24	n.a.	n.a.
All other service workers	100	.67	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	40	.27	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations	420	2.83	n.a.	n.a.
Mechanics, installers, and repairers	270	1.82	14	5

See footnotes at end of table.

Table 20. Combined real estate, insurance, loan, and law offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 66)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Maintenance repairers, general utility	270	1.82	14	5
All other production, construction, operating, maintenance, and material handling occupations	150	1.01	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Services

This industry division includes establishments which provide a wide variety of services for individuals, businesses, government, and other organizations.

In 1984, services employed approximately 15 million workers or 58 percent of the workers covered by the survey. The largest industry segment in services was business services, with 27 percent of employment. Health services, except hospitals, employed over 3 million workers, or 20 percent of employment in this industry division.

Hotels and other lodging places

This industry (SIC 70) includes commercial and industrial establishments furnishing lodging, lodging and meals, and camping space and facilities on a fee basis.

In 1984, these establishments employed over 1.2 million workers, constituting nearly 5 percent of all workers covered by the survey and 8 percent of the workers employed in services.

The largest occupational group in hotels and other lodging places consisted of 825,770 service workers, accounting for 65 percent of total employment (table 21). Other occupations were distributed as follows: Clerical and administrative support workers, 14.4 percent; production and related workers, 6.8 percent; managerial and administrative workers, 5.5 percent; sales workers, 4.5 percent; and professional, paraprofessional, and technical workers, 2.6 percent.

The sales group included 31,530 cashiers and 8,330 first-line sales supervisors in 1984. These occupations were previously classified under the clerical and managerial groups, respectively.

The five most populous occupations in hotels and other lodging places, which together accounted for 48 percent of total employment, are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Maids and house-keeping cleaners	247,010	19.5	-7.5
Waiters and waitresses . .	164,200	13.0	9.3
Hotel desk clerks	97,360	7.7	10.7
Cooks, restaurant	51,360	4.1	20.1
First-line supervisors, service	48,390	3.8	(¹)

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Employment of restaurant cooks increased by 20 percent between 1981 and 1984. Hotel desk clerks increased by 10.7 percent, and waiters and waitresses increased by

9.3 percent. Employment of maids and housekeeping cleaners declined by 7.5 percent.

Personal services

Establishments in this industry (SIC 72) provide services generally involving care of the person or of apparel. They include laundries, drycleaning plants, portrait photographic studios, and beauty and barber shops.

As shown in table 22, the personal services industry employed 1 million workers, which accounted for 6.6 percent of total services employment. The service occupational group was the largest in personal services, with 366,880 workers, or about 37 percent of industry employment. Other occupational groups with large numbers of workers in this industry included: Production and related workers, with 26.6 percent of employment; professional, paraprofessional, and technical workers, with 13 percent; sales workers, with 10.5 percent; and clerical workers, with about 10 percent.

In 1984, 60,810 counter and rental clerks, as well as 14,860 cashiers, were classified in the sales group. They were previously classified in the clerical occupations. Data from 1984 also include 3,160 first-line sales supervisors who were previously classified in the managerial group and are currently included in the sales group. Funeral directors and morticians, numbering 22,060 in 1984, who were previously classified in the managerial category, appear in the professional group.

The tabulation below lists the five most populous occupations in the industry.

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Hairdressers, hair-stylists, and cosmetologists	256,000	25.5	(¹)
Counter and rental clerks	60,810	6.1	7.5
Pressing machine operators, textile and related	45,340	4.5	(¹)
Laundry and drycleaning machine operators, except pressing	43,790	4.4	(¹)
Receptionists and information clerks	35,330	3.5	52.7

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Between 1981 and 1984, employment of receptionists and information clerks in the personal services industry in-

creased by 52.7 percent. Employment of counter and rental clerks increased by 7.5 percent.

Business services

Establishments in this industry (SIC 73) render services to business establishments on a fee or contract basis. These services include advertising; mailing services; building maintenance services; employment and personnel supply services; management and consulting services; protective services; equipment rental and leasing; and commercial research, development, and testing.

Business services employed approximately 4 million workers in 1984, or 16 percent of all workers covered by the survey and 27 percent of the workers in the services industries.

As shown in table 23, the largest occupational group in business services consisted of 1.1 million clerical workers, who accounted for 28 percent of industry employment. Service workers constituted 26 percent. The third largest occupational group was made up of 771,460 professional, paraprofessional, and technical workers, with almost 19 percent of total employment. Production and related workers ranked fourth with 14 percent. The remaining employment was distributed as follows: Managerial and administrative workers, with 6.9 percent; and sales workers, with 5.3 percent.

In 1984, the sales group included 29,300 first-line sales supervisors, previously classified in the managerial group, and 3,130 sales engineers, who had previously been classified in the professional category. The sales group also included 23,180 counter and rental clerks and 7,780 cashiers. These occupations were classified in the clerical group in previous surveys.

Employment changes since 1981 for each 3-digit SIC industry making up business services are given in text table 5.

Text table 5. Business services: Employment by industry 1981-84

Industry	SIC code	Employment		Percent change, 1981-84
		1981	1984	
Advertising	731	156,870	183,560	17.0
Credit reporting and collection	732	76,080	80,100	5.3
Mailing, reproduction, and stenographic	733	127,290	161,930	27.2
Building services	734	519,280	613,300	18.1
News syndicates	735	7,070	8,110	14.7
Personnel supply services	736	604,450	813,630	34.6
Computer and data processing services	737	331,990	468,740	41.2
Miscellaneous business services	739	1,440,290	1,714,890	19.1

Industry employment growth was led by computer and data processing services (SIC 737) and personnel supply services (SIC 736). The growing use of minicomputers along with a wide variety of software packages, which reduced costs and increased potential uses of computer-related services, may account for the employment change in SIC 737. About three-quarters of personnel supply services employment was in the temporary

help supply industry, which grew rapidly between 1981 and 1984. During the 1983-84 recovery, firms may have sought to reduce unit labor costs by substituting temporary help for permanent employees.

The five most populous occupations in business services are listed below:

	Employment, 1984	Percent of industry employment, 1984	Percent change in employment, 1981-84
Janitors and cleaners, except maids and housekeeping	438,080	10.8	47.2
Guards and watch guards	384,020	9.4	25.1
Secretaries	171,970	4.2	36.7
General office clerks	145,430	3.6	27.3
General managers and top executives	109,420	2.7	(¹)

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

This industry employed 47.2 percent more janitors and cleaners in 1984 than in 1981, mostly in building services. Employment of secretaries increased by 36.7 percent, and general office clerks increased by 27.3 percent. Most of these workers were employed in the personnel supply services industry. Guards and watch guards increased by over 25 percent.

Automotive repair, services, and garages

This industry (SIC 75) includes establishments furnishing automotive repair, rental, leasing, and parking services to the general public.

In 1984, automotive repair, services, and garages employed 677,880 workers, constituting 4 percent of services employment.

The largest occupational group consisted of 477,010 production and related workers, accounting for 70 percent of total employment in this industry (table 24). Sales workers, numbering 83,470, ranked second with about 12 percent. Clerical and administrative support workers made up 11 percent.

First-line sales supervisors, numbering 18,930 in 1984, were reclassified from the managerial to the sales group. Occupations which were shifted from the clerical to the sales group included counter and rental clerks, numbering 25,910 in 1984, and cashiers, numbering 15,960. Data for 1984 include 38,070 first-line production supervisors; there were only 6,830 nonworking production supervisors employed in 1981. Part of the difference may have been due to the reclassification of some employees from the managerial group to the occupation of first-line production supervisor.

The five largest occupations in automotive repair, services, and garages are listed on the following page. Together, they accounted for approximately 49 percent of total industry employment.

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Automotive mechanics	123,970	18.3
Automotive body and related repairers	88,330	13.0
Vehicle washers and equipment cleaners	53,300	7.9
First-line supervisors, mechanics and repairers	35,750	5.3
Bus and truck mechanics and diesel engine specialists	31,420	4.6

Miscellaneous repair services

Establishments in this industry (SIC 76) are engaged in electrical repair; watch, clock, and jewelry repair; reupholstery and furniture repair; and other miscellaneous repair and services.

These establishments employed 311,060 workers in 1984, accounting for 2 percent of services employment. Production and related workers, numbering 209,620, constituted the largest occupational group in the industry, with 67 percent of total employment (table 25). Clerical and administrative support workers, with 47,170, and sales workers, with 26,710, made up 15 percent and 8.6 percent, respectively.

First-line sales supervisors, numbering 8,600 in 1984, were previously classified under the managerial group. In addition, 1,010 cashiers and 320 counter and rental clerks were classified as sales workers; they had been included in clerical occupations in 1981. There were 14,090 first-line production supervisors in 1984, while there were 2,360 nonworking supervisors in 1981. Part of this difference may have been due to a shift of some employees from the managerial group to the occupation of first-line supervisor.

The five largest occupations in miscellaneous repair services, which together accounted for one-fourth of total industry employment, are as follows:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Welders and cutters . .	21,670	7.0	23.5
Electric motor, trans- former, and related repairers	15,410	5.0	34.6
Electronic home enter- tainment equipment repairers	13,890	4.5	23.1
First-line supervisors, mechanics and repairers	13,120	4.2	(¹)
General office clerks .	13,120	4.2	42.9

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

Between 1981 and 1984, employment of general office clerks increased by almost 43 percent. The number of electric motor, transformer, and related repairers increased by 34.6 percent. Welders and cutters and elec-

tronic home entertainment equipment repairers each increased by over 23 percent.

Motion pictures

This industry (SIC 78) includes establishments producing and distributing motion pictures, exhibiting motion pictures in commercially operated theaters, and furnishing services to the motion picture industry.

In 1984, the motion picture industry employed 229,000 workers, or about 1.5 percent of the workers employed in total services. As shown in table 26, service workers, who totaled 65,100, made up the largest occupational group, with 28 percent of total industry employment. Other occupational groups were distributed as follows: Professional, paraprofessional, and technical workers, 23 percent of industry employment; sales workers, 14 percent; production and related workers, 12 percent; clerical and administrative support workers, 11.8 percent; and managerial and administrative workers, 10 percent.

In 1984, cashiers were classified in the sales category, while in 1981, they were included with clerical workers. Employment in this occupation was 22,950 in 1984.

The five most populous occupations in the motion picture industry, accounting for 50 percent of total industry employment, are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Ushers, lobby attend- ants, and ticket takers	28,440	12.4	2.1
Producers, directors, actors, and other entertainers	24,880	10.9	15.1
Cashiers	22,950	10.0	13.7
Counter attendants, lunchroom, coffee shop, or cafeteria . .	14,770	6.4	138.6
Janitors and cleaners, except maids and housekeeping	8,840	3.9	-20.0

Employment of janitors and cleaners declined by 20 percent between 1981 and 1984. During the same period, employment of lunchroom, coffee shop, and cafeteria counter attendants increased by 138.6 percent. Producers, directors, actors, and other entertainers increased by over 15 percent, while cashiers increased by 13.7 percent. The number of ushers, lobby attendants, and ticket takers increased by about 2 percent.

Amusement and recreation services, except motion pictures

Establishments in this industry (SIC 79) provide amusement or entertainment for a fee or admission charge. Such establishments include dance halls, theatrical producers, bowling alleys, and golf courses.

Amusement and recreation services employed 791,470 persons in 1984, accounting for 5 percent of services employment. As shown in table 27, the largest occupational group in amusement and recreation services consisted of 372,820 service workers or 47 percent of total industry employment. Other occupational groups were distributed as follows: Professional, paraprofessional, and technical workers, 17.3 percent; sales workers, 8.3 percent; clerical and administrative support workers, 7.7 percent; production and related workers, 7.5 percent; and managerial and administrative workers, 5.4 percent.

The 1984 data included 1,730 first-line sales supervisors in the sales group who were previously classified in the managerial category. Cashiers and counter and rental clerks, numbering 49,100 and 3,600, respectively, in 1984, were included in the sales group. These occupations were classified among the clerical occupations in 1981. Also, the 1984 survey distinguished between production and related occupations and agricultural, forestry, fishing, and related occupations whereas these occupations were combined under maintenance, construction, repair, material handling, and power plant occupations in 1981.

The five most populous occupations in amusement and recreation services, in order of predominance, are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Amusement and recreation attendants	95,610	12.1	(¹)
Waiters and waitresses	61,560	7.8	0.8
Cashiers	49,100	6.2	25.4
Gardeners and groundskeepers, except farm	44,490	5.6	1.9
Musicians, instrumental	30,710	3.9	-2.8

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

The number of cashiers employed in this industry increased by 25.4 percent between 1981 and 1984. Gardeners and groundskeepers increased by 2 percent while employment of waiters and waitresses increased by 1 percent. The number of instrumental musicians declined by almost 3 percent during the period.

Health services, except hospitals

This industry (SIC 80, except 806) includes licensed practitioners who provide health care in their offices, nursing and personal care facilities, medical laboratories, outpatient care facilities, and other allied services.

These health services employed over 3 million workers

in 1984, accounting for 11.7 percent of surveyed employment and 20 percent of services employment (table 28). Professional, paraprofessional, and technical workers numbered 1.1 million. There were also about the same number of service workers; each of these occupational groups accounted for about 36 percent of industry employment. Other major occupational groups included: Clerical and administrative support workers, 20.7 percent; managerial and administrative occupations, 3.4 percent; production and related occupations, 3.1 percent; and sales workers, less than 1 percent.

In 1984, the health services industry employed 9,000 cashiers, who were classified among sales workers. This occupation was included with clerical workers in previous surveys. There were 23,870 first-line service supervisors in 1984 classified in the service group, whereas there were only 2,090 nonworking service supervisors employed in 1981. Part of the difference may have resulted from the reclassification of some first-line supervisors as managerial employees in 1984. The service occupational group in 1984 also included 136,630 dental assistants, who were previously included with technical workers. Physical and corrective therapy assistants and aides, numbering 15,670 in 1984, were reclassified from the technical to the service occupational group. Dispensing and measuring opticians, numbering 19,570 in 1984, were shifted from the maintenance, construction, repair, material handling, and powerplant occupational category to the professional, paraprofessional, and technical group.

The five most populous occupations in the health services, except hospitals, are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Nursing aides, orderlies, and attendants	497,460	16.2	1.9
Physicians and surgeons	209,990	6.8	22.1
Registered nurses	209,940	6.8	13.9
Licensed practical nurses	173,440	5.7	28.3
Receptionists and information clerks .	163,080	5.3	31.3

Employment of registered nurses increased by over 39 percent between 1981 and 1984. The number of receptionists and information clerks also increased by over 31 percent. There were 28 percent more licensed practical nurses, and physicians and surgeons increased by more than 22 percent. There were 2 percent more workers employed as nurses aides, orderlies, and attendants between 1981 and 1984.

Legal services

Establishments in this industry (SIC 81) are headed by members of the bar and offer legal advice and service.

These establishments employed 634,470 persons in 1984, or 4 percent of the workers employed in services. About 98 percent of total employment in legal services was accounted for by two major occupational groups. Clerical workers, numbering 339,760, made up nearly 54 percent (table 29). Professional, paraprofessional, and technical workers, numbering 277,330, ranked second with 44 percent of legal services employment.

The five largest occupations in this industry, which together accounted for 77 percent of total industry employment, are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Lawyers	206,810	32.6	46.9
Legal secretaries	199,360	31.4	(¹)
Paralegal personnel	37,950	6.0	22.8
Bookkeeping, ac- counting, and auditing clerks	23,390	3.7	32.4
Law clerks	22,040	3.5	15.6

¹ Because of changes in the survey classification system, data for 1981 and 1984 are not comparable.

The number of lawyers employed in the legal services industry increased by 47 percent between 1981 and 1984. Employment of bookkeeping, accounting, and auditing clerks increased by 32.4 percent; paralegal personnel increased by almost 23 percent; law clerks increased by 15.6 percent; and the number of legal secretaries increased by almost 5 percent.

Social services

This industry (SIC 83) consists of establishments providing social and rehabilitation services to persons with social or personal problems, the handicapped, or the disadvantaged. Organizations soliciting funds to be used directly for these and related services are included.

Social services employed 1.2 million persons in 1984, accounting for 4.7 percent of surveyed employment and 8 percent of services employment. As shown in table 30, the largest occupational group was made up of 446,980 professional, paraprofessional, and technical workers, or 36 percent of all workers employed in social services. Service occupations, totaling 356,950, constituted 29 percent of industry employment. The third largest occupational group consisted of 214,660 clerical workers, with 17.4 percent of industry employment. Production and related workers accounted for 8.6 percent; managerial and administrative occupations, 7.6 percent; and sales workers, only 1 percent.

The 1984 data include 2,350 first-line sales supervisors and 3,350 cashiers in the sales group. These occupations were previously classified in the managerial and clerical groups, respectively. Between 1981 and 1984, the number of elementary and/or preschool

teachers increased from 84,380 to 145,910 in the professional group. Also in the professional category were 89,470 social workers and 32,070 social service technicians in 1984. In 1981, there were 57,230 caseworkers in the professional group and no social service technicians. In the service occupational group, 1984 data include 11,770 first-line service supervisors, whereas there were only 3,440 nonworking service supervisors in 1981. Some of the difference may have resulted from the reclassification of some managerial occupations to the occupation of first-line service supervisor between 1981 and 1984.

The five most populous occupations in social services are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Teachers, preschool and kindergarten	143,130	11.6
Child care workers	85,870	7.0
Teachers' aides and educational assistants, clerical	71,370	5.8
Social workers, except medical and psychiatric	57,100	4.6
Home health aides	47,240	3.8

Museums and botanical and zoological gardens

This industry (SIC 84) includes museums, art galleries, and botanical and zoological gardens which are not operated commercially.

In 1984, these establishments employed 39,230 workers. As shown in table 31, occupational employment was as follows: Service occupations accounted for 10,870 workers, or 27.7 percent of industry employment; professional, paraprofessional, and technical workers, 25.2 percent; clerical workers, 16.7 percent; managerial and sales occupations, 8.7 and 9 percent respectively; and production workers, 6.6 percent.

The five largest occupations in museums and botanical and zoological gardens are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Guards and watch guards	3,660	9.3	7.3
Guides	3,390	8.6	-11.9
Curators, archivists, museum techni- cians, and restorers	3,360	8.6	31.2
Cashiers	2,160	5.5	170.0
Secretaries	2,140	5.5	39.0

Between 1981 and 1984, employment of cashiers increased 170 percent. The number of secretaries increased by 39 percent; and employment of curators, archivists, museum technicians, and restorers increased by over 31 percent. The number of guards and watch guards in-

creased by 7.3 percent, while employment of guides declined by almost 12 percent.

Membership organizations, except religious organizations

This industry (SIC 86, except 866) includes organizations operating on a membership basis to promote the interests of its members. Such organizations include trade associations; professional membership organizations; labor unions and similar labor organizations; civic, social, and fraternal associations; and political organizations.

In 1984, membership organizations employed 647,430 workers or 4.3 percent of all workers employed in services.

Clerical and administrative support workers, numbering 176,630, made up the largest occupational group, with 27.3 percent of total membership organization employment (table 32). This group was followed by professional, paraprofessional, and technical workers, with 26.6 percent; and service workers, with 23.7 percent.

The five most populous occupations in membership organizations, other than religious groups are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Secretaries	54,730	8.5
Personnel, training, and labor relations specialists	43,460	6.7
Bartenders	38,020	5.9
General managers and top executives	30,430	4.7
General office clerk	28,540	4.4

Miscellaneous services

Establishments in this industry (SIC 89) perform services such as those rendered by engineers, architects, accountants, artists, lecturers, and writers.

These establishments employed more than 1.1 million

workers in 1984, accounting for 7.7 percent of services employment. As shown in table 33, the largest occupational group consisted of professional, paraprofessional, and technical workers, numbering 742,660, or 64 percent of the workers employed in miscellaneous services. Clerical workers, totaling 279,690, ranked second with 24 percent. Managerial and administrative workers made up 6.4 percent of industry employment. The remaining occupational employment was distributed as follows: Production and related workers, 3 percent; and service and sales workers, 1 percent each.

The 1984 sales group data include 1,270 first-line sales supervisors and 3,160 sales engineers. These occupations were previously classified in the managerial and professional categories, respectively. In the professional and technical occupational group, the number of accountants and auditors increased from 44,800 to 172,440 between 1981 and 1984.

The five most populous occupations in miscellaneous services are listed below:

	<i>Employment, 1984</i>	<i>Percent of industry employment, 1984</i>	<i>Percent change in employment, 1981-84</i>
Accountants and auditors	172,440	14.9	19.1
Drafters	107,000	9.2	7.4
Secretaries	84,590	7.3	25.9
Civil engineers, including traffic ...	67,310	5.8	36.5
Bookkeeping, accounting and auditing clerks	52,920	4.6	28.0

The rate of increase of accountant and auditor employment between 1981 and 1984 was 285 percent. The number of civil engineers increased by 36.5 percent. Employment of bookkeeping, accounting, and auditing clerks increased by 28 percent, and the number of secretaries increased by about 26 percent. The number of workers employed as drafters increased by 7.4 percent during the period.

Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 70)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,267,930	100.00	--	--
Managerial and administrative occupations	70,210	5.54	n.a.	n.a.
Financial managers	7,380	.58	7	31
Personnel, training, and labor relations managers	2,260	.18	6	15
Purchasing managers	1,400	.11	6	12
Marketing, advertising, and public relations managers	3,430	.27	5	17
Administrative services managers	1,710	.13	9	7
Food service and lodging managers	34,540	2.72	3	64
General managers and top executives	10,470	.83	5	36
All other managers and administrators	9,020	.71	8	14
Professional, paraprofessional, and technical occupations	32,460	2.56	n.a.	n.a.
Management support workers	14,290	1.13	n.a.	n.a.
Accountants, auditors, and other financial specialists	9,900	.78	n.a.	n.a.
Accountants and auditors	8,970	.71	5	26
Budget analysts	390	.03	13	2
All other financial specialists	540	.04	14	2
Purchasing agents, except wholesale and retail trade, and farm products	1,420	.11	12	8
Personnel, training, and labor relations specialists	1,070	.08	7	7
Compliance officers and enforcement inspectors, except construction	340	.03	16	1
All other management support workers	1,560	.12	n.a.	n.a.
Engineers	1,680	.13	9	6
Engineering and related technicians and technologists	1,360	.11	10	3
Computer scientists and related workers	1,020	.08	n.a.	n.a.
Systems analysts, electronic data processing	350	.03	13	2
Computer programmers	430	.03	18	2
Computer programmer aides	240	.02	14	1
Recreation workers	6,970	.55	6	8
Instructors and coaches, sports and physical training	1,120	.09	26	2
All other teachers and instructors	420	.03	23	(³)
Registered nurses	340	.03	17	2
Licensed practical nurses	290	.02	41	1
All other health professionals, paraprofessional and technicians	870	.07	33	1
Public relations specialists and publicity writers	620	.05	11	3
Music directors, singers, composers, and related workers	220	.02	23	1
Musicians, instrumental	1,230	.10	18	2
Dancers and choreographers	560	.04	25	(³)
All other professional, paraprofessional, and technical workers	1,470	.12	n.a.	n.a.
Sales and related occupations	57,130	4.51	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	8,330	.66	7	25
Sales representatives and salespersons, services	10,600	.84	n.a.	n.a.
Sales agents, selected business services	8,380	.66	7	19
All other sales representatives and salespersons, service	2,220	.18	17	6
Salespersons, retail	5,330	.42	8	9
Cashiers	31,530	2.49	4	33
All other sales and related workers	1,340	.11	15	3

See footnotes at end of table.

Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 70)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Clerical and administrative support occupations	182,020	14.36	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	6,940	.55	4	20
Adjustment clerks	750	.06	14	3
Travel clerks	2,560	.20	11	6
Hotel desk clerks	97,360	7.68	2	72
Secretaries	16,240	1.28	4	36
Stenographers	260	.02	14	1
Receptionists and information clerks	6,010	.47	16	11
Typists	1,300	.10	10	5
Personnel clerks, except payroll and timekeeping	580	.05	11	4
File clerks	1,250	.10	5	9
Order clerks, materials, merchandise, and service	510	.04	10	3
Procurement clerks	580	.05	8	3
Bookkeeping, accounting, and auditing clerks	650	.05	7	5
Payroll and timekeeping clerks	18,220	1.44	3	42
Billing, cost and rate clerks	4,620	.36	7	18
General office clerks	790	.06	9	4
Electronic data processing and other office machine operators	5,240	.41	10	13
Billing, posting, and calculating machine operators	1,770	.14	n.a.	n.a.
Computer operators, except peripheral equipment	610	.05	13	2
Data entry keyers, except composing	470	.04	11	2
All other office machine operators	390	.03	16	2
Switchboard operators	300	.02	n.a.	n.a.
Material recording, scheduling, dispatching, and distributing workers	10,660	.84	4	19
Stock clerks, stockroom, warehouse or storage yard	4,030	.32	n.a.	n.a.
Traffic, shipping, and receiving clerks	2,660	.21	5	11
All other material recording, scheduling, and distributing workers	1,190	.09	14	5
All other clerical and administrative support workers	180	.01	26	1
Service occupations	1,700	.13	n.a.	n.a.
First-line supervisors and manager/supervisors, service	825,770	65.13	n.a.	n.a.
Housekeepers	48,390	3.82	n.a.	n.a.
All other service supervisors and manager/supervisors	34,610	2.73	5	57
Detectives and investigators, except public	13,780	1.09	9	14
Guards and watch guards	2,060	.16	10	4
All other protective service workers	15,880	1.25	4	22
Food and beverage preparation and service workers	1,110	.09	17	2
Hosts and hostesses, restaurant, lounge or coffee shop	414,710	32.71	n.a.	n.a.
Bartenders	16,640	1.31	3	31
Waiters and waitresses	38,850	3.06	3	43
Food servers, outside	164,200	12.95	2	49
Dining room and cafeteria attendants, and bartender helpers	17,440	1.38	5	13
Counter attendants, lunchroom, coffee shop, or cafeteria	44,560	3.51	3	32
Bakers, bread and pastry	3,620	.29	8	7
Butchers and meat cutters	3,170	.25	5	11
Cooks, restaurant	940	.07	6	6
Cooks, institution or cafeteria	51,360	4.05	2	47
Cooks, specialty fast food	4,300	.34	7	11
Cooks, short order	1,400	.11	14	3
	3,370	.27	9	6

See footnotes at end of table.

Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 70)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Food preparation workers	40,960	3.23	3	37
Combined food preparation and service workers	6,160	.49	12	7
All other food service workers	17,740	1.40	5	14
Cleaning and building service workers, except private households	294,180	23.20	n.a.	n.a.
Maids and housekeeping cleaners	247,010	19.48	2	80
Janitors and cleaners, except maids and housekeeping cleaners	40,060	3.16	4	42
Elevator operators	460	.04	26	1
All other cleaning and building service workers, except private households	6,650	.52	7	7
Hairdressers, hairstylists, and cosmetologists	300	.02	28	1
Amusement and recreation attendants	21,670	1.71	12	6
Baggage porters and bellhops	21,240	1.68	3	26
All other service workers	6,230	.49	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	14,100	1.11	n.a.	n.a.
Gardeners and groundskeepers, except farm	13,800	1.09	5	28
All other agriculture, forestry, fishing, and related workers	300	.02	38	1
Production, construction, operating, maintenance, and material handling occupations	86,240	6.80	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	2,460	.19	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	810	.06	11	3
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	250	.02	17	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	1,400	.11	9	8
Inspectors and related occupations	240	.02	23	1
Mechanics, installers, and repairers	41,380	3.26	33	70
Maintenance repairers, general utility	38,300	3.02	3	60
Automotive mechanics	470	.04	10	2
Heating, air conditioning, and refrigeration mechanics and installers	1,030	.08	7	5
All other mechanics, installers, and repairers	1,580	.12	14	3
Construction trades workers, except material moving	6,040	.48	n.a.	n.a.
Carpenters	1,730	.14	7	7
Electricians	1,100	.09	7	5
Painters and paperhangers, construction and maintenance	2,560	.20	7	9
Plumbers, pipefitters, and steamfitters	650	.05	10	3
All other construction and extractive workers, except helpers	710	.06	11	1
Precision production occupations	240	.02	29	1
Machine setters, set-up operators, and tenders, except metal and plastic	21,510	1.70	n.a.	n.a.
Laundry and drycleaning machine operators and tenders, except pressing	20,610	1.63	3	33
All other machine setters and set-up operators, except metal and plastic	240	.02	16	1
All other machine operators and tenders, except metal and plastic	660	.05	19	1
Hand working occupations, including assemblers and fabricators	630	.05	20	2
Plant and system workers	1,500	.12	n.a.	n.a.
Stationary engineers	1,360	.11	11	3

See footnotes at end of table.

Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 70)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other plant and system operators	140	0.01	24	1
Motor vehicle operators	4,060	.32	n.a.	n.a.
Truck drivers, light, include delivery and route workers	700	.06	21	2
Bus drivers	650	.05	15	1
Taxi drivers and chauffeurs	2,430	.19	10	5
All other motor vehicle operators	280	.02	17	1
Parking lot attendants	3,220	.25	9	4
All other transportation and material moving equipment operators	920	.07	37	1
Freight, stock, and material movers, hand	620	.05	14	1
All other helpers, laborers, and material movers, hand	2,710	.21	13	4

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 72)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,002,860	100.00	--	--
Managerial and administrative occupations	30,220	3.01	n.a.	n.a.
Financial managers	10,330	1.03	3	12
Personnel, training, and labor relations managers	710	.07	8	1
Purchasing managers	260	.03	8	1
Marketing, advertising, and public relations managers	1,960	.20	6	3
Administrative services managers	550	.05	9	1
General managers and top executives	10,600	1.06	3	10
All other managers and administrators	5,810	.58	5	4
Professional, paraprofessional, and technical occupations	130,030	12.97	n.a.	n.a.
Management support workers	23,490	2.34	n.a.	n.a.
Accountants, auditors, and other financial specialists	22,450	2.24	n.a.	n.a.
Tax preparers	17,970	1.79	9	2
Accountants and auditors	4,200	.42	6	4
All other financial specialists	280	.03	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	160	.02	10	(³)
Personnel, training, and labor relations specialists	360	.04	12	(³)
All other management support workers	520	.05	n.a.	n.a.
Engineers	310	.03	10	1
Engineering and related technicians and technologists	110	.01	16	(³)
Computer scientists and related workers	840	.08	n.a.	n.a.
Systems analysts, electronic data processing	140	.01	15	(³)
Computer programmers	580	.06	17	1
Computer programmer aides	120	.01	14	(³)
Lecturers	11,570	1.15	7	1
Instructors and coaches, sports and physical training	33,920	3.38	4	4
All other teachers and instructors	8,020	.80	9	2
Registered nurses	2,060	.21	13	1
Licensed practical nurses	1,170	.12	20	(³)
Dietitians and nutritionists	620	.06	18	(³)
Dietetic technicians	1,010	.10	28	(³)
All other health professionals, paraprofessional and technicians	1,240	.12	19	(³)
Photographers	15,100	1.51	3	5
Funeral directors and morticians	22,060	2.20	1	12
Embalmers	6,970	.70	3	6
All other professional, paraprofessional, and technical workers	1,540	.15	n.a.	n.a.
Sales and related occupations	105,280	10.50	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	3,160	.32	7	2
Sales representatives, scientific and related products and services, except retail	430	.04	17	(³)
Sales representatives, except scientific and related products or services and retail	11,700	1.17	5	5
Counter and rental clerks	60,810	6.06	2	13
Cashiers	14,860	1.48	5	5
All other sales and related workers	14,320	1.43	4	3
Clerical and administrative support occupations	100,840	10.06	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	2,310	.23	6	3

See footnotes at end of table.

Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 72)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Secretaries	12,530	1.25	2	14
Receptionists and information clerks	35,330	3.52	2	22
Typists	1,680	.17	10	2
Typists, word processing equipment	590	.06	16	1
Personnel clerks, except payroll and timekeeping	180	.02	11	(³)
File clerks	620	.06	24	1
Order clerks, materials, merchandise, and service	3,730	.37	8	2
Bookkeeping, accounting, and auditing clerks	14,090	1.40	3	15
Payroll and timekeeping clerks	2,950	.29	5	4
Billing, cost and rate clerks	330	.03	12	(³)
General office clerks	15,650	1.56	3	12
Electronic data processing and other office machine operators	1,690	.17	n.a.	n.a.
Billing, posting, and calculating machine operators	180	.02	15	(³)
Computer operators, except peripheral equipment	500	.05	20	1
Data entry keyers, except composing	760	.08	11	1
All other office machine operators	250	.02	n.a.	n.a.
Switchboard operators	660	.07	11	1
Material recording, scheduling, dispatching, and distributing workers	4,140	.41	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	2,420	.24	8	2
All other material recording, scheduling, and distributing workers	1,720	.17	18	1
All other clerical and administrative support workers	4,360	.43	n.a.	n.a.
Service occupations	366,880	36.58	n.a.	n.a.
First-line supervisors and manager/supervisors, service	16,230	1.62	3	11
Guards and watch guards	640	.06	21	(³)
Food and beverage preparation and service workers	1,600	.16	17	(³)
Ambulance drivers and attendants, except emergency medical technicians	720	.07	14	(³)
Cleaning and building service workers, except private households	27,410	2.73	n.a.	n.a.
Maids and housekeeping cleaners	5,760	.57	5	5
Janitors and cleaners, except maids and housekeeping cleaners	19,500	1.94	4	13
All other cleaning and building service workers, except private households	2,150	.21	18	(³)
Barbers	18,480	1.84	4	4
Hairdressers, hairstylists, and cosmetologists	256,000	25.53	1	45
Manicurists	11,480	1.14	4	7
Shampooers	11,300	1.13	4	6
Child care workers	1,460	.15	11	1
Funeral attendants	13,580	1.35	2	8
All other service workers	7,980	.80	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	2,590	.26	n.a.	n.a.
Gardeners and groundskeepers, except farm	2,590	.26	6	3
Production, construction, operating, maintenance, and material handling occupations	267,020	26.63	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	5,140	.51	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	550	.05	9	1

See footnotes at end of table.

Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 72)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	690	0.07	10	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	3,900	.39	n.a.	n.a.
Production inspectors, testers, graders, sorters, samplers, and weighers	6,770	.68	5	3
All other inspectors, testers and related occupations	620	.06	14	(³)
Mechanics, installers, and repairers	17,670	1.76	49	16
Machinery maintenance mechanics	2,210	.22	9	2
Maintenance repairers, general utility	6,530	.65	5	6
Automotive mechanics	480	.05	7	1
Bus and truck mechanics and diesel engine specialists	220	.02	10	(³)
Menders - garments, linens, and related	6,420	.64	4	5
All other mechanics, installers, and repairers	1,810	.18	14	1
Construction trades workers, except material moving	130	.01	n.a.	n.a.
Carpenters	130	.01	25	(³)
All other construction and extractive workers, except helpers	290	.03	n.a.	n.a.
Precision textile, apparel, and furnishings workers	50,220	5.01	n.a.	n.a.
Custom tailors and sewers	9,660	.96	5	6
Shoe and leather workers and repairers, precision	4,110	.41	4	1
Spotters, dry cleaning	13,760	1.37	3	9
Pressers, delicate fabrics	21,290	2.12	3	8
Precision dyers	480	.05	18	(³)
All other precision textile, apparel, and furnishings workers	920	.09	20	(³)
Precision workers, nec	2,890	.29	n.a.	n.a.
Precision photographic process workers	2,470	.25	8	1
All other precision workers, nec	420	.04	24	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	99,680	9.94	n.a.	n.a.
Sewing machine operators, garment	4,360	.43	7	3
Sewing machine operators, nongarment	690	.07	26	(³)
Shoe sewing machine operators and tenders	560	.06	22	(³)
Laundry and drycleaning machine operators and tenders, except pressing	43,790	4.37	3	14
Pressing machine operators and tenders, textile, garment, and related materials	45,340	4.52	2	13
Photographic processing machine operators and tenders	2,970	.30	8	1
Furnace, kiln, oven, drier, or kettle operators and tenders	860	.09	10	1
All other machine setters and set-up operators, except metal and plastic	100	.01	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	1,010	.10	19	(³)
Other hand workers, nec	12,970	1.29	n.a.	n.a.
Pressers, hand	5,270	.53	7	3
Sewers, hand	800	.08	14	1
All other hand workers, nec	6,900	.69	7	2
Plant and system workers	240	.02	22	(³)
Motor vehicle operators	33,440	3.33	n.a.	n.a.
Truck drivers, light, include delivery and route workers	14,400	1.44	3	8
Taxi drivers and chauffeurs	1,700	.17	8	1
Driver/sales workers	17,340	1.73	3	5
All other transportation and material moving equipment operators	2,250	.22	20	(³)
Helpers - mechanics and repairers	420	.04	15	(³)

See footnotes at end of table.

Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 72)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Machine feeders and offbearers	14,480	1.44	5	3
Freight, stock, and material movers, hand	4,420	.44	7	2
All other helpers, laborers, and material movers, hand	15,390	1.53	4	3

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	4,069,420	100.00	--	--
Managerial and administrative occupations	281,770	6.92	n.a.	n.a.
Financial managers	41,870	1.03	2	24
Personnel, training, and labor relations managers	15,350	.38	4	9
Purchasing managers	5,310	.13	6	4
Marketing, advertising, and public relations managers	47,650	1.17	3	15
Administrative services managers	17,760	.44	4	8
General managers and top executives	109,420	2.69	2	38
All other managers and administrators	44,410	1.09	4	10
Professional, paraprofessional, and technical occupations	771,460	18.96	n.a.	n.a.
Management support workers	130,350	3.20	n.a.	n.a.
Accountants, auditors, and other financial specialists	37,190	.91	n.a.	n.a.
Credit analysts	3,290	.08	10	1
Accountants and auditors	25,430	.62	5	10
Budget analysts	2,310	.06	7	1
All other financial specialists	6,160	.15	10	2
Purchasing agents, except wholesale and retail trade, and farm products	10,160	.25	5	4
Employment interviewers, private or public employment service	39,800	.98	6	5
Personnel, training, and labor relations specialists	11,470	.28	11	4
Cost estimators	2,990	.07	11	1
Management analysts	14,140	.35	9	2
Tax examiners, collectors, and revenue agents	550	.01	24	(³)
All other management support workers	14,050	.35	8	2
Engineers	79,920	1.96	n.a.	n.a.
Aeronautical and astronautical engineers	2,310	.06	27	(³)
Metallurgists, and metallurgical, ceramic, and materials engineers	1,950	.05	18	(³)
Petroleum engineers	670	.02	34	(³)
Chemical engineers	5,430	.13	19	1
Nuclear engineers	2,360	.06	22	(³)
Civil engineers, including traffic	4,980	.12	11	1
Electrical and electronic engineers	35,190	.86	7	3
Industrial engineers, except safety	3,640	.09	13	1
Safety engineers, except mining	920	.02	21	(³)
Mechanical engineers	14,480	.36	9	2
All other engineers	7,990	.20	n.a.	n.a.
Architects, except landscape and marine	1,320	.03	21	(³)
Surveying and mapping scientists	740	.02	32	(³)
Engineering and related technicians and technologists	71,310	1.75	n.a.	n.a.
Civil engineering technicians and technologists	6,830	.17	16	1
Electrical and electronic engineering technicians and technologists	24,400	.60	8	2
Industrial engineering technicians and technologists	820	.02	20	(³)
Mechanical engineering technicians and technologists	6,750	.17	10	1
Drafters	18,530	.46	7	3
Surveying and mapping technicians and technologists	2,830	.07	20	(³)
All other engineering and related technicians and technologists	11,150	.27	10	1
Physical scientists	20,270	.50	n.a.	n.a.
Physicists and astronomers	4,640	.11	23	(³)
Chemists, except biochemists	9,920	.24	9	2

See footnotes at end of table.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Geologists, geophysicists, and oceanographers	2,430	0.06	17	1
All other physical scientists	3,280	.08	15	(³)
Life scientists	8,280	.20	n.a.	n.a.
Agricultural and food scientists	1,920	.05	22	(³)
Biological scientists	5,200	.13	13	1
All other life scientists	1,160	.03	n.a.	n.a.
Physical and life science technicians and technologists	18,760	.46	n.a.	n.a.
Biological, agricultural, and food technicians and technologists, except health	3,740	.09	16	(³)
Chemical technicians and technologists, except health	7,610	.19	11	1
Nuclear technicians and technologists	1,540	.04	28	(³)
Petroleum technicians and technologists	1,340	.03	32	(³)
All other physical and life science technicians and technologists	4,530	.11	18	(³)
Computer scientists and related workers	172,330	4.23	n.a.	n.a.
Systems analysts, electronic data processing	58,040	1.43	4	7
Computer programmers	98,990	2.43	3	10
Computer programmer aides	15,300	.38	5	4
Mathematical scientists and related workers	17,550	.43	n.a.	n.a.
Operations and systems researchers and analysts, except computer	9,150	.22	8	2
Statisticians	2,720	.07	13	1
Financial analysts, statistical	2,140	.05	18	(³)
All other mathematical scientists	2,910	.07	15	(³)
Mathematical technicians	630	.02	31	(³)
Social scientists, including urban and regional planners	12,630	.31	n.a.	n.a.
Economists, including market research analysts	8,880	.22	10	1
Urban and regional planners	830	.02	29	(³)
Psychologists	1,340	.03	22	(³)
All other social scientists	1,580	.04	21	(³)
Lawyers	1,700	.04	9	1
Legal assistants and technicians, except clerical	1,590	.04	23	(³)
Librarians, professional	2,050	.05	11	1
Vocational and educational counselors	940	.02	34	(³)
Instructional coordinators	2,480	.06	13	1
Registered nurses	36,890	.91	7	2
Licensed practical nurses	24,040	.59	8	1
All other health professionals, paraprofessional and technicians	37,210	.91	9	2
Writers and editors	15,070	.37	5	5
Technical writers	6,370	.16	7	2
Public relations specialists and publicity writers	11,130	.27	9	3
Reporters and correspondents	2,890	.07	12	(³)
Photographers	11,590	.28	8	3
Artists and related workers	29,570	.73	4	6
Designers, except interior designers	19,140	.47	6	3
Interior designers	7,560	.19	11	1
Merchandise displayers and window trimmers	1,240	.03	32	(³)
All other professional, paraprofessional, and technical workers	26,540	.65	n.a.	n.a.
Sales and related occupations	216,520	5.32	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	29,300	.72	3	12
Sales representatives and salespersons, services	88,350	2.17	n.a.	n.a.
Sales agents, selected business services	46,670	1.15	3	14
Sales agents, advertising	23,360	.57	6	4

See footnotes at end of table.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other sales representatives and salespersons, service	18,320	0.45	8	3
Sales engineers	3,130	.08	14	1
Sales representatives, scientific and related products and services, except retail	9,610	.24	8	2
Sales representatives, except scientific and related products or services and retail	18,680	.46	6	4
Counter and rental clerks	23,180	.57	7	3
Cashiers	7,780	.19	17	1
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers	11,710	.29	13	1
Demonstrators, promoters, and models	7,630	.19	14	1
All other sales and related workers	17,150	.42	8	2
Clerical and administrative support occupations	1,144,900	28.13	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	60,710	1.49	2	26
Credit authorizers	1,540	.04	29	(⁹)
Credit checkers	8,430	.21	7	2
Investigators, clerical	3,340	.08	12	1
Bill and account collectors	27,900	.69	3	6
Library assistants and bookmobile drivers	1,080	.03	10	1
Advertising clerks	1,620	.04	25	(⁹)
Proofreaders and copy markers	3,940	.10	13	1
Secretaries	171,970	4.23	2	40
Stenographers	11,930	.29	7	2
Receptionists and information clerks	44,500	1.09	3	16
Typists	61,470	1.51	4	9
Typists, word processing equipment	51,400	1.26	5	9
Personnel clerks, except payroll and timekeeping	5,020	.12	7	3
Correspondence clerks	3,940	.10	14	1
File clerks	24,270	.60	5	6
Order clerks, materials, merchandise, and service	12,610	.31	7	4
Statistical clerks	5,510	.14	16	1
Interviewing clerks, except personnel and social welfare	40,710	1.00	7	2
Bookkeeping, accounting, and auditing clerks	72,900	1.79	2	28
Payroll and timekeeping clerks	11,060	.27	4	9
Billing, cost and rate clerks	8,580	.21	6	3
General office clerks	145,430	3.57	3	25
Electronic data processing and other office machine operators	163,590	4.02	n.a.	n.a.
Billing, posting, and calculating machine operators	4,620	.11	12	1
Duplicating machine operators	8,860	.22	8	3
Mail machine operators, preparation and handling	16,190	.40	7	2
Computer operators, except peripheral equipment	40,070	.98	4	8
Peripheral EDP equipment operators	7,920	.19	9	2
Data entry keyers, except composing	76,260	1.87	4	9
Data keyers, composing	4,950	.12	15	1
All other office machine operators	4,720	.12	15	1
Switchboard operators	53,890	1.32	5	9
Mail clerks, except mail machine operators and postal service	16,680	.41	7	4
Messengers	23,490	.58	10	4
Material recording, scheduling, dispatching, and distributing workers	68,990	1.70	n.a.	n.a.
Dispatchers, except police, fire, and ambulance	7,500	.18	10	3
Production, planning, and expediting clerks	16,550	.41	7	4
Stock clerks, stockroom, warehouse or storage yard	24,440	.60	10	4

See footnotes at end of table.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Traffic, shipping, and receiving clerks	11,490	0.28	5	4
All other material recording, scheduling, and distributing workers	9,010	.22	14	1
All other clerical and administrative support workers	38,400	.94	9	4
Service occupations	1,064,920	26.17	n.a.	n.a.
First-line supervisors and manager/supervisors, service	36,590	.90	n.a.	n.a.
Housekeepers	16,580	.41	6	4
All other service supervisors and manager/supervisors	20,010	.49	4	6
Detectives and investigators, except public	14,580	.36	11	2
Guards and watch guards	384,020	9.44	1	8
All other protective service workers	18,730	.46	10	2
Food and beverage preparation and service workers	28,940	.71	14	1
Cleaning and building service workers, except private households	539,160	13.25	n.a.	n.a.
Maids and housekeeping cleaners	46,110	1.13	6	3
Janitors and cleaners, except maids and housekeeping cleaners	438,080	10.77	1	19
Pest controllers and assistants	38,310	.94	4	4
All other cleaning and building service workers, except private households	16,660	.41	n.a.	n.a.
All other service workers	42,900	1.05	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	14,430	.35	n.a.	n.a.
Gardeners and groundskeepers, except farm	9,900	.24	10	2
Animal caretakers, except farm	870	.02	31	(³)
All other agriculture, forestry, fishing, and related workers	3,660	.09	23	(³)
Production, construction, operating, maintenance, and material handling occupations	575,420	14.14	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	20,880	.51	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	7,560	.19	6	3
First-line supervisors and manager/supervisors - construction trades and extractive workers	2,860	.07	12	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	2,300	.06	12	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	8,160	.20	6	3
Precision inspectors, testers, and graders	7,110	.17	13	1
Production inspectors, testers, graders, sorters, samplers, and weighers	7,260	.18	10	1
All other inspectors, testers and related occupations	6,660	.16	14	1
Mechanics, installers, and repairers	83,670	2.06	170	15
Maintenance repairers, general utility	35,460	.87	7	7
Automotive mechanics	3,150	.08	13	1
Bus and truck mechanics and diesel engine specialists	3,420	.08	15	1
Data processing equipment repairers	11,880	.29	12	1
Electric home appliance and power tool repairers	440	.01	32	(³)

See footnotes at end of table.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Electronics repairers, commercial and industrial equipment	3,920	0.10	15	1
All other electrical and electronic equipment mechanics, installers, and repairers	12,380	.30	12	1
Heating, air conditioning, and refrigeration mechanics and installers	1,530	.04	20	(³)
Coin and vending machine servicers and repairers	1,320	.03	31	(³)
All other mechanics, installers, and repairers	10,170	.25	12	2
Construction trades workers, except material moving	24,390	.60	n.a.	n.a.
Carpenters	8,540	.21	9	1
Electricians	8,180	.20	11	1
Painters and paperhangers, construction and maintenance	4,350	.11	12	1
Plumbers, pipefitters, and steamfitters	3,320	.08	13	1
All other construction and extractive workers, except helpers	13,200	.32	14	1
Precision metal workers	4,630	.11	n.a.	n.a.
Machinists	4,630	.11	11	1
Precision workers, nec	12,810	.31	n.a.	n.a.
Precision photographic process workers	7,200	.18	9	2
All other precision workers, nec	5,610	.14	12	1
Machine setters, set-up operators, and tenders, metal and plastic	2,900	.07	n.a.	n.a.
Machine forming operators and tenders, metal and plastic	2,900	.07	22	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	73,790	1.81	n.a.	n.a.
Offset lithographic press setters and set-up operators	2,260	.06	13	1
Printing press machine operators and tenders	8,600	.21	8	2
Photoengraving and lithographing machine operators and tenders	3,620	.09	13	1
Bindery machine operators	5,860	.14	29	1
Photographic processing machine operators and tenders	28,360	.70	6	3
Packaging and filling machine operators and tenders	7,440	.18	13	1
All other machine setters and set-up operators, except metal and plastic	6,070	.15	13	1
All other machine operators and tenders, except metal and plastic	11,580	.28	10	1

See footnotes at end of table.

Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 73)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Other hand workers, nec	24,810	0.61	n.a.	n.a.
Welders and cutters	3,930	.10	11	1
Solderers and brazers	2,490	.06	19	(³)
Painting, coating, and decorating, workers, hand	1,200	.03	22	(³)
Engraving and printing workers, hand	1,390	.03	22	(³)
All other hand workers, nec	15,800	.39	10	1
Plant and system workers	1,920	.05	17	(³)
Motor vehicle operators	47,960	1.18	n.a.	n.a.
Truck drivers, light, include delivery and route workers	34,830	.86	7	7
Taxi drivers and chauffeurs	2,940	.07	26	(³)
Driver/sales workers	10,190	.25	10	2
Aircraft pilots and flight engineers	1,750	.04	24	(³)
Material moving equipment operators	8,360	.21	n.a.	n.a.
Industrial truck and tractor operators	8,360	.21	14	1
All other transportation and material moving equipment operators	25,110	.62	10	2
Helpers - mechanics and repairers	7,010	.17	10	2
Freight, stock, and material movers, hand	45,520	1.12	7	3
Hand packers and packagers	46,480	1.14	8	2
All other helpers, laborers, and material movers, hand	109,200	2.68	5	5

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 24. Automotive repair, services, and garages: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 75)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	677,880	100.00	--	--
Managerial and administrative occupations	22,600	3.33	n.a.	n.a.
Financial managers	9,810	1.45	3	15
Personnel, training, and labor relations managers	250	.04	11	1
Purchasing managers	230	.03	12	1
Marketing, advertising, and public relations managers	520	.08	11	1
Administrative services managers	490	.07	11	1
General managers and top executives	7,660	1.13	4	10
All other managers and administrators	3,640	.54	7	3
Professional, paraprofessional, and technical occupations	8,770	1.29	n.a.	n.a.
Management support workers	6,810	1.00	n.a.	n.a.
Accountants, auditors, and other financial specialists	3,800	.56	n.a.	n.a.
Accountants and auditors	3,530	.52	5	6
All other financial specialists	270	.04	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	1,980	.29	7	3
Personnel, training, and labor relations specialists	290	.04	22	(³)
Cost estimators	310	.05	22	(³)
All other management support workers	430	.06	20	(³)
Engineering and related technicians and technologists	310	.05	29	(³)
Computer scientists and related workers	1,060	.16	n.a.	n.a.
Systems analysts, electronic data processing	210	.03	22	(³)
Computer programmers	850	.13	15	1
All other professional, paraprofessional, and technical workers	590	.09	n.a.	n.a.
Sales and related occupations	83,470	12.31	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	18,930	2.79	2	23
Sales representatives, scientific and related products and services, except retail	460	.07	19	(³)
Sales representatives, except scientific and related products or services and retail	3,950	.58	8	3
Salespersons, retail	2,080	.31	11	2
Salespersons, parts	13,790	2.03	4	13
Counter and rental clerks	25,910	3.82	3	11
Cashiers	15,960	2.35	4	9
All other sales and related workers	2,390	.35	11	1
Clerical and administrative support occupations	74,430	10.98	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,610	.24	8	3
Adjustment clerks	280	.04	18	(³)
Secretaries	14,550	2.15	3	20
Receptionists and information clerks	3,540	.52	6	6
Typists	1,660	.24	7	2
Typists, word processing equipment	220	.03	16	(³)
Personnel clerks, except payroll and timekeeping	200	.03	14	(³)
File clerks	380	.06	15	1
Order clerks, materials, merchandise, and service	330	.05	23	(³)
Bookkeeping, accounting, and auditing clerks	21,910	3.23	2	30
Payroll and timekeeping clerks	2,240	.33	6	4
Billing, cost and rate clerks	370	.05	15	1

See footnotes at end of table.

Table 24. Automotive repair, services, and garages: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 75)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
General office clerks	20,590	3.04	3	22
Electronic data processing and other office machine operators	1,350	.20	n.a.	n.a.
Billing, posting, and calculating machine operators	140	.02	21	(³)
Computer operators, except peripheral equipment	290	.04	16	(³)
Data entry keyers, except composing	590	.09	12	1
All other office machine operators	330	.05	n.a.	n.a.
Switchboard operators	250	.04	10	1
Material recording, scheduling, dispatching, and distributing workers	3,930	.58	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	3,220	.48	6	5
Traffic, shipping, and receiving clerks	280	.04	13	1
All other material recording, scheduling, and distributing workers	430	.06	16	1
All other clerical and administrative support workers	1,020	.15	n.a.	n.a.
Service occupations	11,290	1.67	n.a.	n.a.
First-line supervisors and manager/supervisors, service	1,520	.22	9	1
Guards and watch guards	970	.14	15	1
Cleaning and building service workers, except private households	6,560	.97	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	6,250	.92	5	9
All other cleaning and building service workers, except private households	310	.05	35	(³)
All other service workers	2,240	.33	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	310	.05	n.a.	n.a.
Gardeners and groundskeepers, except farm	310	.05	19	1
Production, construction, operating, maintenance, and material handling occupations	477,010	70.37	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	38,070	5.62	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	35,750	5.27	2	37
First-line supervisors and manager/supervisors - construction trades and extractive workers	80	.01	36	(³)
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	1,340	.20	8	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	900	.13	10	1
Precision inspectors, testers, and graders	440	.06	30	(³)
All other inspectors, testers and related occupations	660	.10	25	(³)
Mechanics, installers, and repairers	272,790	40.24	n.a.	n.a.
Machinery maintenance mechanics	360	.05	n.a.	n.a.
Maintenance repairers, general utility	8,020	1.18	7	6
Automotive mechanics	123,970	18.29	2	42
Automotive body and related repairers	88,330	13.03	2	28
Bus and truck mechanics and diesel engine specialists	31,420	4.64	4	10
Small engine specialists	240	.04	29	(³)

See footnotes at end of table.

Table 24. Automotive repair, services, and garages: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 75)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Electric motor, transformer, and related repairers	910	0.13	30	(³)
Electrical installers and repairers, transportation equipment	1,120	.17	23	(³)
All other electrical and electronic equipment mechanics, installers, and repairers	460	.07	37	(³)
Heating, air conditioning, and refrigeration mechanics and installers	150	.02	40	(³)
Installers and repairers, manufactured buildings, mobile homes, and travel trailers	300	.04	36	(³)
Tire repairers and changers	10,870	1.60	7	6
All other mechanics, installers, and repairers	6,640	.98	n.a.	n.a.
Construction trades workers, except material moving	250	.04	n.a.	n.a.
Carpenters	250	.04	27	(³)
All other construction and extractive workers, except helpers	510	.08	n.a.	n.a.
Precision metal workers	4,210	.62	n.a.	n.a.
Machinists	4,020	.59	11	2
All other precision metal workers	190	.03	n.a.	n.a.
Precision textile, apparel, and furnishings workers	5,420	.80	n.a.	n.a.
Upholsterers	5,420	.80	10	2
Precision workers, nec	220	.03	48	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	11,970	1.77	n.a.	n.a.
Sewing machine operators, nongarment	240	.04	38	(³)
Painters, transportation equipment	9,290	1.37	6	6
Coating, painting, and spraying machine setters and set-up operators	510	.08	25	(³)
Coating, painting, and spraying machine operators and tenders	180	.03	42	(³)
All other machine setters and set-up operators, except metal and plastic	620	.09	31	(³)
All other machine operators and tenders, except metal and plastic	1,130	.17	20	1
Other hand workers, nec	5,780	.85	n.a.	n.a.
Welders and cutters	4,080	.60	11	3
All other hand workers, nec	1,700	.25	n.a.	n.a.
Motor vehicle operators	32,860	4.85	n.a.	n.a.
Truck drivers, light, include delivery and route workers	14,790	2.18	5	10
Driver/sales workers	920	.14	20	1
All other motor vehicle operators	17,150	2.53	6	4
Service station attendants	16,600	2.45	5	7
Parking lot attendants	17,030	2.51	5	2
All other transportation and material moving equipment operators	6,190	.91	11	1
Helpers - mechanics and repairers	2,250	.33	10	2
Freight, stock, and material movers, hand	2,240	.33	11	2
Vehicle washers and equipment cleaners	53,300	7.86	2	18
All other helpers, laborers, and material movers, hand	6,220	.92	8	3

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 76)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	311,060	100.00	--	--
Managerial and administrative occupations	10,500	3.38	n.a.	n.a.
Financial managers	5,430	1.75	3	17
Personnel, training, and labor relations managers	90	.03	13	1
Purchasing managers	140	.05	11	1
Marketing, advertising, and public relations managers	180	.06	12	1
Administrative services managers	210	.07	20	1
General managers and top executives	3,370	1.08	4	9
All other managers and administrators	1,080	.35	13	2
Professional, paraprofessional, and technical occupations	12,050	3.87	n.a.	n.a.
Management support workers	4,330	1.39	n.a.	n.a.
Accountants, auditors, and other financial specialists	1,780	.57	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products	2,190	.70	4	7
Personnel, training, and labor relations specialists	90	.03	21	(³)
Cost estimators	140	.05	16	(³)
All other management support workers	130	.04	26	(³)
Engineers	2,240	.72	23	1
Engineering and related technicians and technologists	4,110	1.32	7	5
Physical and life science technicians and technologists	280	.09	42	(³)
Computer scientists and related workers	310	.10	n.a.	n.a.
Systems analysts, electronic data processing	120	.04	33	(³)
Computer programmers	190	.06	24	(³)
Health practitioners, technologists, technicians, and related health workers	80	.03	n.a.	n.a.
All other professional, paraprofessional, and technical workers	700	.23	n.a.	n.a.
Sales and related occupations	26,710	8.59	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	8,600	2.76	3	22
Sales representatives, scientific and related products and services, except retail	500	.16	16	1
Sales representatives, except scientific and related products or services and retail	1,920	.62	8	3
Salespersons, retail	12,430	4.00	4	20
Salespersons, parts	880	.28	13	1
Counter and rental clerks	320	.10	20	1
Cashiers	1,010	.32	12	2
All other sales and related workers	1,050	.34	12	1
Clerical and administrative support occupations	47,170	15.16	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	740	.24	9	2
Secretaries	11,450	3.68	2	31
Receptionists and information clerks	240	.08	13	1
Typists	1,940	.62	6	5
Typists, word processing equipment	330	.11	11	1
Personnel clerks, except payroll and timekeeping	60	.02	16	(³)
File clerks	90	.03	17	(³)
Order clerks, materials, merchandise, and service	560	.18	14	1

See footnotes at end of table.

Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 76)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Bookkeeping, accounting, and auditing clerks	11,140	3.58	2	33
Payroll and timekeeping clerks	1,070	.34	6	5
Billing, cost and rate clerks	200	.06	13	1
General office clerks	13,120	4.22	2	29
Electronic data processing and other				
office machine operators	950	.31	n.a.	n.a.
Billing, posting, and calculating machine operators	300	.10	12	1
Computer operators, except peripheral equipment	310	.10	17	1
All other office machine operators	340	.11	n.a.	n.a.
Switchboard operators	230	.07	24	1
Material recording, scheduling, dispatching, and distributing workers	4,510	1.45	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	1,560	.50	5	4
Traffic, shipping, and receiving clerks	2,540	.82	4	8
All other material recording, scheduling, and distributing workers	410	.13	23	1
All other clerical and administrative support workers	540	.17	n.a.	n.a.
Service occupations	3,730	1.20	n.a.	n.a.
First-line supervisors and manager/supervisors, service	160	.05	18	(³)
Guards and watch guards	180	.06	27	(³)
Food and beverage preparation and service workers	110	.04	50	(³)
Cleaning and building service workers, except private households	2,990	.96	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	2,480	.80	7	7
All other cleaning and building service workers, except private households	510	.16	43	(³)
All other service workers	290	.09	27	(³)
Agriculture, forestry, fishing, and related occupations	1,280	.41	n.a.	n.a.
Gardeners and groundskeepers, except farm	1,280	.41	26	1
Production, construction, operating, maintenance, and material handling occupations	209,620	67.39	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	14,090	4.53	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	13,120	4.22	2	31
First-line supervisors and manager/supervisors - construction trades and extractive workers	240	.08	16	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	70	.02	23	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	660	.21	10	2
Precision inspectors, testers, and graders	340	.11	16	1
All other inspectors, testers and related occupations	190	.06	37	(³)
Mechanics, installers, and repairers	105,530	33.93	n.a.	n.a.
Machinery maintenance mechanics	1,970	.63	n.a.	n.a.
Machinery maintenance mechanics, marine equipment	370	.12	37	(³)
All other machinery maintenance mechanics	1,600	.51	n.a.	n.a.

See footnotes at end of table.

Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 76)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Maintenance repairers, general utility	12,100	3.89	4	11
Automotive mechanics	3,010	.97	9	3
Automotive body and related repairers	430	.14	27	(³)
Motorcycle repairers	130	.04	40	(³)
Bus and truck mechanics and diesel engine specialists	1,810	.58	12	1
Mobile heavy equipment mechanics, except engines	920	.30	16	1
Farm equipment mechanics	480	.15	26	(³)
Small engine specialists	2,230	.72	10	3
Radio mechanics	3,000	.96	10	2
All other communications equipment mechanics, installers, and repairers	2,070	.67	17	1
Data processing equipment repairers	630	.20	20	1
Electronic home entertainment equipment repairers	13,890	4.47	4	10
Electric home appliance and power tool repairers	8,750	2.81	5	7
Electric motor, transformer, and related repairers	15,410	4.95	4	10
Electronics repairers, commercial and industrial equipment	1,530	.49	17	1
Electrical installers and repairers, transportation equipment	610	.20	25	(³)
All other electrical and electronic equipment mechanics, installers, and repairers	2,580	.83	13	1
Heating, air conditioning, and refrigeration mechanics and installers	11,900	3.83	5	8
Precision instrument repairers	4,950	1.59	8	3
Electromedical and biomedical equipment repairers	140	.05	50	(³)
Camera and photographic equipment repairers	930	.30	18	1
Watchmakers	1,080	.35	12	1
Musical instrument repairers and tuners	200	.06	34	(³)
Locksmiths and safe repairers	7,730	2.49	7	4
Office machine and cash register servicers	1,380	.44	13	1
Installers and repairers, manufactured buildings, mobile homes, and travel trailers	160	.05	35	(³)
Bicycle repairers	190	.06	38	(³)
All other mechanics, installers, and repairers	5,320	1.71	n.a.	n.a.
Construction trades workers, except material moving	10,920	3.51	n.a.	n.a.
Carpenters	940	.30	16	1
Electricians	1,560	.50	11	2
Painters and paperhangers, construction and maintenance	210	.07	26	(³)
Plumbers, pipefitters, and steamfitters	1,980	.64	10	2
Septic tank servicers and sewer pipe cleaners	6,230	2.00	8	4
All other construction and extractive workers, except helpers	720	.23	18	(³)
Precision metal workers	19,030	6.12	n.a.	n.a.
Precision instrument makers	160	.05	45	(³)
Machinists	9,410	3.03	5	11
Tool grinders, filers, sharpeners, and other precision grinders	4,290	1.38	9	3
Jewelers and silversmiths	2,000	.64	8	1
Precision hand workers, jewelry and related products	250	.08	30	(³)
Sheet-metal workers	370	.12	22	(³)
Boilermakers	2,020	.65	13	1
All other precision metal workers	530	.17	24	(³)
Precision woodworkers	4,770	1.53	n.a.	n.a.
Cabinetmakers and bench carpenters	790	.25	13	1
Furniture finishers	3,690	1.19	6	3
All other precision woodworkers	290	.09	26	(³)
Precision textile, apparel, and furnishings workers	8,510	2.74	n.a.	n.a.

See footnotes at end of table.

Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 76)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Upholsterers	8,510	2.74	3	8
Precision workers, nec	1,060	.34	20	1
Machine setters, set-up operators, and tenders, except metal and plastic	4,850	1.56	n.a.	n.a.
Sewing machine operators, nongarment	2,490	.80	5	5
Painters, transportation equipment	140	.05	24	(³)
Coating, painting, and spraying machine setters and set-up operators	230	.07	33	(³)
Coating, painting, and spraying machine operators and tenders	130	.04	43	(³)
All other machine setters and set-up operators, except metal and plastic	140	.05	40	(³)
All other machine operators and tenders, except metal and plastic	1,720	.55	18	1
Other hand workers, nec	24,260	7.80	n.a.	n.a.
Welders and cutters	21,670	6.97	3	16
Solderers and brazers	200	.06	35	(³)
Painting, coating, and decorating, workers, hand	300	.10	27	(³)
All other hand workers, nec	2,090	.67	n.a.	n.a.
Motor vehicle operators	7,220	2.32	n.a.	n.a.
Truck drivers, light, include delivery and route workers	6,290	2.02	3	15
Driver/sales workers	350	.11	24	1
All other motor vehicle operators	580	.19	19	1
All other transportation and material moving equipment operators	500	.16	n.a.	n.a.
Helpers - mechanics and repairers	690	.22	15	1
Freight, stock, and material movers, hand	2,260	.73	7	4
Vehicle washers and equipment cleaners	700	.23	35	(³)
All other helpers, laborers, and material movers, hand	3,890	1.25	9	4
All other production, construction, operating, maintenance, and material handling occupations	90	.03	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 26. Motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, June 1984

(SIC 78)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	229,000	100.00	--	--
Managerial and administrative occupations	23,430	10.23	n.a.	n.a.
Financial managers	2,320	1.01	17	11
Personnel, training, and labor relations managers	700	.31	28	4
Purchasing managers	280	.12	22	3
Marketing, advertising, and public relations managers	1,690	.74	19	10
Administrative services managers	4,680	2.04	6	34
Food service and lodging managers	860	.38	14	6
General managers and top executives	6,010	2.62	8	32
All other managers and administrators	6,890	3.01	9	18
Professional, paraprofessional, and technical occupations	52,940	23.12	n.a.	n.a.
Management support workers	3,760	1.64	n.a.	n.a.
Accountants, auditors, and other financial specialists	1,640	.72	n.a.	n.a.
Accountants and auditors	1,260	.55	13	7
Budget analysts	100	.04	21	1
All other financial specialists	280	.12	20	1
Purchasing agents, except wholesale and retail trade, and farm products	330	.14	27	3
Personnel, training, and labor relations specialists	210	.09	45	1
All other management support workers	1,580	.69	13	4
Engineers	870	.38	n.a.	n.a.
Engineering and related technicians and technologists	1,620	.71	n.a.	n.a.
Electrical and electronic engineering technicians and technologists	540	.24	36	3
All other engineering and related technicians and technologists	1,080	.47	39	2
Computer scientists and related workers	670	.29	n.a.	n.a.
Systems analysts, electronic data processing	300	.13	15	1
Computer programmers	370	.16	25	2
Librarians, professional	220	.10	43	2
Writers and editors	1,660	.72	21	6
Public relations specialists and publicity writers	530	.23	17	2
Announcers, radio and television	310	.14	31	1
Photographers	790	.34	37	4
Camera operators, television and motion picture	2,300	1.00	23	8
Film editors	2,630	1.15	22	7
Artists and related workers	2,310	1.01	24	5
Designers, except interior designers	1,100	.48	33	2
Music directors, singers, composers, and related workers	1,210	.53	39	1
Musicians, instrumental	2,320	1.01	31	1
Dancers and choreographers	710	.31	45	(³)
Producers, directors, actors, and other entertainers	24,880	10.86	4	9
All other professional, paraprofessional, and technical workers	5,050	2.21	n.a.	n.a.
Sales and related occupations	32,150	14.04	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	750	.33	21	6
Sales representatives, except scientific and related products or services and retail	2,150	.94	15	10
Cashiers	22,950	10.02	3	56

See footnotes at end of table.

Table 26. Motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 78)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers	1,100	0.48	28	2
All other sales and related workers	5,200	2.27	n.a.	n.a.
Clerical and administrative support occupations	27,050	11.81	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,370	.60	15	7
Secretaries	7,300	3.19	9	24
Stenographers	140	.06	35	1
Receptionists and information clerks	1,450	.63	17	8
Typists	610	.27	22	3
Typists, word processing equipment	280	.12	36	2
Personnel clerks, except payroll and timekeeping	170	.07	21	2
File clerks	300	.13	30	2
Order clerks, materials, merchandise, and service	460	.20	27	3
Bookkeeping, accounting, and auditing clerks	3,910	1.71	10	19
Billing, cost and rate clerks	440	.19	24	2
General office clerks	3,940	1.72	13	13
Electronic data processing and other office machine operators	1,040	.45	n.a.	n.a.
Billing, posting, and calculating machine operators	80	.03	42	1
Computer operators, except peripheral equipment	310	.14	18	2
Data entry keyers, except composing	530	.23	27	2
All other office machine operators	120	.05	n.a.	n.a.
Switchboard operators	340	.15	15	3
Material recording, scheduling, dispatching, and distributing workers	3,020	1.32	n.a.	n.a.
Production, planning, and expediting clerks	790	.34	27	4
Stock clerks, stockroom, warehouse or storage yard	460	.20	28	3
Traffic, shipping, and receiving clerks	1,460	.64	22	6
All other material recording, scheduling, and distributing workers	310	.14	24	1
All other clerical and administrative support workers	2,280	1.00	n.a.	n.a.
Service occupations	65,100	28.43	n.a.	n.a.
First-line supervisors and manager/supervisors, service	930	.41	16	5
Guards and watch guards	1,500	.66	12	5
All other protective service workers	200	.09	31	(³)
Food and beverage preparation and service workers	23,400	10.22	n.a.	n.a.
Waiters and waitresses	340	.15	38	(³)
Counter attendants, lunchroom, coffee shop, or cafeteria	14,770	6.45	6	30
Cooks, specialty fast food	790	.34	19	3
Food preparation workers	1,670	.73	20	5
Combined food preparation and service workers	3,810	1.66	19	2
All other food service workers	2,020	.88	n.a.	n.a.
Cleaning and building service workers, except private households	9,200	4.02	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	8,840	3.86	4	45
All other cleaning and building service workers, except private households	360	.16	n.a.	n.a.
Hairdressers, hairstylists, and cosmetologists	830	.36	39	(³)
Ushers, lobby attendants, and ticket takers	28,440	12.42	3	49
Wardrobe, and locker and dressing room attendants	260	.11	27	(³)
All other service workers	340	.15	n.a.	n.a.

See footnotes at end of table.

Table 26. Motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 78)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Agriculture, forestry, fishing, and related occupations	350	0.15	n.a.	n.a.
Gardeners and groundskeepers, except farm	350	.15	18	2
Production, construction, operating, maintenance, and material handling occupations	27,980	12.22	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	370	.16	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	60	.03	48	1
First-line supervisors and manager/supervisors - construction trades and extractive workers	90	.04	28	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	220	.10	n.a.	n.a.
Inspectors and related occupations	400	.17	32	2
Mechanics, installers, and repairers	1,870	.82	n.a.	n.a.
Maintenance repairers, general utility	1,230	.54	13	10
Camera and photographic equipment repairers	280	.12	47	2
All other mechanics, installers, and repairers	360	.16	n.a.	n.a.
Construction trades workers, except material moving	1,780	.78	n.a.	n.a.
Carpenters	820	.36	31	1
Electricians	580	.25	26	1
Painters and paperhangers, construction and maintenance	310	.14	31	1
Plumbers, pipefitters, and steamfitters	70	.03	29	(³)
All other construction and extractive workers, except helpers	130	.06	40	(³)
Precision metal workers	180	.08	n.a.	n.a.
Machinists	180	.08	35	(³)
Precision textile, apparel, and furnishings workers	60	.03	n.a.	n.a.
Custom tailors and sewers	60	.03	34	(³)
Precision printing workers	60	.03	n.a.	n.a.
Precision compositors, typesetters, and arrangers	60	.03	37	(³)
Precision workers, nec	1,200	.52	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic	17,170	7.50	n.a.	n.a.
Photographic processing machine operators and tenders	2,140	.93	27	3
All other machine setters and set-up operators, except metal and plastic	14,350	6.27	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	680	.30	n.a.	n.a.
Hand working occupations, including assemblers and fabricators	220	.10	n.a.	n.a.
Motor vehicle operators	1,190	.52	n.a.	n.a.
Truck drivers, light, include delivery and route workers	560	.24	32	2
Driver/sales workers	190	.08	50	(³)
All other motor vehicle operators	440	.19	33	1
Freight, stock, and material movers, hand	1,100	.48	43	2
All other helpers, laborers, and material movers, hand	1,450	.63	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	800	.35	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 27. Amusement and recreation services, except motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1984

(SIC 79)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	791,470	100.00	--	--
Managerial and administrative occupations	42,840	5.41	n.a.	n.a.
Financial managers	10,930	1.38	3	29
Personnel, training, and labor relations managers	720	.09	8	3
Purchasing managers	450	.06	7	3
Marketing, advertising, and public relations managers	6,180	.78	5	16
Administrative services managers	850	.11	10	3
Food service and lodging managers	6,820	.86	4	20
General managers and top executives	10,550	1.33	3	26
All other managers and administrators	6,340	.80	5	11
Professional, paraprofessional, and technical occupations	136,680	17.27	n.a.	n.a.
Management support workers	6,400	.81	n.a.	n.a.
Accountants, auditors, and other financial specialists	4,350	.55	n.a.	n.a.
Accountants and auditors	3,970	.50	4	12
Budget analysts	150	.02	13	1
All other financial specialists	230	.03	11	1
Purchasing agents, except wholesale and retail trade, and farm products	410	.05	12	2
Personnel, training, and labor relations specialists	360	.05	9	1
All other management support workers	1,280	.16	10	2
Engineers	500	.06	n.a.	n.a.
Electrical and electronic engineers	190	.02	17	1
All other engineers	310	.04	10	1
Engineering and related technicians and technologists	1,520	.19	n.a.	n.a.
Electrical and electronic engineering technicians and technologists	1,350	.17	18	2
All other engineering and related technicians and technologists	170	.02	38	(³)
Computer scientists and related workers	730	.09	n.a.	n.a.
Systems analysts, electronic data processing	110	.01	10	(³)
Computer programmers	500	.06	9	2
Computer programmer aides	120	.02	10	1
Recreation workers	9,070	1.15	9	6
Lecturers	110	.01	46	(³)
Instructors, nonvocational education	12,740	1.61	4	7
Instructors and coaches, sports and physical training	23,590	2.98	5	19
All other teachers and instructors	1,010	.13	24	1
Registered nurses	420	.05	9	1
All other health professionals, paraprofessional and technicians	1,100	.14	n.a.	n.a.
Public relations specialists and publicity writers	3,330	.42	7	8
Announcers, radio and television	2,950	.37	23	2
Announcers, except radio and television	320	.04	18	1
Broadcast technicians	420	.05	22	1
Artists and related workers	370	.05	19	1
Designers, except interior designers	1,210	.15	15	2
Music directors, singers, composers, and related workers	3,720	.47	13	4
Musicians, instrumental	30,710	3.88	6	7
Dancers and choreographers	6,700	.85	11	3
Producers, directors, actors, and other entertainers	12,490	.58	9	4
Athletes, coaches, umpires, and related workers	12,020	1.52	6	6
All other professional, paraprofessional, and technical workers	5,250	.66	n.a.	n.a.

See footnotes at end of table.

Table 27. Amusement and recreation services, except motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 79)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales and related occupations	65,880	8.32	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	1,730	.22	6	5
Sales representatives, scientific and related products and services, except retail	300	.04	34	(³)
Sales representatives, except scientific and related products or services and retail	1,460	.18	9	3
Counter and rental clerks	3,600	.45	8	3
Cashiers	49,100	6.20	2	27
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers	2,980	.38	14	2
All other sales and related workers	6,710	.85	7	4
Clerical and administrative support occupations	61,170	7.73	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	1,920	.24	5	7
Secretaries	12,210	1.54	4	28
Stenographers	200	.03	14	(³)
Receptionists and information clerks	9,250	1.17	6	15
Typists	1,490	.19	9	4
Typists, word processing equipment	590	.07	16	2
Personnel clerks, except payroll and timekeeping	370	.05	7	2
File clerks	300	.04	17	1
Order clerks, materials, merchandise, and service	880	.11	28	1
Bookkeeping, accounting, and auditing clerks	13,600	1.72	2	37
Payroll and timekeeping clerks	2,420	.31	5	9
Billing, cost and rate clerks	310	.04	19	1
General office clerks	10,310	1.30	4	19
Electronic data processing and other office machine operators	1,350	.17	n.a.	n.a.
Billing, posting, and calculating machine operators	230	.03	12	1
Computer operators, except peripheral equipment	490	.06	7	2
Data entry keyers, except composing	440	.06	9	2
All other office machine operators	190	.02	n.a.	n.a.
Switchboard operators	2,150	.27	7	5
Material recording, scheduling, dispatching, and distributing workers	2,070	.26	n.a.	n.a.
Production, planning, and expediting clerks	240	.03	15	1
Stock clerks, stockroom, warehouse or storage yard	950	.12	8	3
Traffic, shipping, and receiving clerks	280	.04	8	1
All other material recording, scheduling, and distributing workers	600	.08	18	(³)
All other clerical and administrative support workers	1,750	.22	n.a.	n.a.
Service occupations	372,820	47.10	n.a.	n.a.
First-line supervisors and manager/supervisors, service	8,780	1.11	n.a.	n.a.
Housekeepers	2,720	.34	5	7
All other service supervisors and manager/supervisors	6,060	.77	4	6
Detectives and investigators, except public	1,150	.15	6	1
Guards and watch guards	16,040	2.03	4	12
All other protective service workers	3,390	.43	13	2
Food and beverage preparation and service workers	174,890	22.10	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop	2,940	.37	4	7

See footnotes at end of table.

Table 27. Amusement and recreation services, except motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 79)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Bartenders	28,670	3.62	2	33
Waiters and waitresses	61,560	7.78	2	31
Dining room and cafeteria attendants, and bartender helpers	16,360	2.07	3	14
Counter attendants, lunchroom, coffee shop, or cafeteria	9,930	1.25	6	8
Cooks, restaurant	15,900	2.01	3	24
Cooks, specialty fast food	6,350	.80	6	7
Cooks, short order	3,020	.38	7	4
Food preparation workers	18,430	2.33	3	20
Combined food preparation and service workers	6,710	.85	7	2
All other food service workers	5,020	.63	6	4
Cleaning and building service workers, except private households	37,300	4.71	n.a.	n.a.
Maids and housekeeping cleaners	7,770	.98	4	10
Janitors and cleaners, except maids and housekeeping cleaners	27,710	3.50	2	35
All other cleaning and building service workers, except private households	1,820	.23	11	2
Hairdressers, hairstylists, and cosmetologists	180	.02	21	(*)
Amusement and recreation attendants	95,610	12.08	2	34
Guides	4,390	.55	13	2
Ushers, lobby attendants, and ticket takers	14,220	1.80	6	6
Wardrobe, and locker and dressing room attendants	3,700	.47	6	5
Child care workers	6,160	.78	4	10
All other service workers	7,010	.89	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	52,970	6.69	n.a.	n.a.
Gardeners and groundskeepers, except farm	44,490	5.62	2	28
Animal caretakers, except farm	8,060	1.02	7	3
All other agriculture, forestry, fishing, and related workers	420	.05	20	1
Production, construction, operating, maintenance, and material handling occupations	59,110	7.47	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	2,040	.26	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	710	.09	7	3
First-line supervisors and manager/supervisors - construction trades and extractive workers	300	.04	14	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	160	.02	13	1
All other first-line supervisors and manager/ supervisors - production, construction, maintenance and related	870	.11	11	2
Mechanics, installers, and repairers	31,520	3.98	n.a.	n.a.
Maintenance repairers, general utility	23,560	2.98	3	33
Small engine specialists	720	.09	17	2
Coin and vending machine servicers and repairers	3,880	.49	12	3
All other mechanics, installers, and repairers	3,360	.42	n.a.	n.a.
Construction trades workers, except material moving	5,670	.72	n.a.	n.a.
Carpenters	2,890	.37	8	4
Electricians	1,710	.22	9	3
Painters and paperhangers, construction and maintenance	750	.09	8	2
Plumbers, pipefitters, and steamfitters	320	.04	7	1

See footnotes at end of table.

Table 27. Amusement and recreation services, except motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 79)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other construction and extractive workers, except helpers	710	0.09	10	1
Precision metal workers	400	.05	n.a.	n.a.
Machinists	400	.05	15	(³)
Precision textile, apparel, and furnishings workers	490	.06	n.a.	n.a.
Custom tailors and sewers	490	.06	13	1
Precision workers, nec	1,000	.13	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic	1,900	.24	n.a.	n.a.
Laundry and drycleaning machine operators and tenders, except pressing	900	.11	6	2
All other machine setters and set-up operators, except metal and plastic	190	.02	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	810	.10	n.a.	n.a.
Hand working occupations, including assemblers and fabricators	900	.11	n.a.	n.a.
Plant and system workers	120	.02	21	(³)
Motor vehicle operators	2,370	.30	n.a.	n.a.
Truck drivers, light, include delivery and route workers	1,370	.17	14	2
Bus drivers	320	.04	20	1
Driver/sales workers	150	.02	49	(³)
All other motor vehicle operators	530	.07	16	1
Captains, water vessel	160	.02	36	(³)
Parking lot attendants	3,950	.50	6	3
All other transportation and motor vehicle operators	300	.04	26	(³)
Material moving equipment operators	870	.11	n.a.	n.a.
Industrial truck and tractor operators	450	.06	14	(³)
All other material moving equipment operators	420	.05	20	(³)
Helpers - mechanics and repairers	610	.08	10	1
Freight, stock, and material movers, hand	1,790	.23	20	2
All other helpers, laborers, and material movers, hand	3,610	.46	10	3
All other production, construction, operating, maintenance, and material handling occupations	700	.09	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 28. Health services, except hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1984

(SIC 80)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	3,070,950	100.00	--	--
Managerial and administrative occupations	104,560	3.40	n.a.	n.a.
Financial managers	24,990	.81	4	16
Personnel, training, and labor relations managers	3,030	.10	6	4
Purchasing managers	2,590	.08	8	3
Marketing, advertising, and public relations managers	1,680	.05	6	2
Administrative services managers	6,220	.20	4	5
Medicine and health services managers	36,270	1.18	3	20
Food service and lodging managers	5,950	.19	5	5
General managers and top executives	14,270	.46	4	10
All other managers and administrators	9,560	.31	5	5
Professional, paraprofessional, and technical occupations	1,113,020	36.24	n.a.	n.a.
Management support workers	18,670	.61	n.a.	n.a.
Accountants, auditors, and other financial specialists	14,240	.46	n.a.	n.a.
Accountants and auditors	13,050	.42	5	8
Budget analysts	400	.01	17	(³)
All other financial specialists	790	.03	18	- 1
Purchasing agents, except wholesale and retail trade, and farm products	660	.02	10	1
Personnel, training, and labor relations specialists	1,350	.04	8	2
All other management support workers	2,420	.08	n.a.	n.a.
Engineering and related technicians and technologists	910	.03	n.a.	n.a.
Industrial engineering technicians and technologists	360	.01	48	(³)
All other engineering and related technicians and technologists	550	.02	n.a.	n.a.
Physical scientists	400	.01	n.a.	n.a.
Life scientists	3,220	.10	n.a.	n.a.
Medical scientists	2,000	.07	17	1
All other life scientists	1,220	.04	n.a.	n.a.
Physical and life science technicians and technologists	920	.03	n.a.	n.a.
Computer scientists and related workers	2,960	.10	n.a.	n.a.
Systems analysts, electronic data processing	1,010	.03	15	1
Computer programmers	1,340	.04	12	1
Computer programmer aides	610	.02	12	1
Social scientists, including urban and regional planners	10,470	.34	n.a.	n.a.
Psychologists	10,100	.33	8	3
All other social scientists	370	.01	26	(³)
Social workers, medical and psychiatric	28,780	.94	5	9
Social workers, except medical and psychiatric	6,000	.20	6	4
Social service technicians	10,010	.33	11	3
Clergy	860	.03	11	1
Nursing instructors	2,290	.07	6	2
Teachers and instructors, vocational education and training	1,370	.04	18	(³)
All other teachers and instructors	2,750	.09	12	1
Physicians and surgeons	209,990	6.84	2	34
Dentists	70,120	2.28	2	17
Optometrists	13,900	.45	4	7
Podiatrists	4,370	.14	8	3
All other health diagnosing and treating practitioners	4,650	.15	8	2
Respiratory therapists	5,150	.17	12	1
Occupational therapists	4,990	.16	6	4
Physical therapists	20,620	.67	4	9

See footnotes at end of table.

Table 28. Health services, except hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 80)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Corrective and manual arts therapists	340	0.01	21	(³)
Speech pathologists and audiologists	6,090	.20	8	4
Recreational therapists	14,320	.47	3	7
All other therapists	2,530	.08	12	1
Registered nurses	209,940	6.84	2	32
Licensed practical nurses	173,440	5.65	2	24
Emergency medical technicians	450	.01	36	(³)
Physicians assistants	34,300	1.12	5	8
Opticians, dispensing and measuring	19,570	.64	4	7
Pharmacists	2,380	.08	7	2
Dietitians and nutritionists	7,080	.23	5	6
Dietetic technicians	5,140	.17	9	3
Medical and clinical laboratory technologists	30,910	1.01	4	6
Medical and clinical laboratory technicians	29,810	.97	4	7
Dental hygienists	78,280	2.55	2	15
Medical records technicians and technologists	9,680	.32	4	6
Nuclear medicine technologists	950	.03	19	(³)
Radiologic technologists	10,880	.35	9	3
Radiologic technicians	25,070	.82	5	7
Electroencephalograph technicians and technologists	660	.02	26	(³)
Electrocardiograph technicians and technologists	1,780	.06	15	1
Surgical technicians	1,160	.04	20	1
All other health professionals, paraprofessional and technicians	18,380	.60	7	4
Public relations specialists and publicity writers	1,120	.04	10	1
Photographers	390	.01	34	(³)
All other professional, paraprofessional, and technical workers	4,970	.16	n.a.	n.a.
Sales and related occupations	12,390	.40	n.a.	n.a.
Cashiers	9,000	.29	7	4
All other sales and related workers	3,390	.11	8	1
Clerical and administrative support occupations	634,910	20.67	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	16,730	.54	4	9
Medical secretaries	116,360	3.79	2	29
All other secretaries	78,110	2.54	3	26
Stenographers	1,020	.03	10	1
Receptionists and information clerks	163,080	5.31	1	46
Typists	30,500	.99	4	12
Typists, word processing equipment	5,270	.17	8	3
Personnel clerks, except payroll and timekeeping	1,270	.04	6	2
File clerks	20,550	.67	5	7
Order clerks, materials, merchandise, and service	1,020	.03	10	1
Procurement clerks	610	.02	9	1
Statistical clerks	1,380	.04	17	1
Interviewing clerks, except personnel and social welfare	2,300	.07	11	1
Bookkeeping, accounting, and auditing clerks	70,360	2.29	2	32
Payroll and timekeeping clerks	7,350	.24	6	7
Billing, cost and rate clerks	18,360	.60	5	8
General office clerks	66,500	2.17	3	21
Electronic data processing and other office machine operators	15,050	.49	n.a.	n.a.
Billing, posting, and calculating machine operators	7,790	.25	8	3
Computer operators, except peripheral equipment	2,040	.07	8	2
Data entry keyers, except composing	4,600	.15	7	3
All other office machine operators	620	.02	n.a.	n.a.
Switchboard operators	8,970	.29	5	6

See footnotes at end of table.

Table 28. Health services, except hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 80)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Material recording, scheduling, dispatching, and distributing workers	2,870	0.09	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	1,300	.04	6	2
Traffic, shipping, and receiving clerks	830	.03	10	1
All other material recording, scheduling, and distributing workers	740	.02	n.a.	n.a.
All other clerical and administrative support workers	7,250	.24	n.a.	n.a.
Service occupations	1,104,120	35.95	n.a.	n.a.
First-line supervisors and manager/supervisors, service	23,870	.78	n.a.	n.a.
Housekeepers	19,420	.63	4	8
All other service supervisors and manager/supervisors	4,450	.14	8	2
Guards and watch guards	3,090	.10	7	1
Food and beverage preparation and service workers	142,390	4.64	n.a.	n.a.
Waiters and waitresses	4,280	.14	15	(³)
Food servers, outside	14,650	.48	7	2
Dining room and cafeteria attendants, and bartender helpers	8,280	.27	9	1
Counter attendants, lunchroom, coffee shop, or cafeteria	400	.01	28	(³)
Bakers, bread and pastry	320	.01	18	(³)
Cooks, institution or cafeteria	39,790	1.30	2	10
Cooks, short order	960	.03	20	(³)
Food preparation workers	64,010	2.08	3	7
All other food service workers	9,700	.32	n.a.	n.a.
Health service and related workers	800,580	26.07	n.a.	n.a.
Dental assistants	136,630	4.45	1	20
Medical assistants	80,600	2.62	3	14
Nursing aides, orderlies, and attendants	497,460	16.20	1	12
Home health aides	47,980	1.56	6	3
Psychiatric aides	3,380	.11	26	(³)
Physical and corrective therapy assistants and aides	15,670	.51	4	7
Occupational therapy assistants and aides	2,770	.09	9	2
Ambulance drivers and attendants, except emergency medical technicians	770	.03	41	(³)
Pharmacy assistants	1,360	.04	16	1
All other health service workers	13,960	.45	7	3
Cleaning and building service workers, except private households	120,680	3.93	n.a.	n.a.
Maids and housekeeping cleaners	74,260	2.42	2	13
Janitors and cleaners, except maids and housekeeping cleaners	43,960	1.43	3	16
All other cleaning and building service workers, except private households	2,460	.08	n.a.	n.a.
Hairdressers, hairstylists, and cosmetologists	1,660	.05	8	1
Social welfare service aides	7,930	.26	15	1
Child care workers	1,190	.04	29	(³)
All other service workers	2,730	.09	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	6,040	.20	n.a.	n.a.
Gardeners and groundskeepers, except farm	6,040	.20	7	3
Production, construction, operating, maintenance, and material handling occupations	95,910	3.12	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	2,370	.08	n.a.	n.a.

See footnotes at end of table.

Table 28. Health services, except hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 80)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors - mechanics, installers and repairers	1,210	0.04	9	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	1,160	.04	n.a.	n.a.
Mechanics, installers, and repairers	17,670	.58	n.a.	n.a.
Maintenance repairers, general utility	16,310	.53	3	9
All other mechanics, installers, and repairers	1,360	.04	n.a.	n.a.
Construction trades workers, except material moving	1,060	.03	n.a.	n.a.
Precision workers, nec	35,000	1.14	n.a.	n.a.
Precision optical goods workers	380	.01	23	(³)
Precision dental laboratory technicians	33,720	1.10	4	4
All other precision workers, nec	900	.03	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic	25,510	.83	n.a.	n.a.
Laundry and drycleaning machine operators and tenders, except pressing	24,190	.79	3	7
Pressing machine operators and tenders, textile, garment, and related materials	370	.01	30	(³)
All other machine setters and set-up operators, except metal and plastic	240	.01	n.a.	n.a.
All other machine operators and tenders, except metal and plastic	710	.02	n.a.	n.a.
Hand working occupations, including assemblers and fabricators	1,140	.04	n.a.	n.a.
Motor vehicle operators	10,300	.34	n.a.	n.a.
Truck drivers, light, include delivery and route workers	6,430	.21	5	3
All other motor vehicle operators	3,870	.13	11	1
All other transportation and motor vehicle operators	660	.02	20	(³)
Helpers - laborers and material movers, hand	1,680	.05	24	(³)
All other production, construction, operating, maintenance, and material handling occupations	520	.02	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 29. Legal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984

(SIC 81)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	634,470	100.00	--	--
Managerial and administrative occupations	9,050	1.43	n.a.	n.a.
Financial managers	3,810	.60	10	11
Personnel, training, and labor relations managers	700	.11	8	5
Administrative services managers	630	.10	16	4
All other administrative managers	210	.03	n.a.	n.a.
Property and real estate managers and administrators	770	.12	26	1
General managers and top executives	2,240	.35	13	7
All other managers and administrators	690	.11	n.a.	n.a.
Professional, paraprofessional, and technical occupations	277,330	43.71	n.a.	n.a.
Management support workers	3,100	.49	n.a.	n.a.
Accountants, auditors, and other financial specialists	2,380	.38	n.a.	n.a.
Personnel, training, and labor relations specialists	280	.04	16	2
All other management support workers	440	.07	n.a.	n.a.
Computer scientists and related workers	770	.12	n.a.	n.a.
Systems analysts, electronic data processing	110	.02	19	1
Computer programmers	460	.07	30	2
Computer programmer aides	200	.03	25	1
Lawyers	206,810	32.60	1	86
Law clerks	22,040	3.47	5	29
Paralegal personnel	37,950	5.98	4	40
Title searchers	1,200	.19	24	3
Title examiners and abstractors	960	.15	29	2
All other legal assistants and technicians, except clerical	1,160	.18	26	3
Librarians, professional	2,700	.43	8	10
All other professional, paraprofessional, and technical workers	640	.10	n.a.	n.a.
Sales and related occupations	20	(³)	n.a.	n.a.
Clerical and administrative support occupations	339,760	53.55	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	3,240	.51	9	9
Bill and account collectors	630	.10	46	1
Library assistants and bookmobile drivers	840	.13	8	3
Real estate clerks	810	.13	42	(³)
Legal secretaries	199,360	31.42	1	88
All other secretaries	16,400	2.58	8	14
Stenographers	5,380	.85	16	4
Receptionists and information clerks	18,900	2.98	4	37
Typists	4,320	.68	14	6
Typists, word processing equipment	19,590	3.09	5	23
Personnel clerks, except payroll and timekeeping	520	.08	18	2
File clerks	9,250	1.46	7	18
Bookkeeping, accounting, and auditing clerks	23,390	3.69	4	45
Payroll and timekeeping clerks	1,140	.18	15	6
Billing, cost and rate clerks	650	.10	14	3
General office clerks	12,900	2.03	7	20
Electronic data processing and other office machine operators	5,330	.84	n.a.	n.a.
Billing, posting, and calculating machine operators	1,830	.29	16	6
Duplicating machine operators	1,500	.24	11	4
Mail machine operators, preparation and handling	230	.04	16	1

See footnotes at end of table.

Table 29. Legal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1984—Continued

(SIC 81)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Computer operators, except peripheral equipment	600	0.09	16	3
Peripheral EDP equipment operators	90	.01	35	(³)
Data entry keyers, except composing	950	.15	16	4
All other office machine operators	130	.02	38	1
Switchboard operators	5,870	.93	7	15
Mail clerks, except mail machine operators and postal service	1,620	.26	10	4
Messengers	7,080	1.12	7	12
Material recording, scheduling, dispatching, and distributing workers	490	.08	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	300	.05	13	2
All other material recording, scheduling, and distributing workers	190	.03	41	(³)
All other clerical and administrative support workers	2,050	.32	n.a.	n.a.
Service occupations	7,080	1.12	n.a.	n.a.
Detectives and investigators, except public	1,230	.19	20	2
All other protective service workers	190	.03	n.a.	n.a.
Food and beverage preparation and service workers	310	.05	23	1
Cleaning and building service workers, except private households	5,150	.81	n.a.	n.a.
All other service workers	200	.03	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	400	.06	n.a.	n.a.
Gardeners and groundskeepers, except farm	400	.06	36	1
Production, construction, operating, maintenance, and material handling occupations	830	.13	n.a.	n.a.
Truck drivers, light, include delivery and route workers	150	.02	49	(³)
All other transportation and material moving equipment operators	150	.02	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	530	.08	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, April 1984

(SIC 83)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,235,850	100.00	--	--
Managerial and administrative occupations	93,660	7.58	n.a.	n.a.
Financial managers	18,620	1.51	3	39
Personnel, training, and labor relations managers	2,460	.20	5	7
Purchasing managers	960	.08	10	3
Marketing, advertising, and public relations managers	2,830	.23	6	6
Administrative services managers	6,220	.50	4	10
Education administrators	7,670	.62	4	11
Medicine and health services managers	3,190	.26	5	7
Food service and lodging managers	7,880	.64	6	13
General managers and top executives	26,420	2.14	2	39
All other managers and administrators	17,410	1.41	3	18
Professional, paraprofessional, and technical occupations	446,980	36.17	n.a.	n.a.
Management support workers	22,670	1.83	n.a.	n.a.
Accountants, auditors, and other financial specialists	8,210	.66	n.a.	n.a.
Accountants and auditors	6,510	.53	4	15
Budget analysts	940	.08	8	2
All other financial specialists	760	.06	10	2
Purchasing agents, except wholesale and retail trade, and farm products	560	.05	7	2
Employment interviewers, private or public employment service	1,990	.16	9	2
Personnel, training, and labor relations specialists	4,760	.39	6	7
Cost estimators	250	.02	15	1
Compliance officers and enforcement inspectors, except construction	510	.04	20	1
All other management support workers	6,390	.52	6	7
Engineering and related technicians and technologists	530	.04	26	1
Physical and life science technicians and technologists	330	.03	18	(³)
Computer scientists and related workers	1,270	.10	n.a.	n.a.
Systems analysts, electronic data processing	290	.02	13	1
Computer programmers	630	.05	8	2
Computer programmer aides	350	.03	9	1
Mathematical scientists	420	.03	n.a.	n.a.
Social scientists, including urban and regional planners	8,280	.67	n.a.	n.a.
Urban and regional planners	360	.03	22	1
Psychologists	7,440	.60	11	7
All other social scientists	480	.04	n.a.	n.a.
Social workers, medical and psychiatric	32,370	2.62	4	14
Social workers, except medical and psychiatric	57,100	4.62	3	31
Social service technicians	32,070	2.59	4	18
Recreation workers	16,130	1.31	5	14
Religious workers	1,320	.11	n.a.	n.a.
Clergy	680	.06	10	2
Directors, religious activities and education	370	.03	26	1
All other religious workers	270	.02	40	(³)
Lawyers	1,060	.09	14	1
Paralegal personnel	460	.04	22	(³)
All other legal assistants and technicians, except clerical	190	.02	n.a.	n.a.
Lecturers	220	.02	37	(³)
Teachers, preschool and kindergarten	143,130	11.58	1	29
Teachers, elementary school	2,780	.22	11	1
Teachers and instructors, vocational education and training	17,670	1.43	4	9

See footnotes at end of table.

Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 83)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Instructors, nonvocational education	13,600	1.10	6	8
Instructors and coaches, sports and physical training	860	.07	12	1
All other teachers and instructors	13,280	1.07	6	5
Librarians, professional	220	.02	18	1
Technical assistants, library	170	.01	28	(³)
Vocational and educational counselors	14,390	1.16	4	9
Instructional coordinators	2,320	.19	8	3
Physicians and surgeons	1,660	.13	8	3
Occupational therapists	1,800	.15	9	3
Physical therapists	1,400	.11	9	3
Corrective and manual arts therapists	280	.02	27	(³)
Recreational therapists	1,740	.14	6	3
All other therapists	2,240	.18	9	3
Registered nurses	17,350	1.40	3	16
Licensed practical nurses	11,820	.96	3	10
Pharmacists	180	.01	14	1
Dietitians and nutritionists	2,970	.24	6	8
Dietetic technicians	780	.06	10	1
Medical records technicians and technologists	1,120	.09	7	3
All other health professionals, paraprofessional and technicians	10,030	.81	6	4
Writers and editors	390	.03	14	1
Public relations specialists and publicity writers	4,960	.40	6	10
All other professional, paraprofessional, and technical workers	5,420	.44	n.a.	n.a.
Sales and related occupations	12,420	1.00	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	2,350	.19	9	2
Cashiers	3,350	.27	8	2
All other sales and related workers	6,720	.54	9	3
Clerical and administrative support occupations	214,660	17.37	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	6,090	.49	4	9
Welfare eligibility workers and interviewers	2,830	.23	8	2
Library assistants and bookmobile drivers	230	.02	17	(³)
Teachers aides and educational assistants, clerical	71,370	5.77	2	23
Secretaries	43,820	3.55	2	51
Stenographers	660	.05	9	1
Receptionists and information clerks	14,110	1.14	4	23
Typists	8,090	.65	4	11
Typists, word processing equipment	1,980	.16	7	4
Personnel clerks, except payroll and timekeeping	840	.07	4	3
File clerks	1,690	.14	10	3
Interviewing clerks, except personnel and social welfare	650	.05	14	1
Bookkeeping, accounting, and auditing clerks	24,010	1.94	2	44
Payroll and timekeeping clerks	3,390	.27	4	10
Billing, cost and rate clerks	790	.06	6	2
General office clerks	19,230	1.56	4	19
Electronic data processing and other office machine operators	3,410	.28	n.a.	n.a.
Billing, posting, and calculating machine operators	700	.06	11	2
Duplicating machine operators	380	.03	8	1
Computer operators, except peripheral equipment	640	.05	8	2
Data entry keyers, except composing	1,310	.11	18	2
All other office machine operators	380	.03	n.a.	n.a.
Switchboard operators	3,200	.26	4	8
Mail clerks, except mail machine operators and postal service	680	.06	12	1

See footnotes at end of table.

Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 83)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Messengers	410	0.03	8	1
Material recording, scheduling, dispatching, and distributing workers	2,890	.23	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	1,870	.15	10	3
All other material recording, scheduling, and distributing workers	1,020	.08	12	1
All other clerical and administrative support workers	4,290	.35	n.a.	n.a.
Service occupations	356,950	28.88	n.a.	n.a.
First-line supervisors and manager/supervisors, service	11,770	.95	n.a.	n.a.
Housekeepers	6,720	.54	5	10
All other service supervisors and manager/supervisors	5,050	.41	6	5
Guards and watch guards	5,460	.44	6	5
Food and beverage preparation and service workers	72,400	5.86	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop	380	.03	14	1
Waiters and waitresses	6,230	.50	7	2
Dining room and cafeteria attendants, and bartender helpers	5,980	.48	6	3
Counter attendants, lunchroom, coffee shop, or cafeteria	710	.06	15	1
Cooks, restaurant	360	.03	15	(³)
Cooks, institution or cafeteria	32,960	2.67	2	36
Cooks, specialty fast food	370	.03	23	(³)
Food preparation workers	20,740	1.68	3	16
All other food service workers	4,670	.38	n.a.	n.a.
Health service and related workers	105,080	8.50	n.a.	n.a.
Nursing aides, orderlies, and attendants	47,200	3.82	3	9
Home health aides	47,240	3.82	3	4
Psychiatric aides	1,280	.10	17	(³)
Physical and corrective therapy assistants and aides	720	.06	15	1
Occupational therapy assistants and aides	490	.04	15	1
All other health service workers	8,150	.66	8	3
Cleaning and building service workers, except private households	43,450	3.52	n.a.	n.a.
Maids and housekeeping cleaners	16,560	1.34	3	12
Janitors and cleaners, except maids and housekeeping cleaners	25,480	2.06	3	27
All other cleaning and building service workers, except private households	1,410	.11	n.a.	n.a.
Amusement and recreation attendants	1,400	.11	15	1
Social welfare service aides	22,570	1.83	6	3
Child care workers	85,870	6.95	3	17
All other service workers	8,950	.72	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	5,360	.43	n.a.	n.a.
Gardeners and groundskeepers, except farm	4,460	.36	6	7
Animal caretakers, except farm	230	.02	29	(³)
All other agriculture, forestry, fishing, and related workers	670	.05	20	1
Production, construction, operating, maintenance, and material handling occupations	105,820	8.56	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	12,880	1.04	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	6,730	.54	6	8

See footnotes at end of table.

Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 83)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors - construction trades and extractive workers	870	0.07	14	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	600	.05	11	2
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	4,680	.38	7	3
Inspectors and related occupations	1,250	.10	14	1
Mechanics, installers, and repairers	12,840	1.04	16	19
Maintenance repairers, general utility	11,850	.96	3	18
All other mechanics, installers, and repairers	990	.08	13	1
Construction trades workers, except material moving	5,440	.44	n.a.	n.a.
Carpenters	4,150	.34	7	4
Electricians	240	.02	11	1
Painters and paperhangers, construction and maintenance	910	.07	16	1
Plumbers, pipefitters, and steamfitters	140	.01	12	(³)
All other construction and extractive workers, except helpers	1,740	.14	12	1
Precision production occupations	440	.04	19	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	4,390	.36	n.a.	n.a.
Laundry and drycleaning machine operators and tenders, except pressing	2,730	.22	4	4
Pressing machine operators and tenders, textile, garment, and related materials	220	.02	14	(³)
All other machine setters and set-up operators, except metal and plastic	480	.04	45	(³)
All other machine operators and tenders, except metal and plastic	960	.08	18	(³)
Hand working occupations, including assemblers and fabricators	19,960	1.62	8	2
Plant and system workers	140	.01	16	(³)
Motor vehicle operators	25,830	2.09	n.a.	n.a.
Truck drivers, light, include delivery and route workers	4,940	.40	6	6
Bus drivers	8,240	.67	6	8
Bus drivers, school	8,100	.66	4	7
Driver/sales workers	480	.04	13	(³)
All other motor vehicle operators	4,070	.33	7	4
All other transportation and material moving equipment operators	1,030	.08	16	1
Freight, stock, and material movers, hand	3,860	.31	9	3
All other helpers, laborers, and material movers, hand	16,020	1.30	7	3

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 31. Museums and botanical and zoological gardens: Employment, relative error, and percent of establishments reporting selected occupations, April 1984

(SIC 84)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	39,230	100.00	--	--
Managerial and administrative occupations	3,410	8.69	n.a.	n.a.
Financial managers	390	.99	6	31
Personnel, training, and labor relations managers	120	.31	9	11
Purchasing managers	50	.13	15	5
Marketing, advertising, and public relations managers	340	.87	6	25
Administrative services managers	280	.71	9	19
General managers and top executives	1,370	3.49	3	69
All other managers and administrators	860	2.19	n.a.	n.a.
Professional, paraprofessional, and technical occupations	9,870	25.16	n.a.	n.a.
Management support workers	890	2.27	n.a.	n.a.
Accountants, auditors, and other financial specialists	520	1.33	n.a.	n.a.
Life scientists	280	.71	16	5
Physical and life science technicians and technologists	170	.43	19	3
Social scientists, including urban and regional planners	50	.13	42	1
Lecturers	290	.74	16	7
Instructors, nonvocational education	960	2.45	9	23
All other teachers and instructors	1,010	2.57	13	12
Librarians, professional	480	1.22	7	24
Technical assistants, library	250	.64	8	12
Curators, archivists, museum technicians, and restorers	3,360	8.56	4	69
Writers and editors	260	.66	8	13
Public relations specialists and publicity writers	380	.97	6	26
Designers, except interior designers	270	.69	8	15
All other professional, paraprofessional, and technical workers	1,220	3.11	n.a.	n.a.
Sales and related occupations	3,530	9.00	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	540	1.38	7	29
Cashiers	2,160	5.51	6	33
All other sales and related workers	830	2.12	9	13
Clerical and administrative support occupations	6,550	16.70	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	630	1.61	8	27
Library assistants and bookmobile drivers	140	.36	10	7
Secretaries	2,140	5.46	3	63
Stenographers	80	.20	14	3
Receptionists and information clerks	730	1.86	6	39
Typists	280	.71	8	12
Typists, word processing equipment	80	.20	11	7
Bookkeeping, accounting, and auditing clerks	680	1.73	4	45
Payroll and timekeeping clerks	80	.20	8	8
General office clerks	650	1.66	10	19
Electronic data processing and other office machine operators	150	.38	n.a.	n.a.
Switchboard operators	190	.48	6	13
Material recording, scheduling, dispatching, and distributing workers	240	.61	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	170	.43	15	6
All other material recording, scheduling, and distributing workers	70	.18	13	1

See footnotes at end of table.

Table 31. Museums and botanical and zoological gardens: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 84)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other clerical and administrative support workers	480	1.22	n.a.	n.a.
Service occupations	10,870	27.71	n.a.	n.a.
First-line supervisors and manager/supervisors, service	480	1.22	6	23
Guards and watch guards	3,660	9.33	4	34
Food and beverage preparation and service workers	1,000	2.55	8	9
Cleaning and building service workers, except private households	1,980	5.05	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	1,660	4.23	5	54
All other cleaning and building service workers, except private households	320	.82	8	16
Guides	3,390	8.64	7	25
All other service workers	360	.92	15	4
Agriculture, forestry, fishing, and related occupations	2,410	6.14	n.a.	n.a.
Gardeners and groundskeepers, except farm	1,400	3.57	5	33
Animal caretakers, except farm	1,010	2.57	6	10
Production, construction, operating, maintenance, and material handling occupations	2,590	6.60	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	220	.56	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	70	.18	9	5
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	150	.38	n.a.	n.a.
Mechanics, installers, and repairers	1,130	2.88	21	35
Maintenance repairers, general utility	1,010	2.57	5	32
All other mechanics, installers, and repairers	120	.31	15	3
Construction trades workers, except material moving	510	1.30	n.a.	n.a.
Carpenters	280	.71	8	14
Electricians	80	.20	9	5
Painters and paperhangers, construction and maintenance	150	.38	17	6
All other construction and extractive workers, except helpers	80	.20	n.a.	n.a.
Hand working occupations, including assemblers and fabricators	70	.18	17	2
Plant and system workers	70	.18	n.a.	n.a.
Transportation equipment operators	150	.38	n.a.	n.a.
Helpers - laborers and material movers, hand	280	.71	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling occupations	80	.20	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1984

(SIC 86, except SIC 866)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	647,430	100.00	--	--
Managerial and administrative occupations	97,850	15.11	n.a.	n.a.
Financial managers	18,400	2.84	2	30
Personnel, training, and labor relations managers	4,770	.74	8	5
Purchasing managers	450	.07	7	2
Marketing, advertising, and public relations managers	2,900	.45	6	5
Administrative services managers	3,720	.57	7	5
Education administrators	1,630	.25	7	3
Medicine and health services managers	280	.04	13	1
Food service and lodging managers	1,560	.24	6	3
General managers and top executives	30,430	4.70	2	31
All other managers and administrators	33,710	5.21	3	19
Professional, paraprofessional, and technical occupations	172,300	26.61	n.a.	n.a.
Management support workers	66,870	10.33	n.a.	n.a.
Accountants, auditors, and other financial specialists	9,310	1.44	n.a.	n.a.
Accountants and auditors	7,450	1.15	4	12
Budget analysts	280	.04	11	1
All other financial specialists	1,580	.24	9	2
Purchasing agents, except wholesale and retail trade, and farm products	220	.03	10	1
Employment interviewers, private or public employment service	270	.04	17	1
Personnel, training, and labor relations specialists	43,460	6.71	3	16
Cost estimators	80	.01	23	(³)
Compliance officers and enforcement inspectors, except construction	2,720	.42	12	1
All other management support workers	10,810	1.67	6	6
Engineers	490	.08	17	(³)
Engineering and related technicians and technologists	1,380	.21	13	1
Physical scientists	80	.01	30	(³)
Life scientists	280	.04	23	(³)
Physical and life science technicians and technologists	410	.06	30	(³)
Computer scientists and related workers	1,900	.29	n.a.	n.a.
Systems analysts, electronic data processing	640	.10	8	1
Computer programmers	920	.14	6	2
Computer programmer aides	340	.05	9	1
Mathematical scientists and related workers	920	.14	n.a.	n.a.
Mathematical scientists	600	.09	n.a.	n.a.
Mathematical technicians	320	.05	36	(³)
Social scientists, including urban and regional planners	890	.14	n.a.	n.a.
Economists, including market research analysts	460	.07	16	1
Urban and regional planners	210	.03	29	(³)
All other social scientists	220	.03	n.a.	n.a.
Social workers, medical and psychiatric	1,010	.16	10	1
Social workers, except medical and psychiatric	3,810	.59	7	3
Social service technicians	1,650	.25	9	2
Recreation workers	26,010	4.02	4	8
Religious workers	250	.04	n.a.	n.a.
Lawyers	2,230	.34	7	3
Law clerks	200	.03	18	(³)
Paralegal personnel	120	.02	22	(³)
All other legal assistants and technicians, except clerical	380	.06	21	(³)
Lecturers	250	.04	33	(³)
Teachers, preschool and kindergarten	3,380	.52	6	2

See footnotes at end of table.

Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 86, except SIC 866)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Teachers and instructors, vocational education and training	3,980	0.61	9	2
Instructors, nonvocational education	7,600	1.17	6	3
Instructors and coaches, sports and physical training	18,930	2.92	4	5
All other teachers and instructors	2,100	.32	n.a.	n.a.
Librarians, professional	490	.08	9	1
Technical assistants, library	210	.03	19	(³)
Vocational and educational counselors	520	.08	19	1
Instructional coordinators	500	.08	11	1
Physicians and surgeons	470	.07	41	(³)
Physical therapists	80	.01	34	(³)
Recreational therapists	190	.03	26	(³)
Registered nurses	790	.12	15	1
Licensed practical nurses	330	.05	21	(³)
Pharmacists	70	.01	47	(³)
Dietitians and nutritionists	290	.04	33	(³)
Dietetic technicians	360	.06	18	(³)
Medical records technicians and technologists	90	.01	34	(³)
All other health professionals, paraprofessional and technicians	1,140	.18	n.a.	n.a.
Writers and editors	5,720	.88	4	8
Public relations specialists and publicity writers	7,670	1.18	4	11
Music directors, singers, composers, and related workers	310	.05	28	(³)
Musicians, instrumental	1,050	.16	24	(³)
All other professional, paraprofessional, and technical workers	6,900	1.07	n.a.	n.a.
Sales and related occupations	15,570	2.40	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	2,160	.33	7	3
Cashiers	2,670	.41	6	2
All other sales and related workers	10,740	1.66	4	4
Clerical and administrative support occupations	176,630	27.28	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	6,200	.96	4	7
Welfare eligibility workers and interviewers	320	.05	22	(³)
Travel clerks	6,640	1.03	7	3
Library assistants and bookmobile drivers	190	.03	20	(³)
Teachers aides and educational assistants, clerical	2,760	.43	8	2
Secretaries	54,730	8.45	1	50
Stenographers	2,630	.41	6	3
Receptionists and information clerks	14,540	2.25	3	19
Typists	6,420	.99	4	8
Typists, word processing equipment	4,020	.62	4	6
Personnel clerks, except payroll and timekeeping	490	.08	21	1
File clerks	2,410	.37	6	4
Interviewing clerks, except personnel and social welfare	770	.12	25	(³)
Bookkeeping, accounting, and auditing clerks	23,270	3.59	2	36
Payroll and timekeeping clerks	2,190	.34	5	5
Billing, cost and rate clerks	530	.08	12	1
General office clerks	28,540	4.41	2	23
Electronic data processing and other office machine operators	6,480	1.00	n.a.	n.a.
Billing, posting, and calculating machine operators	280	.04	15	(³)
Duplicating machine operators	650	.10	7	2
Mail machine operators, preparation and handling	1,710	.26	5	4
Computer operators, except peripheral equipment	990	.15	7	2

See footnotes at end of table.

Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 86, except SIC 866)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Peripheral EDP equipment operators	140	0.02	20	(⁹)
Data entry keyers, except composing	2,390	.37	6	3
All other office machine operators	320	.05	16	(³)
Switchboard operators	3,300	.51	4	7
Mail clerks, except mail machine operators and postal service	2,020	.31	5	4
Messengers	320	.05	10	1
Material recording, scheduling, dispatching, and distributing workers	1,940	.30	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	960	.15	6	2
All other material recording, scheduling, and distributing workers	980	.15	11	1
All other clerical and administrative support workers	5,920	.91	7	3
Service occupations	153,650	23.73	n.a.	n.a.
First-line supervisors and manager/supervisors, service	2,320	.36	n.a.	n.a.
Housekeepers	790	.12	7	2
All other service supervisors and manager/supervisors	1,530	.24	7	2
Guards and watch guards	5,840	.90	6	5
Food and beverage preparation and service workers	97,960	15.13	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop	820	.13	7	1
Bartenders	38,020	5.87	2	18
Waiters and waitresses	27,670	4.27	3	12
Dining room and cafeteria attendants, and bartender helpers	8,260	1.28	6	5
Counter attendants, lunchroom, coffee shop, or cafeteria	720	.11	19	(⁹)
Cooks, restaurant	7,340	1.13	3	8
Cooks, institution or cafeteria	2,570	.40	6	3
Cooks, specialty fast food	380	.06	15	1
Cooks, short order	160	.02	15	(⁹)
Food preparation workers	9,600	1.48	4	7
All other food service workers	2,420	.37	12	1
Health service and related workers	1,100	.17	n.a.	n.a.
Nursing aides, orderlies, and attendants	310	.05	24	(⁹)
Home health aides	480	.07	28	(⁹)
All other health service workers	310	.05	n.a.	n.a.
Cleaning and building service workers, except private households	27,690	4.28	n.a.	n.a.
Maids and housekeeping cleaners	4,510	.70	5	5
Janitors and cleaners, except maids and housekeeping cleaners	22,420	3.46	2	27
Elevator operators	200	.03	21	(⁹)
All other cleaning and building service workers, except private households	560	.09	13	1
Amusement and recreation attendants	7,760	1.20	6	3
Child care workers	5,100	.79	6	3
All other service workers	5,880	.91	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations	10,450	1.61	n.a.	n.a.
Gardeners and groundskeepers, except farm	5,280	.82	7	5
Animal caretakers, except farm	3,840	.59	7	2
All other agriculture, forestry, fishing, and related workers	1,330	.21	16	1
Production, construction, operating, maintenance, and material handling occupations	20,980	3.24	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	3,910	.60	n.a.	n.a.

See footnotes at end of table.

Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1984—Continued

(SIC 86, except SIC 866)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors - mechanics, installers and repairers	3,260	0.50	6	4
First-line supervisors and manager/supervisors - construction trades and extractive workers	230	.04	28	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	420	.06	n.a.	n.a.
Inspectors and related occupations	360	.06	26	(³)
Mechanics, installers, and repairers	8,060	1.24	16	9
Maintenance repairers, general utility	7,580	1.17	4	9
All other mechanics, installers, and repairers	480	.07	12	(³)
Construction trades workers, except material moving	790	.12	n.a.	n.a.
Carpenters	330	.05	13	1
Electricians	150	.02	14	(³)
Painters and paperhangers, construction and maintenance	240	.04	17	(³)
Plumbers, pipefitters, and steamfitters	70	.01	22	(³)
All other construction and extractive workers, except helpers	350	.05	22	(³)
Precision production occupations	330	.05	21	(³)
Machine setters, set-up operators, and tenders, except metal and plastic	1,020	.16	n.a.	n.a.
Laundry and drycleaning machine operators and tenders, except pressing	280	.04	11	1
All other machine setters and set-up operators, except metal and plastic	350	.05	15	1
All other machine operators and tenders, except metal and plastic	390	.06	n.a.	n.a.
Plant and system workers	180	.03	42	(³)
Motor vehicle operators	2,120	.33	n.a.	n.a.
Truck drivers, light, include delivery and route workers	910	.14	11	1
Bus drivers	300	.05	12	(³)
Bus drivers, school	290	.04	13	(³)
All other motor vehicle operators	620	.10	11	1
All other transportation and material moving equipment operators	410	.06	n.a.	n.a.
Freight, stock, and material movers, hand	830	.13	16	1
All other helpers, laborers, and material movers, hand	2,440	.38	13	1
All other production, construction, operating, maintenance, and material handling occupations	180	.03	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1984

(SIC 89)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,161,550	100.00	--	--
Managerial and administrative occupations	74,520	6.42	n.a.	n.a.
Financial managers	15,460	1.33	5	23
Personnel, training, and labor relations managers	2,220	.19	6	7
Purchasing managers	1,060	.09	10	3
Marketing, advertising, and public relations managers	3,250	.28	8	7
Administrative services managers	8,560	.74	7	11
Construction managers	3,860	.33	17	3
General managers and top executives	25,110	2.16	4	20
All other managers and administrators	15,000	1.29	6	8
Professional, paraprofessional, and technical occupations	742,660	63.94	n.a.	n.a.
Management support workers	218,750	18.83	n.a.	n.a.
Accountants, auditors, and other financial specialists	198,070	17.05	n.a.	n.a.
Tax preparers	20,260	1.74	7	12
Accountants and auditors	172,440	14.85	2	42
Budget analysts	1,400	.12	21	2
All other financial specialists	3,970	.34	15	3
Purchasing agents, except wholesale and retail trade, and farm products	2,020	.17	10	3
Personnel, training, and labor relations specialists	1,940	.17	9	4
Cost estimators	5,200	.45	11	5
Management analysts	4,990	.43	11	2
All other management support workers	6,530	.56	10	4
Engineers	160,510	13.82	n.a.	n.a.
Aeronautical and astronautical engineers	1,920	.17	23	1
Metallurgists, and metallurgical, ceramic, and materials engineers	830	.07	21	1
Mining engineers, including mine safety	620	.05	41	1
Petroleum engineers	1,340	.12	29	1
Chemical engineers	4,290	.37	15	3
Nuclear engineers	2,600	.22	21	1
Civil engineers, including traffic	67,310	5.79	4	23
Agricultural engineers	240	.02	39	(³)
Electrical and electronic engineers	30,980	2.67	6	12
Industrial engineers, except safety	3,270	.28	14	2
Safety engineers, except mining	660	.06	26	1
Mechanical engineers	29,870	2.57	6	12
Marine engineers	2,110	.18	25	1
All other engineers	14,470	1.25	15	3
Architects, except landscape and marine	44,430	3.83	6	16
Surveying and mapping scientists	19,600	1.69	8	10
All other architects and surveying and mapping scientists	4,600	.40	n.a.	n.a.
Engineering and related technicians and technologists	192,070	16.54	n.a.	n.a.
Civil engineering technicians and technologists	25,620	2.21	6	14
Electrical and electronic engineering technicians and technologists	16,820	1.45	8	7
Industrial engineering technicians and technologists	440	.04	37	(³)
Mechanical engineering technicians and technologists	6,220	.54	11	3
Drafters	107,000	9.21	3	37
Surveying and mapping technicians and technologists	25,440	2.19	7	12
All other engineering and related technicians and technologists	10,530	.91	12	3

See footnotes at end of table.

Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 89)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Physical scientists	10,770	0.93	n.a.	n.a.
Physicists and astronomers	2,020	.17	19	1
Chemists, except biochemists	2,200	.19	13	1
Atmospheric and space scientists	810	.07	28	(³)
Geologists, geophysicists, and oceanographers	3,520	.30	11	3
All other physical scientists	2,220	.19	15	2
Life scientists	7,640	.66	n.a.	n.a.
Biological scientists	4,130	.36	13	1
Medical scientists	2,210	.19	20	1
All other life scientists	1,300	.11	n.a.	n.a.
Physical and life science technicians and technologists	7,970	.69	n.a.	n.a.
Biological, agricultural, and food technicians and technologists, except health	2,340	.20	17	1
Chemical technicians and technologists, except health	1,490	.13	20	1
Nuclear technicians and technologists	1,180	.10	25	(³)
Petroleum technicians and technologists	460	.04	32	(³)
All other physical and life science technicians and technologists	2,500	.22	18	1
Computer scientists and related workers	18,400	1.58	n.a.	n.a.
Systems analysts, electronic data processing	7,130	.61	8	6
Computer programmers	9,000	.77	7	9
All other computer systems analysts, programmers, and programmer aides	2,270	.20	n.a.	n.a.
Mathematical scientists and related workers	6,820	.59	n.a.	n.a.
Operations and systems researchers and analysts, except computer	1,930	.17	16	1
Statisticians	720	.06	27	1
Actuaries	1,900	.16	11	1
Financial analysts, statistical	410	.04	18	1
All other mathematical scientists	950	.08	26	(³)
Mathematical technicians	910	.08	23	(³)
Social scientists, including urban and regional planners	4,720	.41	n.a.	n.a.
Economists, including market research analysts	750	.06	21	1
Urban and regional planners	1,110	.10	22	1
Psychologists	1,070	.09	25	1
All other social scientists	1,790	.15	22	1
Social workers, medical and psychiatric	480	.04	35	(³)
Social workers, except medical and psychiatric	1,080	.09	24	(³)
Social service technicians	720	.06	40	(³)
Lawyers	800	.07	16	2
Legal assistants and technicians, except clerical	440	.04	n.a.	n.a.
Lecturers	210	.02	39	(³)
Instructors, nonvocational education	880	.08	29	(³)
All other teachers and instructors	2,120	.18	22	1
Librarians, professional	1,150	.10	9	4
Technical assistants, library	380	.03	11	1
Curators, archivists, museum technicians, and restorers	150	.01	43	(³)
Instructional coordinators	2,060	.18	21	1
Registered nurses	990	.09	23	1
Medical and clinical laboratory technologists	1,560	.13	25	(³)
Medical and clinical laboratory technicians	520	.04	30	(³)
All other health professionals, paraprofessional and technicians	1,690	.15	n.a.	n.a.
Writers and editors	2,120	.18	12	2
Technical writers	2,660	.23	10	3
Public relations specialists and publicity writers	1,080	.09	13	3
Photographers	500	.04	15	1
Artists and related workers	2,690	.23	13	2

See footnotes at end of table.

Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 89)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Designers, except interior designers	11,880	1.02	11	5
All other professional, paraprofessional, and technical workers	10,220	.88	n.a.	n.a.
Sales and related occupations	12,160	1.05	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers	1,270	.11	22	2
Sales agents, selected business services	3,410	.29	18	2
Sales engineers	3,160	.27	15	3
Sales representatives, scientific and related products and services, except retail	1,980	.17	18	2
Sales representatives, except scientific and related products or services and retail	1,280	.11	14	2
All other sales and related workers	1,060	.09	30	1
Clerical and administrative support occupations	279,690	24.08	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	9,410	.81	5	14
Library assistants and bookmobile drivers	600	.05	11	2
Proofreaders and copy markers	1,280	.11	10	2
Secretaries	84,590	7.28	2	69
Stenographers	2,420	.21	10	2
Receptionists and information clerks	14,940	1.29	4	26
Typists	10,190	.88	6	12
Typists, word processing equipment	18,620	1.60	4	24
Personnel clerks, except payroll and timekeeping	1,200	.10	13	4
File clerks	4,560	.39	11	8
Order clerks, materials, merchandise, and service	1,540	.13	17	2
Statistical clerks	2,870	.25	24	1
Bookkeeping, accounting, and auditing clerks	52,920	4.56	4	48
Payroll and timekeeping clerks	3,210	.28	9	8
Billing, cost and rate clerks	1,000	.09	12	2
General office clerks	27,440	2.36	5	24
Electronic data processing and other office machine operators	26,660	2.30	n.a.	n.a.
Billing, posting, and calculating machine operators	950	.08	28	1
Duplicating machine operators	1,850	.16	7	5
Mail machine operators, preparation and handling	480	.04	19	1
Computer operators, except peripheral equipment	11,210	.97	6	14
Peripheral EDP equipment operators	590	.05	17	1
Data entry keyers, except composing	10,680	.92	7	11
All other office machine operators	900	.08	20	1
Switchboard operators	2,350	.20	7	7
Mail clerks, except mail machine operators and postal service	2,110	.18	6	5
Messengers	1,700	.15	9	5
Material recording, scheduling, dispatching, and distributing workers	3,660	.32	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard	1,580	.14	18	2
Traffic, shipping, and receiving clerks	940	.08	15	2
All other material recording, scheduling, and distributing workers	1,140	.10	29	1
All other clerical and administrative support workers	6,420	.55	15	3
Service occupations	12,640	1.09	n.a.	n.a.
First-line supervisors and manager/supervisors, service	1,200	.10	14	2
Guards and watch guards	1,700	.15	16	1

See footnotes at end of table.

Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 89)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Food and beverage preparation and service workers	1,080	0.09	29	1
Cleaning and building service workers, except private households	6,680	.58	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners	5,380	.46	8	7
All other cleaning and building service workers, except private households	1,300	.11	35	1
All other service workers	1,980	.17	26	1
Agriculture, forestry, fishing, and related occupations	1,880	.16	n.a.	n.a.
Gardeners and groundskeepers, except farm	840	.07	20	1
Animal caretakers, except farm	740	.06	23	(³)
All other agriculture, forestry, fishing, and related workers	300	.03	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations	38,000	3.27	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	2,360	.20	n.a.	n.a.
First-line supervisors and manager/supervisors - construction trades and extractive workers	800	.07	23	1
First-line supervisors and manager/supervisors - production and operating workers	830	.07	16	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers	130	.01	34	(³)
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	600	.05	22	1
Precision inspectors, testers, and graders	2,050	.18	23	1
All other inspectors, testers and related occupations	1,820	.16	26	1
Mechanics, installers, and repairers	5,860	.50	50	4
Maintenance repairers, general utility	4,260	.37	17	3
All other mechanics, installers, and repairers	1,600	.14	33	1
Construction trades workers, except material moving	2,340	.20	n.a.	n.a.
Carpenters	800	.07	38	1
Electricians	770	.07	23	1
Painters and paperhangers, construction and maintenance	280	.02	33	(³)
Plumbers, pipefitters, and steamfitters	490	.04	35	(³)
All other construction and extractive workers, except helpers	3,270	.28	22	1
Precision metal workers	2,500	.22	n.a.	n.a.
Machinists	2,500	.22	21	1
Precision workers, nec	2,880	.25	17	1
Machine setters, set-up operators, operators and tenders	870	.07	39	1
Other hand workers, nec	3,260	.28	n.a.	n.a.
Welders and cutters	870	.07	27	1
All other hand workers, nec	2,390	.21	n.a.	n.a.
Motor vehicle operators	1,330	.11	n.a.	n.a.
Truck drivers, light, include delivery and route workers	1,330	.11	23	1
All other transportation and material moving equipment operators	1,050	.09	28	1
Freight, stock, and material movers, hand	1,770	.15	26	1
All other helpers, laborers, and material movers, hand	6,100	.53	14	2

See footnotes at end of table.

Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1984—Continued

(SIC 89)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
All other production, construction, operating, maintenance, and material handling occupations	540	0.05	n.a.	n.a.

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Appendix A. Survey Methods and Reliability of Estimates

Scope of the Survey

The survey covered private nonmanufacturing establishments in Standard Industrial Classification (SIC) codes 10-17, 60-67, 70-81 (except 806), 83-86 (except 866), and 89. The reference date of the survey was the week that included April 12, May 12, or June 12, 1984, depending on the SIC of the sampled unit as shown below:

<i>SIC code</i>	<i>Reference date</i>
10-17	May 12
60-67	May 12
70, 75, 76	May 12
72, 73, 78	June 12
79.....	April 12
80 (except 806)	April 12
81.....	May 12
83-86 (except 866)	April 12
89.....	June 12

The survey covered all 50 States, the District of Columbia, and Puerto Rico. (Puerto Rico data are not included in the national estimates in this publication.)

Occupational and industrial classification

The OES classification system is based primarily on the *Dictionary of Occupational Titles* (DOT), fourth edition, and is compatible with the 1980 Standard Occupational Classification (SOC) system. The DOT was used to develop the definitions of OES occupations because it is the most comprehensive system for classifying occupations. In addition, each OES occupation is directly related to a 1980 census occupation, except in those cases where a census occupation is not within the scope of the OES survey. "Crosswalks" have been developed between the two systems so that users may integrate OES data with data from sources using the Census classification. (See appendix C.)

The industrial classification system is that described in the 1972 edition of the *Standard Industrial Classification Manual*,¹ whereby reporting establishments are classified into industries on the basis of major product or activity.

¹ *Standard Industrial Classification Manual* (Office of Management and Budget, Executive Office of the President, 1972), as amended in *Supplement*, 1977.

Concepts

An *establishment* is an economic unit which produces goods or services. Generally, it is at a single physical location and is engaged predominantly in one type of economic activity. Where a single physical location encompasses two or more distinct activities, these are treated as separate establishments if separate payroll records are available and certain other criteria are met.

Employment includes full- and part-time workers; workers on paid vacations or other types of leave; workers on unpaid short-term absences (i.e., illness, bad weather, temporary layoff, jury duty); salaried officers, executives, and staff of incorporated firms; employees temporarily assigned to other units; and employees for whom that unit is their permanent (home) duty station, regardless of whether the unit prepares their paycheck. Excluded from coverage are proprietors (owners and partners of unincorporated firms), self-employed, unpaid family workers, and workers on extended leave (i.e., pensioners and members of the Armed Forces).

Occupation refers to the occupation in which employees are working rather than the occupation for which they may have been trained. For example, an employee trained as an engineer but working as a drafter is reported as a drafter.

Working supervisors (those spending 20 percent or more of their time at work similar to that done by workers under their supervision) are reported in the occupation most closely related to their work.

Part-time workers, learners, and apprentices are reported in the occupation in which they ordinarily work.

Multiple jobholders (employees who perform the duties of two or more occupations in an establishment) are reported in the occupation that requires the highest level of skill or in the occupation where the most time is spent if there is no measurable difference in skill requirements.

Survey procedures

The survey is conducted over a 3-year cycle; manufacturing industries are surveyed in 1 year and nonmanufacturing industries in the other 2 years. Data are collected from a sample of establishments primarily by mail; telephone followups and personal visits are made when an establishment response is critical to the

survey. The survey is based on a probability sample, stratified by industry and size of employment, designed to represent the total or "universe" of establishments covered by the survey. Data are requested for the pay period including the 12th of the reference month, which is standard for all Federal agencies collecting employment data.

Method of collection

Survey schedules were mailed to most sample establishments; personal visits were made to some larger companies. Two additional mailings were sent to nonrespondents at approximately 6-week intervals. Nonrespondents considered critical to the survey (due to size) were followed up by telephone or personal visit.

Sampling procedure

The sampling frame for this survey was the list of units in the specified SIC's as reported to State Unemployment Insurance (UI) agencies. The reference date of the sampling frame was the second quarter of 1983.

The universe was stratified into SIC and size classes. The size classes were determined by employment as follows:

Size class	Employees
1	1-3
2	4-9
3	10-19
4	20-49
5	50-99
6	100-249
7	250-249
8	500-999
9	1,000 and over

UI reporting units with 1-3 employees were not sampled in all States, but units with 4-9 employees were given larger weights to represent the employment in the smaller size class. UI reporting units with 250 or more employees were included in the sample with certainty. Sample sizes intended to produce State estimates with target relative errors of 10, 15, and 20 percent at one standard deviation were developed for the noncertainty size classes. This was done for groups of SIC's based on averages of occupational rates and coefficients of variation (CV's) from the previous survey of those SIC's for a set of typical occupations. This SIC sample size was allocated to the size classes proportionally to size class employment. The sample was selected systematically with equal probability within each State/SIC/area/size class cell.

The States were given the option of three target relative errors in designing their samples. Some States varied the target relative error by SIC. This was done to decrease the cost by reducing the sample size. The above

allocations resulted in a total initial sample size of 158,023 UI reporting units.

Response

Of those selected, 149,213 were final eligible units (i.e., excluding establishments that were out of business or out of scope, etc.). Usable responses were obtained from 110,305 units, producing a response rate of 73.9 percent based on units and 68.0 percent based on weighted employment. Subsequent to the closeout date for national estimates, additional data were received by States and used in preparing State estimates. Response rates in most States were much higher than the response rate used to develop national estimates.

Estimation

A weight was determined for each sample unit from which a usable response was received. Each weight was composed of two factors. The first factor was the inverse of the probability of selection. The second was the nonresponse adjustment factor, used to correct for questionnaires that were not returned or not usable. For each of the 3-digit SIC/State/size class sampling cells, a nonresponse factor was calculated that was equal to:

$$\frac{\text{Weighted sample employment of all eligible units in sample}}{\text{Weighted sample employment of all responding eligible units}}$$

Sample employment was taken from the sampling frame. If the factor in a cell was greater than a predetermined maximum factor, which increased as the number of respondents in a cell increased, the cell was collapsed with other homogeneous cells within the SIC until the factor for the combined cells was not greater than the appropriate maximum factor. If the collapsing procedure terminated (i.e., no more cells were available for collapse) before satisfying the above constraint, then the appropriate maximum factor was used. For size classes 1-6, homogeneous cells were determined to be other size cells within the SIC and State. For size classes 7-9, homogeneous cells were determined to be other State cells within the SIC and size class. The weight for each establishment was the product of the two factors.

A combined ratio estimate of occupational employment was used to develop the national estimates. The auxiliary variable used was total employment. The estimating formula is:

$$\hat{p} = \sum_i \left[\frac{\sum_{j,k} w_{ijk} P_{ijk}}{\sum_{j,k} w_{ijk} e_{ijk}} \cdot M_i \right]$$

- Where: \hat{p} = 2-digit industry occupational employment estimate
- i = 3-digit industry within a 2-digit industry
- j = size class

k	=	establishment
w_{ijk}	=	weight after nonresponse adjustment in i -th industry, j -th size class, and k -th establishment
P_{ijk}	=	occupational employment in i -th industry, j -th size class, and k -th establishment
e_{ijk}	=	total employment in i -th industry, j -th size class, and k -th establishment
M_i	=	population total employment in i -th industry

The population value of total employment (M_i) was obtained from the BLS Current Employment Statistics program, a monthly employment survey of non-agricultural establishments.

The standard form for the sampling variance for a combined ratio estimate is:

$V(\hat{p})$	=	$\frac{\sum_i \sum_j N_{ij}^2 (1 - f_{ij})}{n_{ij}} \cdot A_{ij}$
A_{ij}	=	$S_{pij}^2 + R_i^2 S_{eij}^2 - 2R_i K_{ij} S_{pij} S_{eij}$
Where: $V(\hat{p})$	=	variance of \hat{p}
i	=	3-digit industry within a 2-digit industry
j	=	size class
N_{ij}	=	total number of units in the i -th industry and j -th size class
f_{ij}	=	sampling fraction in the i -th industry and j -th size class
n_{ij}	=	number of sample units in the i -th industry and j -th size class
S_{pij}	=	standard deviation of p within the i -th industry and j -th size class
S_{eij}	=	standard deviation of e within the i -th industry and j -th size class
K_{ij}	=	correlation coefficient between p and e within the i -th industry and j -th size class.

The variances for the occupational estimates were estimated from the following formula:

$\text{Var}(\hat{P})$	=	$\sum_i \sum_j T_{ij} V_{ij}^2$
T_{ij}	=	$[B_{ij}] \cdot [D_{ij}] \cdot [F_{ij}]^2$
B_{ij}	=	$(M_{ij} - e_{ij}) / (M_{ij})$
D_{ij}	=	$(G_{ij}) / (H_{ij})$
G_{ij}	=	$\left(\sum_k w_{ijk}^2 \right) \left(\sum_k w_{ijk} \right)$
H_{ij}	=	$\left(\sum_k w_{ijk} \right)^2 - \left(\sum_k w_{ijk}^2 \right)$
F_{ij}	=	$(M_i) / \left(\sum_j \sum_k w_{ijk} e_{ijk} \right)$
V_{ij}^2	=	$\sum_k w_{ijk} \cdot L_{ijk}^2$
L_{ijk}	=	$(P_{ijk} - R_i e_{ijk}) - (\bar{P}_{ij} - R_i \bar{e}_{ij})$

Where:

M_{ij}	=	benchmark total employment in the i -th industry and j -th size class
R_i	=	$\left(\sum_j \sum_k w_{ijk} P_{ijk} \right) / \left(\sum_j \sum_k w_{ijk} e_{ijk} \right)$
e_{ij}	=	$\sum_k e_{ijk}$

All other terms are as defined above. This formula is almost a computational form of the standard formula given above. One simplifying assumption has been made:

$$W_{ijk} = C_{ij} \text{ for all } k \text{ in a given } ij \text{ cell}$$

That is, the weights are equal to a constant C within a given 3-digit industry/size class cell. At this time, the total effect of this assumption on the variance estimates has not been measured.

Reliability of estimates

Estimates developed from the sample may differ from the results of a complete survey of all the establishments in the sampled lists. Two types of errors, sampling and nonsampling, are possible in an estimate based on a sample survey. Sampling error occurs because observations are made only on a sample, not on the entire population. Nonsampling error can be attributed to many sources, e.g., inability to obtain information about all cases in the sample; differences in the respondents' interpretation of questions; inability of respondents to provide correct information; errors in recording, coding, or processing the data; errors in estimating values for missing data; and failure to represent all units in the population.

The particular sample used in this survey is one of a large number of all possible samples of the same size that could have been selected using the same sample design. Estimates derived from the different samples would differ from each other; the difference between a sample estimate and the average of all possible sample estimates is called the sampling deviation. The standard or sampling error of a survey estimate is a measure of the variation among the estimates from all possible samples. The relative standard error is defined as the standard error of the estimate divided by the value being estimated; the variance is defined as the standard error squared.

The sample estimate and an estimate of its standard error enable one to construct interval estimates with prescribed confidence that the interval includes the average result of all possible samples that could be obtained from the sample design for the survey.

To illustrate, if all possible samples were selected, and if each of these were surveyed under essentially the same

conditions and an estimate and its estimated sample error were calculated from each sample, then:

1. Approximately 68 percent of the intervals from one standard error below to one standard error above the derived estimate would include the average value of all possible samples. This interval is called a 68-percent confidence interval.
2. Approximately 90 percent of the intervals from 1.6 standard errors below to 1.6 standard errors above the derived estimate would include the average of all possible samples. This interval is called a 90-percent confidence interval.
3. Approximately 95 percent of the intervals from two standard errors below to two standard errors above the derived estimate would include the average of all possible samples. This interval is called a 95-percent confidence interval.
4. Almost all intervals from three standard errors below to three standard errors above the derived estimate would include the average of all possible samples.

An inference that the complete coverage value would be within the indicated ranges would be correct in approximately the relative frequencies shown.

For example, suppose an estimated total is shown as 5,000 with an associated relative error of 2 percent. Then the standard error is 100 (2 percent of 5,000) and there is a 68-percent chance that the average of all possible sample totals would be between 4,900 and 5,100, and it is almost certain that the average of all possible sample totals would be between 4,700 and 5,300.

The relative errors provided primarily indicate the magnitude of the sampling error, but do not measure biases in the data due to nonsampling error. Efforts were made to reduce the biases due to errors in recording, coding, and processing the data. The adjustment made for nonrespondents assumed that the characteristics of the nonrespondents were the same as those of the respondents at a given level. To the extent this is not true, bias is introduced in the data. The magnitude of these biases is not known.

Particular care should be exercised in the interpretation of small estimates, estimates based on a small number of cases, or small differences between estimates because the sampling errors are relatively large and the magnitude of the biases is unknown.

Appendix B. Occupational Employment in Hospitals, 1983

Hospitals include establishments providing diagnostic services, extensive medical treatment, and continuous nursing services. These establishments contain an organized medical staff, inpatient beds, and equipment and facilities to provide either specialty or complete health care. Establishments surveyed included private and State and local government hospitals, but excluded Federal Government hospitals.

As shown in table B-1, employment in private and State and local government hospitals (SIC 806) totaled 4.2 million in 1983, representing 4.7 percent of all nonagricultural wage and salary employment in the Nation.

The largest occupational group in hospitals in 1983 was professional, paraprofessional, and technical workers, with about 2.1 million workers, accounting for 50 percent of total employment. About 60 percent of these professional workers were either registered or licensed practical nurses. There were another 1.1 million persons employed in service occupations in 1983.

Among the service employees, there were 383,750 nursing aides, orderlies, and attendants and 142,960 maids and housekeeping cleaners. A total of 659,320 persons were employed in clerical and related occupations, accounting for 15.9 percent of industry employment. Secretaries (both medical and other) numbered 124,430, or 18.9 percent of clerical employment in the industry. Another 73,570 were employed as general office clerks.

The five most populous occupations in hospitals are listed in the tabulation below:

	<i>Employment, 1984</i>	<i>Percent of industry employment</i>
Registered nurses	922,490	22.2
Nursing aides, orderlies, and attendants	383,750	9.2
Licensed practical nurses	334,690	8.1
Maids and housekeeping cleaners	142,960	3.4
Medical and clinical laboratory technologists	97,190	2.3

Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1983

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	4,152,360	100.00	--	--
Managerial and administrative occupations	153,910	3.71	n.a.	n.a.
Financial managers	9,130	.22	1	66
Personnel, training, and labor relations managers	7,130	.17	1	59
Purchasing managers	4,920	.12	1	56
Marketing, advertising, and public relations managers	3,780	.09	2	37
Administrative services managers	9,400	.23	3	29
Medicine and health services managers	46,100	1.11	2	76
Food service and lodging managers	6,840	.16	2	60
General managers and top executives	29,760	.72	3	91
All other managers and administrators	36,850	.89	2	47
Professional, paraprofessional, and technical occupations	2,081,910	50.14	n.a.	n.a.
Management support workers	42,490	1.02	n.a.	n.a.
Accountants, auditors, and other financial specialists	13,480	.32	n.a.	n.a.
Accountants and auditors	8,600	.21	3	42
Budget analysts	1,780	.04	2	16
All other financial specialists	3,100	.07	5	12
Purchasing agents, except wholesale and retail trade, and farm products	5,100	.12	2	44
Personnel, training, and labor relations specialists	6,120	.15	3	32
Compliance officers and enforcement inspectors, except construction	3,950	.10	11	8
All other management support workers	13,840	.33	n.a.	n.a.
Engineers	5,140	.12	n.a.	n.a.
Civil engineers, including traffic	420	.01	7	3
Electrical and electronic engineers	640	.02	5	4
Industrial engineers, except safety	630	.02	5	5
Mechanical engineers	1,580	.04	5	8
All other engineers	1,870	.05	8	9
Engineering and related technicians and technologists	2,930	.07	n.a.	n.a.
Electrical and electronic engineering technicians and technologists	1,070	.03	6	4
All other engineering and related technicians and technologists	1,860	.04	n.a.	n.a.
Physical scientists	1,650	.04	n.a.	n.a.
Chemists, except biochemists	690	.02	10	3
All other physical scientists	960	.02	35	1
Life scientists	9,360	.23	n.a.	n.a.
Biological scientists	4,270	.10	9	8
Medical scientists	4,220	.10	9	7
All other life scientists	870	.02	24	1
Physical and life science technicians and technologists	5,760	.14	n.a.	n.a.
Biological, agricultural, and food technicians and technologists, except health	2,050	.05	24	1
Chemical technicians and technologists, except health	1,460	.04	14	1
All other physical and life science technicians and technologists	2,250	.05	16	1
Computer scientists and related workers	12,540	.30	n.a.	n.a.
Systems analysts, electronic data processing	4,520	.11	5	15
Computer programmers	4,420	.11	3	18
Computer programmer aides	3,600	.09	4	13
Mathematical scientists and related workers	480	.01	n.a.	n.a.
Social scientists, including urban and regional planners	8,340	.20	n.a.	n.a.
Psychologists	7,710	.19	4	16
All other social scientists	630	.02	17	1
Social workers, medical and psychiatric	31,490	.76	3	56
Social workers, except medical and psychiatric	5,340	.13	5	14

See footnotes at end of table.

Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1983—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Social service technicians	4,850	0.12	4	16
Religious workers	4,250	.10	n.a.	n.a.
Clergy	4,250	.10	3	23
Nursing instructors	14,450	.35	2	37
Teachers and instructors, vocational education and training	4,450	.11	5	9
All other teachers and instructors	8,000	.19	7	17
Librarians, professional	2,500	.06	3	23
Technical assistants, library	1,490	.04	7	9
Physicians and surgeons	92,690	2.23	1	34
Dentists	1,860	.04	9	7
All other health diagnosing and treating practitioners	2,610	.06	14	2
Therapists	95,840	2.31	n.a.	n.a.
Respiratory therapists	50,100	1.21	2	66
Occupational therapists	9,680	.23	3	30
Physical therapists	20,200	.49	2	58
Corrective and manual arts therapists	640	.02	8	2
Speech pathologists and audiologists	4,440	.11	3	18
Recreational therapists	6,620	.16	3	24
All other therapists	4,160	.10	5	10
Registered nurses	922,490	22.22	(³)	98
Licensed practical nurses	334,690	8.06	(³)	95
Emergency medical technicians	14,790	.36	4	20
Physicians assistants	5,490	.13	5	11
Pharmacists	33,030	.80	2	76
Dietitians and nutritionists	15,000	.36	2	67
Dietetic technicians	8,800	.21	3	33
Medical and clinical laboratory technologists	97,190	2.34	2	78
Medical and clinical laboratory technicians	54,640	1.32	2	70
Dental hygienists	710	.02	6	5
Medical records technicians and technologists	24,880	.60	2	80
Nuclear medicine technologists	8,530	.21	2	41
Radiologic technologists	37,540	.90	3	52
Radiologic technicians	33,800	.81	2	63
Electroencephalograph technicians and technologists	5,230	.13	2	33
Electrocardiograph technicians and technologists	16,410	.40	2	46
Surgical technicians	36,060	.87	3	64
All other health professionals, paraprofessional and technicians	60,310	1.45	n.a.	n.a.
Public relations specialists and publicity writers	3,080	.07	2	25
Photographers	1,250	.03	4	8
All other professional, paraprofessional, and technical workers	9,480	.23	n.a.	n.a.
Sales and related occupations	14,880	.36	n.a.	n.a.
Cashiers	14,040	.34	3	42
All other sales and related workers	840	.02	8	3
Clerical and administrative support occupations	659,320	15.88	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers	37,050	.89	2	62
Library assistants and bookmobile drivers	1,560	.04	7	9
Medical secretaries	47,640	1.15	3	65
All other secretaries	76,790	1.85	2	60
Stenographers	8,270	.20	9	13
Receptionists and information clerks	35,610	.86	3	50
Typists	55,030	1.33	3	65
Typists, word processing equipment	4,480	.11	6	13
Personnel clerks, except payroll and timekeeping	6,430	.15	1	44
File clerks	19,970	.48	4	36
Order clerks, materials, merchandise, and service	5,060	.12	7	15
Procurement clerks	5,260	.13	3	36
Statistical clerks	7,520	.18	3	23
Interviewing clerks, except personnel and social welfare	38,940	.94	2	42
Bookkeeping, accounting, and auditing clerks	22,440	.54	2	70

See footnotes at end of table.

Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1983—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Payroll and timekeeping clerks	7,780	0.19	3	53
Billing, cost and rate clerks	46,080	1.11	2	78
General office clerks	73,570	1.77	3	57
Electronic data processing and other office machine operators	28,680	.69	n.a.	n.a.
Billing, posting, and calculating machine operators	4,290	.10	5	13
Computer operators, except peripheral equipment	7,320	.18	2	27
Peripheral EDP equipment operators	830	.02	7	3
Data entry keyers, except composing	14,770	.36	2	45
All other office machine operators	1,470	.04	6	6
Switchboard operators	33,700	.81	2	75
Material recording, scheduling, dispatching, and distributing workers	34,310	.83	n.a.	n.a.
Dispatchers, police, fire, and ambulance	1,180	.03	9	3
Stock clerks, stockroom, warehouse or storage yard	22,380	.54	2	58
Traffic, shipping, and receiving clerks	4,200	.10	3	20
All other material recording, scheduling, and distributing workers	6,550	.16	5	11
All other clerical and administrative support workers	63,150	1.52	(³)	39
Service occupations	1,090,200	26.25	n.a.	n.a.
First-line supervisors and manager/supervisors, service	47,240	1.14	n.a.	n.a.
Housekeepers	28,510	.69	2	67
All other service supervisors and manager/supervisors	18,730	.45	3	42
Guards and watch guards	32,960	.79	2	39
Food and beverage preparation and service workers	227,580	5.48	n.a.	n.a.
Waiters and waitresses	2,350	.06	11	3
Food servers, outside	47,370	1.14	2	32
Dining room and cafeteria attendants, and bartender helpers	16,090	.39	3	20
Counter attendants, lunchroom, coffee shop, or cafeteria	10,110	.24	3	20
Bakers, bread and pastry	2,580	.06	2	19
Butchers and meat cutters	510	.01	9	3
Cooks, institution or cafeteria	34,950	.84	2	86
Cooks, short order	2,270	.05	3	9
Food preparation workers	72,100	1.74	2	68
All other food service workers	39,250	.95	3	31
Health service and related workers	562,830	13.55	n.a.	n.a.
Dental assistants	1,590	.04	5	6
Medical assistants	18,550	.45	3	26
Nursing aides, orderlies, and attendants	383,750	9.24	(³)	89
Home health aides	2,770	.07	11	6
Psychiatric aides	59,580	1.43	1	12
Physical and corrective therapy assistants and aides	15,110	.36	2	48
Occupational therapy assistants and aides	4,350	.10	6	15
Ambulance drivers and attendants, except emergency medical technicians	3,240	.08	27	5
Pharmacy assistants	26,940	.65	1	57
All other health service workers	46,950	1.13	4	26
Cleaning and building service workers, except private households	207,650	5.00	n.a.	n.a.
Maids and housekeeping cleaners	142,960	3.44	(³)	83
Janitors and cleaners, except maids and housekeeping cleaners	54,460	1.31	2	50
Elevator operators	1,420	.03	10	2
All other cleaning and building service workers, except private households	8,810	.21	9	10
Barbers	490	.01	6	3
Hairdressers, hairstylists, and cosmetologists	750	.02	5	5
Social welfare service aides	420	.01	18	1
Child care workers	4,850	.12	14	4
All other service workers	5,430	.13	8	5

See footnotes at end of table.

Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1983—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Agriculture, forestry, fishing, and related occupations	6,990	0.17	n.a.	n.a.
Gardeners and groundskeepers, except farm	6,990	.17	2	40
Production, construction, operating, maintenance, and material handling occupations	145,150	3.50	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers	8,630	.21	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers	4,580	.11	3	29
First-line supervisors and manager/supervisors - construction trades and extractive workers	1,370	.03	4	7
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related	2,680	.06	4	14
Mechanics, installers, and repairers	48,110	1.16	n.a.	n.a.
Machinery maintenance mechanics	4,370	.11	4	11
Maintenance repairers, general utility	29,380	.71	2	76
Heating, air conditioning, and refrigeration mechanics and installers	4,580	.11	2	21
Electromedical and biomedical equipment repairers	5,100	.12	3	23
Menders - garments, linens, and related	1,780	.04	3	13
All other mechanics, installers, and repairers	2,900	.07	5	8
Construction trades workers, except material moving	25,910	.62	n.a.	n.a.
Carpenters	6,120	.15	2	29
Electricians	6,050	.15	3	29
Painters and paperhangers, construction and maintenance	6,800	.16	2	34
Plumbers, pipefitters, and steamfitters	4,020	.10	3	20
All other construction trades workers	2,920	.07	4	7
Machinists	430	.01	10	2
Precision workers, nec	1,110	.03	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic	34,480	.83	n.a.	n.a.
Sewing machine operators, nongarment	1,150	.03	4	8
Laundry and drycleaning machine operators and tenders, except pressing	21,240	.51	2	39
Pressing machine operators and tenders, textile, garment, and related materials	4,810	.12	4	9
Boiler operators and tenders, low pressure	4,980	.12	3	14
All other machine setters and set-up operators, except metal and plastic	1,020	.02	9	3
All other machine operators and tenders, except metal and plastic	1,280	.03	9	3
Other hand workers, nec	1,400	.03	n.a.	n.a.
Plant and system workers	7,840	.19	n.a.	n.a.
Stationary engineers	6,920	.17	3	16
All other plant and system operators	920	.02	7	3
Motor vehicle operators	5,320	.13	n.a.	n.a.
Truck drivers, light, include delivery and route workers	2,900	.07	5	12
All other motor vehicle operators	2,420	.06	10	8
All other transportation and motor vehicle operators	1,610	.04	17	3
Material moving equipment operators	690	.02	n.a.	n.a.
Helpers - laborers and material movers, hand	9,620	.23	7	9

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.

² Relative standard errors apply equally to data on estimated employment and percent of total employment; relative standard errors

are estimated at the level of 2 chances out of 3. For further information on sampling variability and other types of errors, see appendix A.

³ Less than 0.5 percent.

n.a. = not available.

NOTE: Detail may not add to totals due to rounding. Estimated employment is rounded to the nearest 10.

Appendix C. The OES Classification System

The new OES system (with an entirely new 5-digit coding system) organizes all occupations into four levels: Division, major group, minor group, and detail. The following sections discuss the first three levels, and also explain the new coding structure.

Division level

There are seven divisions in the new OES system:

1. Managerial and administrative occupations
2. Professional, paraprofessional, and technical occupations
3. Sales and related occupations
4. Clerical and administrative support occupations
5. Service occupations
6. Agriculture, forestry, fishing, and related occupations
7. Production, construction, operating, maintenance, and material handling occupations

Some of the more significant changes made at the division level are:

- The exclusion of first-line managers/supervisors from the managerial and administrative division. These workers are classified in separate and specific categories in the other divisions. For example, in the second division, first-line managers/supervisors are classified with the workers they supervise.
- The combination of professional and technical workers into a single integrated division in order to lessen the growing ambiguity between the two categories.
- The creation of a new agriculture division which allows supplementation of data from non-OES survey sources.
- The significant organizational and occupational revision of the production division.

Major and minor group levels

A significant amount of change has taken place at the major and minor group levels, particularly in restructuring. Since it would be impossible to describe every change in this appendix, some of the highlights of the

major and minor group structure of each division are given below:

Managerial and administrative occupations. This division is organized into three major groups. The first contains specialized occupations by function, and the second contains specialized occupations by industry. Both of these categories are generally at the middle-management level. When function and industry overlap, function takes precedence and is listed first. The third and final group includes the division residual as well as workers, usually in upper management, whose duties are more general in nature.

Professional, paraprofessional, and technical occupations. This division is organized into nine major groups and a residual category. These major groups were created by combining those professional, paraprofessional, and technical occupations requiring common bodies of knowledge and expertise. Unlike the Standard Occupational Classification (SOC) system, distinctions between technical and professional workers, if made, are found at the minor group level rather than at the major group or division level.

The first major group is management support. This group was placed in the professional division rather than the managerial division, as in the SOC, for it was felt that respondents consider individual management support occupations functionally closer to the professional specialties of the division than to the upper and middle management occupations of the first division. The management support group also includes a residual allowing the combination of this major group with the management division, if SOC compatibility is required.

The remaining major groups primarily follow SOC order: "Hard" sciences, including engineering; the social sciences and related disciplines, such as law and teaching; health fields; and, writing, art, and related fields. The two exceptions to the SOC order, the technician and computer groups, were moved so that these occupations would appear in closer proximity to the occupations they most commonly support.

Sales and related occupations. The SOC arranges the sales division into four segments:

Supervisory; sale of most services; sale of retail products; and sales-related occupations. In both the new OES system and the SOC, retail sales is not an industry designation but rather an occupational designation for sales activities which are directed towards individuals rather than organizations or businesses.

Unlike the SOC, the new OES system includes all service sales occupations in the major groups as "sales occupations, service."

In addition, a new major group was created by combining the last three SOC categories because they involve the sale of products rather than services. A few sales-related occupations such as demonstrators have also been included in this new group.

The new OES sales division is somewhat larger in scope than the previous OES category because of the addition of occupations such as sales engineers and cashiers. These additions to the sales group in the new OES structure do not, however, diminish the magnitude of the increase in sales personnel in manufacturing industries between 1980 and 1983.

Clerical and administrative support occupations. This division is organized into six major groups and a residual category. As with the other divisions, the supervisory category is first. The next major group includes industry-specific clerical occupations. This group is placed near the top of the clerical division so that respondents can more easily locate these occupations. These two major groups are followed by the general secretarial and related group, an office machine group, a communications group, and a material recording group.

Service occupations. The previous OES system included protective services, food service, and cleaning service occupations as summary occupational groups. The new system includes these as major groups and adds health and personal service occupations, while expanding the cleaning group to encompass building service organizations.

Agriculture, forestry, fishing, and related occupations. Because many of the occupations related to this division are found in industries outside the scope of the OES survey, the previous OES system coding structure had no comparable category. At present, the division covers only those occupations needed for the OES survey as defined by its current nonagricultural scope. In the 1983

manufacturing survey, for example, only the lumber and wood products industry (SIC 24) and, to a lesser degree, food and kindred products (SIC 20) had significant employment in this category.

Production, construction, operating, maintenance, and material handling occupations. As in the previous OES system, this is the largest and most diverse of all the OES divisions. The major groups are listed below:

- Supervisory
- Inspecting
- Repair
- Construction and extraction
- Precision production
- Machine setting and operating
- Assembling and handworking
- Plant and system operation
- Transportation and material handling
- Helpers and laborers

To understand the organization of this division, it is important to be familiar with SOC principles. The first basic principle of organization is that occupations are grouped by function (e.g., inspecting, repairing, producing). An equally important principle is organization by skill requirements (e.g., precision, setup, operating, helping).

A third organizing principle in many of these groups is the distinction made between machine and hand operations. In this case, hand operations include the use of hand-held power tools. The hand and machine categories are not exhaustive, however, since both precision hand work and precision machine work are placed in the same category. For OES purposes, an exception to the SOC placement was made, and precision assembling occupations were placed in the handworking category, allowing for proximity to the other assembling occupations.

The SOC and the new OES systems also distinguish between "manual" occupations, such as material handling, and "hand" occupations, such as grinding. Here, the distinction is made according to whether or not the worker is directly working on the manufacture of a product.

Within the large production and precision and machine groups, distinctions are made on the basis of materials worked (e.g., metal/plastic, wood, textile, assorted/other). The assorted/other category includes working with combined materials as well as working with single materials, such as stone, which have not previously been specified.

Appendix D. OES Survey Data Available from State Agencies

State data on occupational employment in the industries covered in this bulletin are available as indicated in the following table. These data may be obtained from the State employment security agencies listed on the inside back cover of this publication.

Table D-1. OES survey data available by State and year

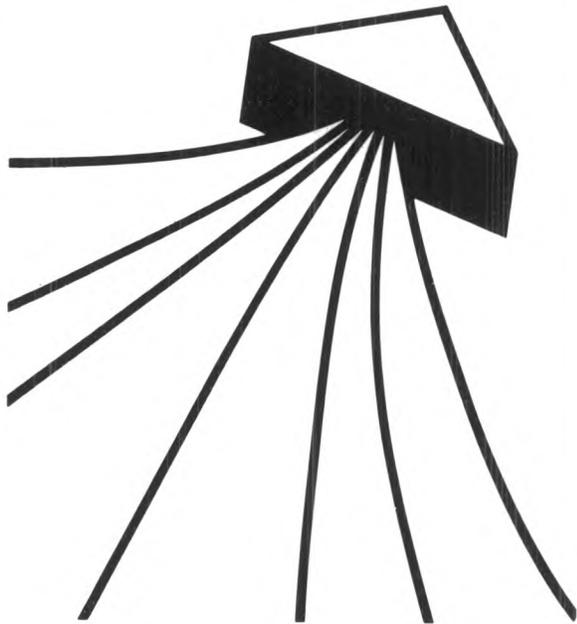
State	1973	1975	1978	1981	1984	State	1973	1975	1978	1981	1984
Alabama		x	x	x	x	Missouri	x	x	x	x	x
Alaska	x	x	x	x	x	Montana				x	x
Arizona			x	x	x	Nevada	x	x	x	x	x
Arkansas			x	x	x	New Hampshire			x		x
California			x			New Jersey	x	x	x	x	x
Colorado	x	x	x	x	x	New Mexico			x	x	x
Connecticut			x	x	x	New York		x	x	x	x
Delaware	x	x	x	x	x	North Carolina	x	x	x	x	x
District of Columbia	x	x	x	x	x	North Dakota			x	x	x
Florida	x	x	x	x	x	Nebraska				x	x
						Ohio				x	x
Georgia		x	x	x	x	Oklahoma	x	x	x	x	x
Hawaii			x	x	x	Oregon	x	x	x	x	x
Idaho			x	x	x	Pennsylvania		x	x	x	x
Illinois			x	x	x	Rhode Island			x	x	x
Indiana	x	x	x	x	x	South Carolina	x	x	x	x	x
Iowa				x	x	South Dakota			x	x	x
Kansas				x	x	Tennessee	x	x	x	x	x
Kentucky		x	x	x	x	Texas		x	x	x	x
Louisiana			x	x	x	Utah	x	x	x	x	x
Maine	x	x	x	x	x	Vermont				x	x
Maryland	x	x	x	x	x	Virginia	x	x	x	x	x
Massachusetts	x	x	x	x	x	Washington				x	x
Michigan			x	x	x	West Virginia	x	x	x	x	x
Minnesota	x	x	x	x	x	Wisconsin			x	x	x
Mississippi		x	x	x	x	Wyoming			x	x	x

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