

# Occupational Employment in Mining, Construction, Finance, and Services

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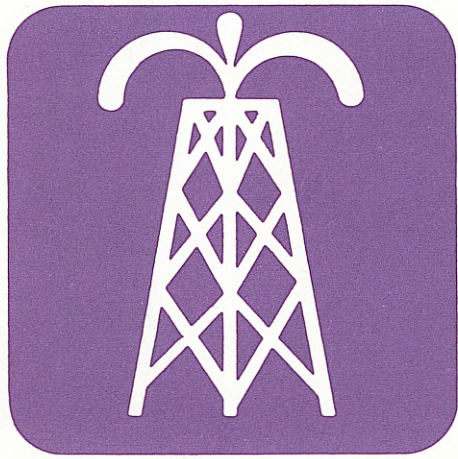
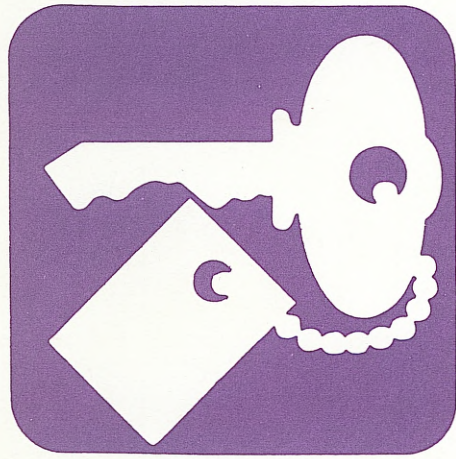
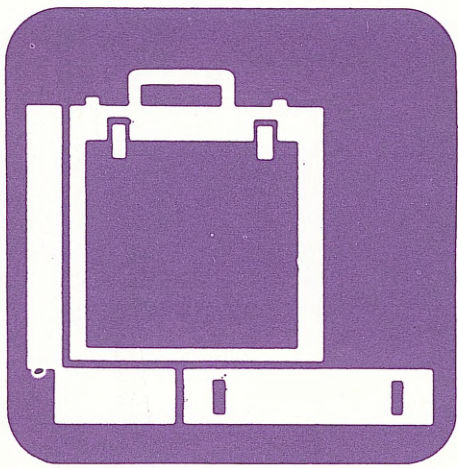
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# Occupational Employment in Mining, Construction, Finance, and Services

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U.S. Department of Labor  
Raymond J. Donovan, Secretary

Bureau of Labor Statistics  
Janet L. Norwood, Commissioner

February 1984

Bulletin 2186







# Preface

This bulletin provides data from a 1981 survey of occupational employment in mining; construction; finance, insurance, and real estate; and selected services industries. (Occupational employment data from a 1980 survey of hospitals are also included; see appendix B.) Earlier surveys of selected nonmanufacturing industries were conducted in 1973, 1975, and 1978. Results of the 1978 survey were published in Bulletin 2088, *Occupational Employment in Selected Nonmanufacturing Industries*. Remaining nonmanufacturing industries were surveyed in 1979 and results were published in Bulletin 2116, *Occupational Employment in Transportation, Communications, Utilities, and Trade*.

Surveys of the manufacturing sector were conducted in 1971, 1974, 1977, and 1980. Results of the 1977 and 1980 surveys were published in Bulletins 2057 and 2133, respectively, *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 also are 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 Wanda L. Bland under the direction of Linda P. Hardy. John Shew and Barbara L. Keitt provided data processing support. Typing assistance was provided by Minnie L. Dickerson. Material in the 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 non-agricultural establishments. The Bureau of Labor Statistics provides the procedures and technical assistance for the survey, State employment security agencies collect the data, and the Employment and Training Administration provides administrative support. In 1981, 48 States and the District of Columbia participated in the survey compared with 43 States in 1978, 29 States in 1975, and 22 in 1973. BLS conducted a supplemental survey in 1981, with the financial aid of the National Science Foundation, to collect data in the nonparticipating States and to develop national estimates.

This bulletin presents national data only. Data on occupational employment in each participating State are available from the State employment security agencies (appendix B).

## Survey procedures

The survey is conducted over a 3-year cycle; manufacturing industries are surveyed in one year and non-manufacturing industries in the other two 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. The reference month for the 1981 survey was April, May, or June (appendix A).

For the 1981 survey, 19 separate questionnaires were used, each having detailed occupations related specifically to a particular industry's activity. For example, "claims clerk" was surveyed in only one industry—insurance. Cross-industry estimates, therefore, cannot be developed for most detailed occupations because not all detailed occupations were included on every survey questionnaire. This bulletin presents cross-industry data for major occupational groups.

## Occupational and industrial classification

The OES classification system combines two widely used systems—the *Dictionary of Occupational Titles* (DOT) and the system used for the 1970 Census of Population. Occupational titles and descriptions in the survey are based primarily on the *Dictionary of Occupational Titles*.<sup>1</sup> The DOT was used to develop the definitions of occupations because it is the most detailed classification available. Summary categories and residual groups generally follow the categories used in the 1970 Census. 'Crosswalks' have been developed between the two systems so that users may integrate OES data with data from sources using the Census classification.

The industrial classification system is that described in the 1972 edition of the *Standard Industrial Classification Manual*,<sup>2</sup> whereby reporting establishments are classified into industries on the basis of major product or activity.

## 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

<sup>1</sup> *Dictionary of Occupational Titles*, fourth edition (U.S. Employment Service, U.S. Department of Labor, 1977.)

<sup>2</sup> *Standard Industrial Classification Manual* (Office of Management and Budget, Executive Office of the President, 1972), as amended in *Supplement*, 1977.



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.

A more detailed statement describing the survey is presented in appendix A.

### **Data presented**

This bulletin presents occupational employment for 2-digit SIC industries. However, health services (SIC 80) excludes data for hospitals (SIC 806), and membership organizations (SIC 86) excludes data for religious

organizations (SIC 866).<sup>3</sup> Data are presented for each industry under the following headings: Employment, percent of total employment, relative error, and percent of establishments reporting the occupation.

Employment is based upon survey results adjusted to reflect total industry employment. The percent of total employment refers to total employment in the industry. Relative error measures the level of confidence to be placed on each estimate. The percent of establishments reporting a particular occupation indicates the frequency of occurrence of the 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 are not shown separately but are included in the appropriate residual categories.

Employment is rounded to the nearest ten. The relative error and the percent of respondents reporting the occupation are rounded to the nearest whole percent. The percent of total employment was computed from rounded employment data.

<sup>3</sup> 1980 data for hospitals are presented in appendix B. Additional occupational employment data at the more detailed 3-digit SIC level are available upon request from the Office of Employment and Unemployment Statistics. Definitions for all occupations surveyed are also available upon request.



# Summary

In 1981, employment in the selected nonmanufacturing industries covered by this survey was approximately 23.8 million, or more than one-fourth of all nonagricultural wage and salary employment in the Nation.

As shown in table 1, 55 percent of the workers were employed in service industries, such as business services and health services. Finance, insurance, and real estate employed 5.3 million workers or 22 percent. Construction and mining, with 4.2 million and 1.1 million workers, respectively, accounted for the remaining employment.

For the survey, workers were classified into seven major occupational groups: Managers and officers; professional workers; technical workers; service workers; maintenance, construction, repair, material handling, and powerplant workers; clerical workers; and sales workers. Employment in these occupational groups is summarized below. Tables 2 and 3 present the distribution among the various industries surveyed. Occupational employment in each major industry group is discussed in subsequent sections, which also present data by industry segment (two-digit SIC).

## Managers and officers

Persons holding positions as managers and officers are primarily concerned with the policymaking, planning, organizing, staffing, directing, and controlling activities common to many types of organizations. Also included are persons responsible for the operation of an enterprise or establishment (usually small scale) in which they may engage, in part, in the same activities as the workers they supervise.

In the nonmanufacturing industries surveyed in 1981, managers and officers numbered 2.7 million, representing 11 percent of employment. The following industries, in order of predominance, were the largest employers of managers and officers: Construction; insurance and real estate; and banks and credit agencies.

## Professional workers

Persons employed in professional positions usually deal with the theoretical or practical aspects of fields such as science, engineering, technical work, art, education, medicine, law, and business relations. Most of these occupations require substantial educational preparation, usually at the university level.

In 1981, professional workers numbered just over 3

million, accounting for nearly 13 percent of the employment covered by this survey. The largest concentrations of professional workers were found in health services (except hospitals), miscellaneous services, and business services.

## Technical workers

Technical workers utilize knowledge of fundamental scientific, engineering, mathematical, computer programming, or drafting principles. This knowledge is acquired through study at technical schools and junior colleges, through other formal post-high school training less extensive than a 4-year college course, or through equivalent on-the-job training or experience.

More than 1 million technical workers were employed in the surveyed industries in 1981 or 4 percent of all workers employed in these industries. Forty-six percent of the technical workers surveyed were in health services (excluding hospitals); business services and miscellaneous services each accounted for 18 percent.

## Service workers

Persons employed 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, and similar places.

Service workers ranked third among the seven major occupational groups, with 4.1 million workers or 17 percent of the employment covered by the survey. Nearly three-fifths of these workers were employed in health services (except hospitals), business services, and hotels and other lodging places.

## Maintenance, construction, repair, material handling, and powerplant workers

This occupational group includes all skilled, semiskilled, and unskilled workers performing machine and manual tasks.

Ranking second of the seven major groups, this occupational group included 5.9 million workers or one-fourth of surveyed employment in 1981. More than half of these workers were employed in the construction industry.

## Clerical workers

Persons in this occupational group are either office clerical workers or plant clerical workers. *Office clerical*



workers prepare, transcribe, transfer, systematize, and preserve written communications and records, as well as collect accounts and distribute information. *Plant* clerical workers plan, coordinate, or expedite production and the flow of work. These workers are also involved in the clerical aspects of receiving, storing, issuing, or shipping of materials, merchandise, supplies, or equipment.

The largest of the seven major occupational groups in the industries surveyed, clerical workers numbered over 6.2 million in 1981 or 26 percent of total employment. Banks and credit agencies employed one-fourth of these workers; large concentrations of clerical workers were also found in insurance and real estate, and in the business services industry.

### Sales workers

Sales workers include sales representatives and sales clerks. Sales representatives (also called sales agents or sales associates) utilize specific knowledge of the commodity or service being sold. Sales clerks sell any of a large variety of goods or services, and usually only require familiarity with the pricing of those goods and services.

In 1981, sales workers numbered approximately 800,000, representing only 3 percent of the employment covered by this survey. Insurance and real estate employed by far the largest number of sales workers, 48 percent. Business services employed 15 percent, and security and commodity brokers and investment services employed 9 percent.

**Table 1. Employment in selected nonmanufacturing industries, 1981**

Industry	Employment	Percent of total nonmanufacturing employment
Total .....	23,833,590	100.0
Mining, total .....	1,129,710	4.7
Mining, except oil and gas extraction .....	461,960	1.9
Oil and gas extraction .....	667,750	2.8
Construction, total .....	4,235,230	17.8
General building contractors .....	1,098,640	4.6
Heavy construction contractors .....	934,770	3.9
Special trade contractors .....	2,201,820	9.2
Finance, insurance, and real estate, total .....	5,301,890	22.2
Banks and credit agencies .....	2,203,560	9.2
Security and commodity brokers and investment services .....	381,710	1.6
Insurance and real estate .....	2,716,620	11.4
Services, total .....	13,166,760	55.2
Hotels and other lodging places .....	1,129,770	4.7
Personal services .....	905,430	3.8
Business services .....	3,263,280	13.7
Auto repair, services, and garages .....	571,160	2.4
Miscellaneous repair services .....	248,760	1.0
Motion pictures .....	213,050	.9
Amusement and recreation services, except motion pictures .....	769,770	3.2
Health services, except hospitals .....	2,631,910	11.0
Legal services .....	542,980	2.3
Social services .....	1,163,850	4.9
Museums and botanical and zoological gardens .....	33,760	.1
Membership organizations, except religious organizations .....	643,390	2.7
Miscellaneous services .....	1,049,650	4.4



**Table 2. Employment in selected nonmanufacturing industries by major occupational group, 1981**

Industry	Managers and officers	Professional workers	Technical workers	Service workers	Maintenance, construction, repair, material handling, and powerplant workers	Clerical workers	Sales workers
Total .....	2,712,320	3,009,690	1,022,630	4,128,900	5,910,390	6,249,190	800,600
Mining, except oil and gas extraction	25,000	20,250	7,870	6,060	<sup>1</sup> 369,970	31,150	1,660
Oil and gas extraction .....	54,150	91,130	27,660	7,580	<sup>2</sup> 390,490	91,660	5,080
Construction .....	447,000	171,230	43,350	36,610	3,135,510	350,520	51,110
Banks and credit agencies .....	418,420	135,240	16,410	49,420	11,590	1,546,320	26,190
Security and commodity brokers and investment services .....	65,770	54,180	5,660	9,350	5,040	169,170	72,590
Insurance and real estate .....	421,350	278,790	33,390	258,880	232,090	1,110,070	382,000
Hotels and other lodging places .....	76,720	23,070	2,520	738,310	90,370	185,690	13,090
Personal services .....	105,200	46,580	2,570	325,260	253,110	144,150	28,560
Business services .....	293,160	406,530	187,390	856,190	460,250	936,460	123,300
Auto repair, services, and garages ....	85,220	5,000	850	8,330	370,470	88,720	12,570
Miscellaneous repair services .....	34,300	5,620	15,300	3,340	143,600	34,320	12,280
Motion pictures .....	27,710	39,630	3,310	56,670	26,350	45,760	13,620
Amusement and recreation services, except motion pictures .....	64,540	114,270	2,600	339,370	118,070	104,520	26,400
Health services, except hospitals .....	154,420	549,510	466,860	858,460	111,170	488,060	3,430
Legal services .....	36,320	206,080	1,430	8,360	320	290,380	90
Social services .....	120,870	313,170	15,030	381,870	110,740	211,560	10,610
Museums and botanical and zoological gardens .....	3,660	5,420	1,540	10,810	4,390	6,000	1,940
Membership organizations, except religious organizations .....	158,690	122,430	3,220	160,840	23,910	164,060	10,240
Miscellaneous services .....	119,820	421,560	185,670	13,190	52,950	250,620	5,840

<sup>1</sup> Includes mining and processing occupations.

<sup>2</sup> Includes petroleum and gas production workers.

**Table 3. Percent distribution of employment in selected nonmanufacturing industries by major occupational group, 1981**

Industry	All occupations	Managers and officers	Professional workers	Technical workers	Service workers	Maintenance, construction, repair, material handling, and powerplant workers	Clerical workers	Sales workers
Total .....	100.0	11.4	12.6	4.3	17.3	24.8	26.2	3.4
Mining, except oil and gas extraction	100.0	5.4	4.4	1.7	1.3	<sup>1</sup> 80.1	6.7	.4
Oil and gas extraction .....	100.0	8.1	13.6	4.1	1.1	<sup>2</sup> 58.5	13.7	.8
Construction .....	100.0	10.6	4.0	1.0	.9	74.0	8.3	1.2
Banks and credit agencies .....	100.0	19.0	6.1	.7	2.2	.5	70.2	1.2
Security and commodity brokers and investment services .....	100.0	17.2	14.2	1.5	2.4	1.3	44.3	19.0
Insurance and real estate .....	100.0	15.5	10.3	1.2	9.5	8.5	40.9	14.1
Hotels and other lodging places .....	100.0	6.8	2.0	.2	65.4	8.0	16.4	1.2
Personal services .....	100.0	11.6	5.1	.3	35.9	28.0	15.9	3.2
Business services .....	100.0	9.0	12.5	5.7	26.2	14.1	28.7	3.8
Auto repair, services, and garages ....	100.0	14.9	.9	.1	1.5	64.9	15.5	2.2
Miscellaneous repair services .....	100.0	13.8	2.3	6.2	1.3	57.7	13.8	4.9
Motion pictures .....	100.0	13.0	18.6	1.6	26.6	12.4	21.5	6.4
Amusement and recreation services, except motion pictures .....	100.0	8.4	14.8	.3	44.1	15.3	13.6	3.4
Health services, except hospitals .....	100.0	5.9	20.9	17.7	32.6	4.2	18.5	.1
Legal services .....	100.0	6.7	38.0	.3	1.5	.1	53.5	( <sup>3</sup> )
Social services .....	100.0	10.4	26.9	1.3	32.8	9.5	18.2	.9
Museums and botanical and zoological gardens .....	100.0	10.8	16.1	4.6	32.0	13.0	17.8	5.7
Membership organizations, except religious organizations .....	100.0	24.7	19.0	.5	25.0	3.7	25.5	1.6
Miscellaneous services .....	100.0	11.4	40.2	17.7	1.3	5.0	23.9	.6

<sup>1</sup> Includes mining and processing occupations.

<sup>3</sup> Less than 0.5. percent.

<sup>2</sup> Includes petroleum and gas production workers.



# 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 mining activity.

In 1981, mining employed approximately 1.1 million workers or 5 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 three-fifths 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 461,960 workers employed in this group of industries in 1981, half were engaged in mining bituminous coal and lignite. Twenty-seven percent worked in mining and quarrying of nonmetallic minerals, except fuels; 23 percent in mining metal; and only 1 percent in mining anthracite (tables 4 through 7).

The largest occupational group in mining, except oil and gas extraction, consisted of mining, processing, maintenance, construction, repair, material handling, and powerplant workers, numbering 369,970 or four-fifths of total employment in this industry group. Bituminous coal and lignite mining employed the largest number of these workers, with 193,000 or 52 percent. Clerical workers, the second largest occupational group, numbered 31,150, accounting for 7 percent of employment in this industry group. Seventy-four percent of these clerical workers were in office occupations. Managers and officers, numbering 25,000, were the third largest occupational group, with 5 percent of employment in mining, except oil and gas extraction. Bituminous coal and lignite mining employed the largest number of these workers—10,360 or 41 percent of all managers and officers in this industry group. The remaining employment was distributed as follows: Professional workers, 4 percent; technical workers, 2 percent;

service workers, 1 percent; and sales workers, only 0.4 percent.

The tabulation below lists the five most populous occupations in the industry group:

	<i>Employment</i>	<i>Percent of industry employment</i>
Heavy equipment operator . . . . .	46,570	10.1
Nonworking supervisor . . . . .	28,650	6.2
Truck driver . . . . .	25,120	5.4
Mine machinery mechanic . . . . .	13,900	3.0
Welders and flamecutters . . . . .	11,370	2.5

## 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 1981, oil and gas extraction employed 667,750 workers or 59 percent of all workers employed in the mining industry. Most of these workers, 62 percent, were engaged in providing oil and gas field services, such as exploration or drilling.

As shown in table 8, the largest occupational group in this industry consisted of over 390,490 petroleum and gas production, maintenance, construction, repair, material handling, and powerplant workers or 58 percent of total employment in oil and gas extraction. Clerical workers, totaling 91,660 or 14 percent of industry employment, ranked second of the seven major groups. Also with 14 percent, professional workers numbered 91,130. Managers and officers, totaling 54,150, accounted for 8 percent of employment in oil and gas extraction. The remaining industry employment was distributed as follows: Technical workers, 4 percent; service workers, 1 percent; and sales workers, 1 percent.

The five most populous occupations in oil and gas extraction are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Roustabout . . . . .	90,980	13.6
Rotary drill operator helper . . . . .	32,950	4.9
Nonworking supervisor . . . . .	24,070	3.6
Secretary . . . . .	22,520	3.4
Rotary drill operator . . . . .	22,490	3.4



**Table 4. Mining, except oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 10, 11, 12, 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	461,960	100.00	--	--
Managers and officers .....	25,000	5.41	n.a.	n.a.
Professional occupations .....	20,250	4.38	n.a.	n.a.
Engineers, total .....	7,570	1.64	n.a.	n.a.
Chemical engineer .....	210	.05	9	2
Civil engineer .....	460	.10	8	5
Industrial engineer .....	510	.11	8	5
Mechanical engineer .....	520	.11	8	4
Metallurgists and metallurgical engineers .....	680	.15	6	5
Mining engineer .....	2,870	.62	5	18
Safety engineer .....	1,240	.27	5	12
All other engineers .....	1,080	.23	n.a.	n.a.
Chemist .....	1,030	.22	7	7
Geologists and geophysicists .....	2,700	.58	5	12
All other natural and mathematical scientists .....	220	.05	18	2
Systems analyst, electronic data processing .....	580	.13	10	3
Purchasing agent and/or buyer .....	1,670	.36	5	17
Accountants and auditors .....	3,090	.67	5	21
Lawyer .....	420	.09	15	2
Personnel and labor relations specialists .....	1,710	.37	4	13
All other professional workers .....	1,260	.27	n.a.	n.a.
Technical occupations .....	7,870	1.70	n.a.	n.a.
Computer programmer .....	640	.14	11	4
Engineering technicians, total .....	4,160	.90	n.a.	n.a.
Drafter .....	1,370	.30	5	12
Surveyor .....	1,210	.26	5	10
Mechanical engineering technician .....	120	.03	16	1
Industrial engineering technician .....	180	.04	25	2
Civil engineering technician .....	120	.03	15	1
All other engineering technicians .....	1,160	.25	n.a.	n.a.
Science technicians .....	2,300	.50	6	8
All other technicians .....	770	.17	n.a.	n.a.
Service occupations .....	6,060	1.31	n.a.	n.a.
Janitors, porters, and cleaners .....	1,970	.43	5	13
Guards and doorkeepers .....	2,970	.64	6	14
Food service workers .....	180	.04	13	1
Supervisor, nonworking-service only .....	420	.09	16	2
All other service workers .....	520	.11	n.a.	n.a.
Mining, processing, maintenance, construction, repair, material handling, and powerplant occupations .....	369,970	80.09	n.a.	n.a.
Mechanics and repairers, total .....	37,960	8.22	n.a.	n.a.
Mechanic, automotive .....	4,800	1.04	6	21
Diesel mechanic .....	4,660	1.01	5	18
Engineering equipment mechanic .....	5,160	1.12	7	15
Mine machinery mechanic .....	13,900	3.01	6	14
Mechanic, maintenance .....	7,280	1.58	7	14
All other mechanics and repairers .....	2,160	.47	n.a.	n.a.
Truck driver .....	25,120	5.44	3	53
Auger machine operator .....	260	.06	33	1
Blaster, mining and quarrying .....	5,480	1.19	5	17
Bonder and/or wiper .....	380	.08	16	2
Header, bottomer, car dropper and/or cager .....	1,130	.24	10	3
Braker, train .....	1,320	.29	14	2
Brattice builder .....	2,180	.47	7	4
Carpenter .....	1,420	.31	7	7
Cement mason .....	680	.15	11	2
Coal washer .....	2,000	.43	12	5
Continuous mining machine operator .....	7,740	1.68	6	6
Crane, derrick, and hoist operators .....	3,620	.78	5	19
Cutting machine operator .....	1,870	.40	13	3
Delivery and/or route worker .....	1,840	.40	6	7
Dispatcher, mine car .....	650	.14	11	2
Dredge operator .....	1,070	.23	7	7
Drier operator, coal or ore .....	1,630	.35	8	6

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 1981—Continued**

(SIC 10, 11, 12, 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Mining, processing, maintenance, construction, repair, material handling, and powerplant occupations—Continued				
Driller, hand .....	2,260	0.49	7	9
Driller, machine .....	8,660	1.87	8	22
Dump operator .....	1,040	.23	10	4
Electrician .....	10,860	2.35	5	17
Fire boss .....	1,620	.35	8	5
Supervisor, nonworking .....	28,650	6.20	3	43
Heavy equipment operator .....	46,570	10.08	3	67
Rigger .....	380	.08	18	1
Hydraulic operator .....	100	.02	26	( <sup>3</sup> )
Industrial truck operator .....	1,640	.36	8	8
Inspector .....	590	.13	15	3
Lamp keeper and/or repairer .....	570	.12	8	4
Loading-machine operator, underground .....	7,680	1.66	7	18
Long-wall miner operator .....	400	.09	17	1
Long-wall miner operator helper .....	990	.21	18	1
Machinist .....	2,460	.53	6	8
Maintenance repairer, general utility .....	7,860	1.70	6	23
Helper, trades .....	8,070	1.75	5	18
Millwright .....	1,050	.23	17	1
Dinkey operator .....	1,860	.40	10	4
Oiler .....	6,220	1.35	5	21
Painter, maintenance .....	460	.10	9	3
Panelboard operator and/or grinding mill panelboard operator .....	2,560	.55	5	12
Plumber and/or pipefitter .....	750	.16	8	2
Production packager, hand or machine .....	1,350	.29	9	2
Rock splitter, quarry .....	770	.17	9	3
Reagent tender .....	380	.08	10	2
Rock-dust sprayer .....	1,260	.27	12	2
Roof bolter .....	10,950	2.37	5	7
Shaker tender .....	830	.18	9	3
Sheet metal worker .....	140	.03	28	1
Shuttle-car operator .....	11,240	2.43	5	7
Stationary boiler firer .....	140	.03	15	1
Stationary engineer .....	660	.14	12	2
Tipple operator .....	2,580	.56	9	8
Track layer .....	1,990	.43	9	4
Welder and/or flamecutter .....	11,370	2.46	4	32
Surveyor helper .....	970	.21	7	7
Belt repairer .....	3,760	.81	8	5
Sampler and/or test preparer .....	1,450	.31	9	7
Sawyer, stone .....	350	.08	12	2
Separator tender .....	500	.11	12	2
Conveyor operator or tender .....	5,160	1.12	5	20
Yard engineer .....	870	.19	10	2
Mill and/or grinder operator, minerals .....	5,800	1.26	3	21
Pump operator .....	1,400	.30	8	5
Mixer and/or blender, chemicals and chemical products .....	370	.08	12	2
All other skilled craft and kindred workers .....	6,310	1.37	n.a.	n.a.
All other operatives and semiskilled workers .....	17,050	3.69	n.a.	n.a.
All other laborers and unskilled workers .....	42,670	9.24	n.a.	n.a.
Clerical occupations .....	31,150	6.74	n.a.	n.a.
Office clerical workers, total .....	23,070	4.99	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	300	.06	14	2
Computer operator .....	620	.13	7	6
Keypunch operator .....	580	.13	9	4
All other office machine operators .....	70	.02	n.a.	n.a.
Stenographer .....	480	.10	13	2
Accounting clerk .....	2,200	.48	5	18
Bookkeeper, hand .....	1,290	.28	7	15
Cashier .....	70	.02	13	1
File clerk .....	530	.11	12	2
General office clerk .....	4,370	.95	4	33
Mail clerk .....	160	.03	15	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 1981—Continued**

(SIC 10, 11, 12, 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers,—Continued				
Order clerk .....	320	0.07	7	4
Payroll and/or timekeeping clerk .....	1,780	.39	5	19
Personnel clerk .....	610	.13	6	7
Receptionist .....	350	.08	10	4
Secretary .....	5,470	1.18	5	32
Switchboard operator .....	260	.06	11	2
Switchboard operator/receptionist .....	510	.11	5	9
Typist .....	1,180	.26	8	8
Clerical supervisor, office or plant .....	1,160	.25	9	8
All other office clerical workers .....	760	.16	n.a.	n.a.
Plant clerical workers, total .....	8,080	1.75	n.a.	n.a.
Production clerk and/or coordinator .....	630	.14	6	5
Shipping packer .....	210	.05	15	1
Shipping and/or receiving clerk .....	420	.09	9	4
Weigher, recordkeeping .....	2,530	.55	4	25
Stock clerk, stockroom, warehouse or storage yard .....	3,430	.74	4	15
Dispatcher, vehicle, service or work .....	440	.10	7	4
All other plant clerical workers .....	420	.09	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative .....	1,660	.36	n.a.	n.a.
Sales clerk .....	1,550	.34	5	13
Sales clerk .....	110	.02	29	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.



**Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 10)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	105,330	100.00	--	--
Managers and officers .....	4,460	4.23	n.a.	n.a.
Professional occupations .....	8,810	8.36	n.a.	n.a.
Engineers, total .....	3,060	2.91	n.a.	n.a.
Chemical engineer .....	80	.08	13	5
Civil engineer .....	120	.11	9	8
Industrial engineer .....	190	.18	9	9
Mechanical engineer .....	250	.24	11	11
Metallurgists and metallurgical engineers .....	560	.53	6	23
Mining engineer .....	1,030	.98	4	38
Safety engineer .....	290	.28	5	21
All other engineers .....	540	.51	n.a.	n.a.
Chemist .....	520	.49	11	20
Geologists and geophysicists .....	2,110	2.00	5	51
All other natural and mathematical scientists .....	100	.09	12	6
Systems analyst, electronic data processing .....	250	.24	9	10
Purchasing agent and/or buyer .....	360	.34	6	26
Accountants and auditors .....	920	.87	5	33
Lawyer .....	60	.06	20	3
Personnel and labor relations specialists .....	650	.62	5	25
All other professional workers .....	780	.74	n.a.	n.a.
Technical occupations .....	3,440	3.27	n.a.	n.a.
Computer programmer .....	230	.22	6	12
Engineering technicians, total .....	1,780	1.69	n.a.	n.a.
Drafter .....	560	.53	5	32
Surveyor .....	440	.42	6	21
Mechanical engineering technician .....	70	.07	24	3
All other engineering technicians .....	710	.67	n.a.	n.a.
Science technicians .....	990	.94	7	21
All other technicians .....	440	.42	n.a.	n.a.
Service occupations .....	1,690	1.60	n.a.	n.a.
Janitors, porters, and cleaners .....	610	.58	9	20
Guards and doorkeepers .....	790	.75	7	19
Food service workers .....	90	.09	18	2
Supervisor, nonworking-service only .....	90	.09	11	6
All other service workers .....	110	.10	n.a.	n.a.
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations .....	79,650	75.62	n.a.	n.a.
Mechanics and repairers, total .....	10,950	10.40	n.a.	n.a.
Mechanic, automotive .....	1,490	1.41	13	22
Diesel mechanic .....	1,330	1.26	10	14
Engineering equipment mechanic .....	1,040	.99	9	13
Mine machinery mechanic .....	3,230	3.07	13	21
Mechanic, maintenance .....	3,060	2.91	12	21
All other mechanics and repairers .....	800	.76	n.a.	n.a.
Truck driver .....	4,340	4.12	6	26
Blaster, mining and quarrying .....	2,280	2.16	9	16
Header, bottomer, car dropper and/or cager .....	260	.25	9	5
Braker, train .....	650	.62	22	3
Brattice builder .....	70	.07	26	1
Carpenter .....	630	.60	5	16
Cement mason .....	310	.29	12	4
Crane, derrick, and hoist operators .....	1,170	1.11	9	19
Delivery and/or route worker .....	90	.09	27	3
Dispatcher, mine car .....	90	.09	14	2
Drier operator, coal or ore .....	570	.54	18	8
Driller, hand .....	690	.66	12	8
Driller, machine .....	2,680	2.54	8	33
Dump operator .....	180	.17	20	5
Electrician .....	3,110	2.95	6	26
Supervisor, nonworking .....	7,520	7.14	6	43
Heavy equipment operator .....	4,820	4.58	6	33
Rigger .....	60	.06	13	1

See footnotes at end of table.



**Table 5. Metal mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 10)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Industrial truck operator .....	380	0.36	20	9
Inspector .....	350	.33	24	3
Lamp keeper and/or repairer .....	60	.06	11	4
Loading-machine operator, underground .....	1,370	1.30	10	11
Machinist .....	1,400	1.33	8	15
Maintenance repairer, general utility .....	1,190	1.13	7	18
Helper, trades .....	2,990	2.84	4	27
Millwright .....	510	.48	31	3
Dinkey operator .....	520	.49	14	4
Oiler .....	900	.85	7	15
Painter, maintenance .....	210	.20	10	7
Panelboard operator and/or grinding mill panelboard operator .....	640	.61	11	8
Plumber and/or pipefitter .....	500	.47	9	7
Reagent tender .....	310	.29	12	8
Roof bolter .....	130	.12	13	4
Shaker tender .....	200	.19	17	2
Shuttle-car operator .....	360	.34	9	5
Stationary boiler firer .....	60	.06	18	3
Stationary engineer .....	180	.17	21	3
Track layer .....	480	.46	19	4
Welder and/or flamecutter .....	2,990	2.84	8	23
Surveyor helper .....	210	.20	8	13
Belt repairer .....	130	.12	17	3
Sampler and/or test preparer .....	660	.63	12	12
Separator tender .....	120	.11	19	3
Conveyor operator or tender .....	660	.63	9	8
Yard engineer .....	370	.35	10	2
Mill and/or grinder operator, minerals .....	2,360	2.24	5	23
Pump operator .....	290	.28	24	6
Mixer and/or blender, chemicals and chemical products .....	80	.08	17	4
All other skilled craft and kindred workers .....	3,380	3.21	n.a.	n.a.
All other operatives and semiskilled workers .....	5,510	5.23	n.a.	n.a.
All other laborers and unskilled workers .....	9,680	9.19	n.a.	n.a.
Clerical occupations .....	7,210	6.85	n.a.	n.a.
Office clerical workers, total .....	5,650	5.36	n.a.	n.a.
Computer operator .....	170	.16	9	11
Keypunch operator .....	170	.16	8	9
Stenographer .....	130	.12	22	5
Accounting clerk .....	580	.55	5	30
Bookkeeper, hand .....	100	.09	13	9
File clerk .....	170	.16	10	5
General office clerk .....	720	.68	6	25
Order clerk .....	90	.09	8	6
Payroll and/or timekeeping clerk .....	290	.28	7	22
Personnel clerk .....	180	.17	5	13
Receptionist .....	60	.06	11	7
Secretary .....	1,880	1.78	9	51
Switchboard operator/receptionist .....	110	.10	7	14
Typist .....	400	.38	8	17
Clerical supervisor, office or plant .....	240	.23	9	13
All other office clerical workers .....	360	.34	n.a.	n.a.
Plant clerical workers, total .....	1,560	1.48	n.a.	n.a.
Production clerk and/or coordinator .....	230	.22	6	11
Shipping and/or receiving clerk .....	130	.12	13	7
Weigher, recordkeeping .....	80	.08	27	4
Stock clerk, stockroom, warehouse or storage yard .....	930	.88	6	22
Dispatcher, vehicle, service or work .....	60	.06	19	2
All other plant clerical workers .....	130	.12	n.a.	n.a.
Sales occupations .....	70	.07	n.a.	n.a.
Sales agent, associate, and/or representative .....	60	.06	21	4
All other sales workers .....	10	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.



**Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 12)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	230,080	100.00	--	--
Managers and officers .....	10,360	4.50	n.a.	n.a.
Professional occupations .....	7,620	3.31	n.a.	n.a.
Engineers, total .....	3,170	1.38	n.a.	n.a.
Civil engineer .....	210	.09	15	10
Industrial engineer .....	190	.08	19	9
Mechanical engineer .....	90	.04	24	5
Mining engineer .....	1,440	.63	10	41
Safety engineer .....	790	.34	7	31
All other engineers .....	450	.20	n.a.	n.a.
Chemist .....	230	.10	20	10
Geologists and geophysicists .....	220	.10	26	10
All other natural and mathematical scientists .....	100	.04	38	4
Systems analyst, electronic data processing .....	260	.11	20	5
Purchasing agent and/or buyer .....	970	.42	7	39
Accountants and auditors .....	1,250	.54	10	35
Lawyer .....	310	.13	19	7
Personnel and labor relations specialists .....	780	.34	8	29
All other professional workers .....	330	.14	n.a.	n.a.
Technical occupations .....	2,810	1.22	n.a.	n.a.
Computer programmer .....	320	.14	21	6
Engineering technicians, total .....	1,880	.82	n.a.	n.a.
Computer programmer .....	320	.14	21	6
Drafter .....	620	.27	10	26
Surveyor .....	670	.29	8	29
Industrial engineering technician .....	120	.05	36	5
All other engineering technicians .....	470	.20	n.a.	n.a.
Science technicians .....	420	.18	20	11
All other technicians .....	190	.08	n.a.	n.a.
Service occupations .....	3,030	1.32	n.a.	n.a.
Janitors, porters, and cleaners .....	790	.34	9	29
Guards and doorkeepers .....	1,630	.71	10	29
Supervisor, nonworking-service only .....	220	.10	27	4
All other service workers .....	390	.17	n.a.	n.a.
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations .....	193,290	84.01	n.a.	n.a.
Mechanics and repairers, total .....	17,770	7.72	n.a.	n.a.
Mechanic, automotive .....	1,330	.58	13	18
Diesel mechanic .....	1,740	.76	10	24
Engineering equipment mechanic .....	2,600	1.13	12	21
Mine machinery mechanic .....	9,320	4.05	8	31
Mechanic, maintenance .....	1,940	.84	16	15
All other mechanics and repairers .....	840	.37	n.a.	n.a.
Truck driver .....	7,500	3.26	7	50
Auger machine operator .....	230	.10	37	3
Blaster, mining and quarrying .....	2,210	.96	8	35
Bonder and/or wiper .....	370	.16	17	8
Header, bottomer, car dropper and/or cager .....	810	.35	14	13
Braker, train .....	450	.20	22	5
Brattice builder .....	2,070	.90	8	22
Carpenter .....	530	.23	18	13
Cement mason .....	330	.14	20	5
Coal washer .....	1,780	.77	13	22
Continuous mining machine operator .....	7,450	3.24	7	30
Crane, derrick, and hoist operators .....	760	.33	15	17
Cutting machine operator .....	1,520	.66	15	12
Delivery and/or route worker .....	110	.05	23	4
Dispatcher, mine car .....	540	.23	13	10
Drier operator, coal or ore .....	170	.07	20	6
Driller, hand .....	820	.36	16	12
Driller, machine .....	4,010	1.74	17	30
Dump operator .....	600	.26	16	12
Electrician .....	6,540	2.84	8	43

See footnotes at end of table.



**Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 12)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Fire boss .....	1,500	0.65	9	23
Supervisor, nonworking .....	15,880	6.90	5	59
Heavy equipment operator .....	27,510	11.96	6	73
Rigger .....	150	.07	40	2
Industrial truck operator .....	300	.13	30	5
Inspector .....	120	.05	22	5
Lamp keeper and/or repairer .....	490	.21	10	15
Loading-machine operator, underground .....	4,000	1.74	13	26
Long-wall miner operator .....	390	.17	17	5
Long-wall miner operator helper .....	980	.43	19	4
Machinist .....	580	.25	12	17
Maintenance repairer, general utility .....	2,970	1.29	15	19
Helper, trades .....	3,350	1.46	10	21
Dinkey operator .....	1,220	.53	14	12
Oiler .....	3,660	1.59	8	38
Painter, maintenance .....	110	.05	32	2
Panelboard operator and/or grinding mill panelboard operator .....	400	.17	17	9
Plumber and/or pipefitter .....	150	.07	27	4
Rock-dust sprayer .....	1,250	.54	12	12
Roof bolter .....	10,630	4.62	6	34
Shaker tender .....	350	.15	16	8
Shuttle-car operator .....	10,410	4.52	5	32
Stationary engineer .....	180	.08	26	3
Tipple operator .....	2,410	1.05	9	39
Track layer .....	1,380	.60	10	17
Welder and/or flamecutter .....	5,320	2.31	8	47
Surveyor helper .....	690	.30	10	22
Belt repairer .....	3,420	1.49	8	22
Sampler and/or test preparer .....	560	.24	19	16
Separator tender .....	170	.07	21	5
Conveyor operator or tender .....	2,400	1.04	10	17
Yard engineer .....	340	.15	22	4
Mill and/or grinder operator, minerals .....	210	.09	23	4
Pump operator .....	860	.37	9	19
All other skilled craft and kindred workers .....	1,640	.71	n.a.	n.a.
All other operatives and semiskilled workers .....	7,570	3.29	n.a.	n.a.
All other laborers and unskilled workers .....	23,170	10.07	n.a.	n.a.
Clerical occupations .....	12,640	5.49	n.a.	n.a.
Office clerical workers, total .....	9,330	4.06	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	200	.09	22	4
Computer operator .....	300	.13	13	12
Keypunch operator .....	250	.11	19	8
Stenographer .....	220	.10	21	4
Accounting clerk .....	760	.33	12	27
Bookkeeper, hand .....	430	.19	19	11
File clerk .....	310	.13	20	5
General office clerk .....	1,310	.57	11	26
Order clerk .....	110	.05	15	6
Payroll and/or timekeeping clerk .....	880	.38	9	35
Personnel clerk .....	300	.13	11	17
Receptionist .....	220	.10	14	11
Secretary .....	2,020	.88	10	40
Switchboard operator .....	160	.07	17	5
Switchboard operator/receptionist .....	250	.11	9	18
Typist .....	450	.20	18	10
Clerical supervisor, office or plant .....	690	.30	14	20
All other office clerical workers .....	470	.20	n.a.	n.a.
Plant clerical workers, total .....	3,310	1.44	n.a.	n.a.
Production clerk and/or coordinator .....	250	.11	14	8
Shipping and/or receiving clerk .....	110	.05	13	7
Weigher, recordkeeping .....	670	.29	13	22
Stock clerk, stockroom, warehouse or storage yard .....	1,990	.86	7	36

See footnotes at end of table.



**Table 6. Bituminous coal and lignite mining: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 12)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers,—Continued				
Dispatcher, vehicle, service or work .....	110	0.05	18	5
All other plant clerical workers .....	180	.08	n.a.	n.a.
Sales occupations .....	330	.14	n.a.	n.a.
Sales agent, associate, and/or representative .....	300	.13	18	6
All other sales workers .....	30	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.



**Table 7. Mining and quarrying of nonmetallic minerals, except fuels: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	122,920	100.00	--	--
Managers and officers .....	9,900	8.05	n.a.	n.a.
Professional occupations .....	3,710	3.02	n.a.	n.a.
Engineers, total .....	1,300	1.06	n.a.	n.a.
Chemical engineer .....	110	.09	12	1
Civil engineer .....	130	.11	9	3
Industrial engineer .....	120	.10	11	2
Mechanical engineer .....	180	.15	11	3
Metallurgists and metallurgical engineers .....	80	.07	11	1
Mining engineer .....	380	.31	6	7
Safety engineer .....	160	.13	6	4
All other engineers .....	140	.11	n.a.	n.a.
Chemist .....	280	.23	9	3
Geologists and geophysicists .....	370	.30	13	4
Systems analyst, electronic data processing .....	70	.06	22	1
Purchasing agent and/or buyer .....	320	.26	5	8
Accountants and auditors .....	900	.73	6	14
Personnel and labor relations specialists .....	280	.23	5	6
All other professional workers .....	190	.15	n.a.	n.a.
Technical occupations .....	1,610	1.31	n.a.	n.a.
Computer programmer .....	90	.07	16	2
Engineering technicians, total .....	490	.40	n.a.	n.a.
Drafter .....	180	.15	7	3
Surveyor .....	90	.07	8	2
All other engineering technicians .....	220	.18	n.a.	n.a.
Science technicians .....	890	.72	7	4
All other technicians .....	140	.11	n.a.	n.a.
Service occupations .....	1,300	1.06	n.a.	n.a.
Janitors, porters, and cleaners .....	550	.45	7	7
Guards and doorkeepers .....	540	.44	6	8
Food service workers .....	50	.04	22	1
Supervisor, nonworking-service only .....	100	.08	19	1
All other service workers .....	60	.05	n.a.	n.a.
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations .....	94,070	76.53	n.a.	n.a.
Mechanics and repairers, total .....	8,990	7.31	n.a.	n.a.
Mechanic, automotive .....	1,920	1.56	4	22
Diesel mechanic .....	1,480	1.20	5	17
Engineering equipment mechanic .....	1,490	1.21	5	14
Mine machinery mechanic .....	1,310	1.07	8	8
Mechanic, maintenance .....	2,280	1.85	7	13
All other mechanics and repairers .....	510	.41	n.a.	n.a.
Truck driver .....	12,820	10.43	2	61
Blaster, mining and quarrying .....	950	.77	6	13
Header, bottomer, car dropper and/or cager .....	60	.05	21	( <sup>3</sup> )
Braker, train .....	220	.18	16	1
Carpenter .....	240	.20	10	3
Coal washer .....	120	.10	25	( <sup>3</sup> )
Continuous mining machine operator .....	270	.22	24	( <sup>3</sup> )
Crane, derrick, and hoist operators .....	1,650	1.34	4	19
Cutting machine operator .....	180	.15	16	1
Delivery and/or route worker .....	1,640	1.33	7	9
Dredge operator .....	1,000	.81	6	11
Drier operator, coal or ore .....	890	.72	7	6
Driller, hand .....	700	.57	9	8
Driller, machine .....	1,900	1.55	5	17
Dump operator .....	250	.20	13	2
Electrician .....	1,150	.94	5	7
Supervisor, nonworking .....	5,150	4.19	3	38
Heavy equipment operator .....	13,770	11.20	2	74
Rigger .....	150	.12	16	1
Industrial truck operator .....	960	.78	7	8
Inspector .....	120	.10	10	3

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 1981—Continued**

(SIC 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Mining, processing, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Loading-machine operator, underground .....	2,300	1.87	4	17
Machinist .....	450	.37	9	4
Maintenance repairer, general utility .....	3,600	2.93	5	25
Helper, trades .....	1,680	1.37	5	14
Millwright .....	510	.41	15	1
Dinkey operator .....	120	.10	12	1
Oiler .....	1,480	1.20	4	17
Painter, maintenance .....	130	.11	10	2
Panelboard operator and/or grinding mill panelboard operator .....	1,520	1.24	5	14
Plumber and/or pipefitter .....	100	.08	18	1
Production packager, hand or machine .....	1,260	1.03	9	3
Rock splitter, quarry .....	720	.59	9	5
Reagent tender .....	50	.04	16	1
Roof bolter .....	190	.15	19	1
Shaker tender .....	240	.20	11	2
Shuttle-car operator .....	470	.38	13	1
Stationary boiler firer .....	50	.04	24	( <sup>3</sup> )
Stationary engineer .....	310	.25	18	1
Tipple operator .....	110	.09	17	1
Track layer .....	120	.10	21	( <sup>3</sup> )
Welder and/or flamecutter .....	2,830	2.30	4	29
Surveyor helper .....	70	.06	12	1
Belt repairer .....	200	.16	14	1
Sampler and/or test preparer .....	230	.19	9	3
Sawyer, stone .....	340	.28	12	2
Separator tender .....	190	.15	23	1
Conveyor operator or tender .....	2,090	1.70	4	23
Yard engineer .....	160	.13	13	1
Mill and/or grinder operator, minerals .....	3,230	2.63	4	25
Pump operator .....	250	.20	12	2
Mixer and/or blender, chemicals and chemical products .....	230	.19	16	1
All other skilled craft and kindred workers .....	1,570	1.28	n.a.	n.a.
All other operatives and semiskilled workers .....	4,670	3.80	n.a.	n.a.
All other laborers and unskilled workers .....	9,420	7.66	n.a.	n.a.
Clerical occupations .....				
Office clerical workers, total .....	11,080	9.01	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	7,910	6.44	n.a.	n.a.
Computer operator .....	100	.08	10	2
Keypunch operator .....	140	.11	10	3
Stenographer .....	150	.12	9	2
Accounting clerk .....	120	.10	22	1
Bookkeeper, hand .....	860	.70	5	13
File clerk .....	740	.60	5	17
General office clerk .....	50	.04	14	1
Mail clerk .....	2,310	1.88	3	37
Order clerk .....	50	.04	26	1
Payroll and/or timekeeping clerk .....	120	.10	8	3
Personnel clerk .....	580	.47	4	14
Receptionist .....	130	.11	13	3
Secretary .....	60	.05	9	2
Switchboard operator/receptionist .....	1,560	1.27	4	25
Typist .....	150	.12	5	5
Clerical supervisor, office or plant .....	320	.26	11	5
All other office clerical workers .....	220	.18	9	4
Plant clerical workers, total .....	250	.20	n.a.	n.a.
Production clerk and/or coordinator .....	3,170	2.58	n.a.	n.a.
Shipping packer .....	140	.11	8	3
Shipping and/or receiving clerk .....	160	.13	20	1
Weigher, recordkeeping .....	170	.14	18	2
Stock clerk, stockroom, warehouse or storage yard .....	1,770	1.44	3	31
Dispatcher, vehicle, service or work .....	500	.41	6	7
All other plant clerical workers .....	270	.22	8	4
	160	.13	n.a.	n.a.

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 1981—Continued**

(SIC 14)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Sales occupations .....	1,250	1.02	n.a.	n.a.
Sales agent, associate, and/or representative .....	1,180	.96	5	17
Sales clerk .....	70	.06	16	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 13)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	667,750	100.00	--	--
Managers and officers .....	54,150	8.11	n.a.	n.a.
Professional occupations .....	91,130	13.65	n.a.	n.a.
Engineers, total .....	27,490	4.12	n.a.	n.a.
Chemical engineer .....	700	.10	26	2
Civil engineer .....	740	.11	27	2
Electrical and electronic engineers .....	2,940	.44	22	2
Mechanical engineer .....	1,370	.21	19	3
Petroleum engineer .....	18,430	2.76	10	21
Safety engineer .....	680	.10	27	6
All other engineers .....	2,630	.39	n.a.	n.a.
Mathematical scientists .....	540	.08	48	1
Chemist .....	1,250	.19	37	1
Geologists and geophysicists .....	21,360	3.20	10	16
All other physical scientists .....	370	.06	n.a.	n.a.
Life scientist .....	360	.05	48	( <sup>3</sup> )
Systems analyst, electronic data processing .....	4,250	.64	20	4
Purchasing agent and/or buyer .....	2,150	.32	12	10
Accountants and auditors .....	14,100	2.11	11	24
Law clerk .....	160	.02	45	( <sup>3</sup> )
Lawyer .....	1,080	.16	14	4
Lease buyer .....	8,960	1.34	12	15
Paralegal personnel .....	120	.02	23	1
Personnel and labor relations specialists .....	2,680	.40	16	9
Title clerk .....	1,890	.28	23	3
All other professional workers .....	4,370	.65	n.a.	n.a.
Technical occupations .....	27,660	4.14	n.a.	n.a.
Computer programmer .....	2,590	.39	17	5
Engineering technicians, total .....	17,890	2.68	n.a.	n.a.
Computer, prospecting and/or computer, seismograph .....	770	.12	27	1
Drafter .....	5,490	.82	10	13
Electrical and electronic technicians .....	2,570	.38	19	4
Observer, electrical prospecting and/or gravity prospecting .....	1,280	.19	26	2
Scout .....	610	.09	23	2
Surveyor .....	1,620	.24	24	4
Mechanical engineering technician .....	810	.12	34	1
Civil engineering technician .....	370	.06	35	1
All other engineering technicians .....	4,370	.65	n.a.	n.a.
Science technicians .....	3,270	.49	25	3
Airplane pilot .....	1,070	.16	32	5
All other technicians .....	2,840	.43	n.a.	n.a.
Service occupations .....	7,580	1.14	n.a.	n.a.
Janitors, porters, and cleaners .....	3,380	.51	14	12
Guards and doorkeepers .....	730	.11	19	2
Food service workers .....	1,560	.23	22	2
Supervisor, nonworking-service only .....	1,110	.17	27	2
All other service workers .....	800	.12	n.a.	n.a.
Petroleum and gas production, maintenance, construction, repair, material handling and powerplant occupations .....	390,490	58.48	n.a.	n.a.
Mechanics and repairers, total .....	14,350	2.15	n.a.	n.a.
Mechanic, automotive .....	4,240	.63	10	15
Diesel mechanic .....	3,210	.48	13	9
Engineering equipment mechanic .....	1,710	.26	19	2
Mechanic, maintenance .....	4,100	.61	15	10
All other mechanics and repairers .....	1,090	.16	n.a.	n.a.
Truck driver .....	17,190	2.57	12	25
Blueprinting machine operator .....	160	.02	28	1
Cable driller .....	5,020	.75	22	7
Caser .....	1,810	.27	46	1
Cementer, oil well .....	4,380	.66	33	2
Clean-out driller .....	1,940	.29	34	4
Crane, derrick, and hoist operators .....	2,470	.37	19	3

See footnotes at end of table.

**Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 13)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Petroleum and gas production, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Delivery and/or route worker .....	160	0.02	49	1
Derrick operator, petroleum and gas extraction ....	16,760	2.51	9	14
Electrician .....	2,220	.33	17	6
Fitter, pipelaying .....	2,490	.37	34	( <sup>3</sup> )
Supervisor, nonworking .....	24,070	3.60	6	41
Formation testing operator .....	1,080	.16	33	2
Gager .....	2,170	.32	35	2
Natural gas treating unit operator .....	2,380	.36	26	3
Heavy equipment operator .....	10,580	1.58	12	15
Rigger .....	950	.14	38	1
Industrial truck operator .....	860	.13	38	2
Inspector .....	840	.13	38	1
Instrument repairer .....	680	.10	37	2
Liquefaction-and-regasification-plant operator ....	630	.09	38	1
Machinist .....	1,260	.19	29	2
Maintenance repairer, general utility .....	8,170	1.22	15	15
Helper, trades .....	5,000	.75	27	4
Mud-plant operator .....	760	.11	46	1
Oil pumper .....	16,090	2.41	14	19
Oiler .....	380	.06	41	1
Painter, maintenance .....	1,460	.22	35	2
Plumber and/or pipefitter .....	610	.09	42	1
Pumper, head .....	9,430	1.41	19	12
Rig-builder .....	1,530	.23	37	1
Rotary drill operator .....	22,490	3.37	8	22
Rotary drill operator helper .....	32,950	4.93	10	14
Roustabout .....	90,980	13.62	6	42
Service unit operator, oil well .....	12,240	1.83	14	11
Sheet metal worker .....	110	.02	46	( <sup>3</sup> )
Shooter and/or seismograph shooter .....	1,880	.28	28	2
Stationary engineer .....	1,560	.23	34	2
Technical operator, oil and gas .....	4,180	.63	27	3
Welder and/or flamecutter .....	11,180	1.67	13	16
Well puller .....	6,360	.95	21	7
Surveyor helper .....	1,800	.27	27	2
Sampler and/or test preparer .....	80	.01	47	1
All other skilled craft and kindred workers .....	7,030	1.05	n.a.	n.a.
All other operatives and semiskilled workers .....	19,400	2.91	n.a.	n.a.
All other laborers and unskilled workers .....	20,370	3.05	n.a.	n.a.
Clerical occupations .....				
Office clerical workers, total .....	91,660	13.73	n.a.	n.a.
Office clerical workers, total .....	86,240	12.92	n.a.	n.a.
Computer operator .....	4,170	.62	20	7
Keypunch operator .....	2,130	.32	15	4
Peripheral EDP equipment operator .....	360	.05	42	1
Duplicating machine operator .....	660	.10	23	2
All other office machine operators .....	740	.11	n.a.	n.a.
Stenographer .....	1,190	.18	20	4
Accounting clerk .....	10,320	1.55	10	20
Bookkeeper, hand .....	3,570	.53	11	16
Cashier .....	90	.01	50	1
File clerk .....	3,410	.51	19	6
General office clerk .....	14,510	2.17	7	33
Mail clerk .....	910	.14	17	4
Order clerk .....	330	.05	27	2
Payroll and/or timekeeping clerk .....	3,290	.49	15	16
Personnel clerk .....	2,160	.32	19	7
Receptionist .....	3,450	.52	9	19
Secretary .....	22,520	3.37	6	40
Statistical clerk .....	730	.11	44	1
Switchboard operator .....	720	.11	17	4
Switchboard operator/receptionist .....	800	.12	15	7
Typist .....	4,310	.65	13	12
Clerical supervisor, office or plant .....	2,550	.38	13	8
All other office clerical workers .....	3,320	.50	n.a.	n.a.

See footnotes at end of table.



**Table 8. Oil and gas extraction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 13)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers, total .....	5,420	0.81	n.a.	n.a.
Production clerk and/or coordinator .....	1,380	.21	24	4
Shipping and/or receiving clerk .....	470	.07	19	2
Stock clerk, stockroom, warehouse or storage yard .....	1,350	.20	14	6
Dispatcher, vehicle, service or work .....	1,700	.25	14	6
All other plant clerical workers .....	520	.08	n.a.	n.a.
Sales occupations .....	5,080	.76	n.a.	n.a.
Sales agent, associate, and/or representative .....	5,040	.75	11	12
All other sales workers .....	40	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5. percent.

n.a. = not available.



# 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 1981, the construction industry employed approximately 4.2 million workers or 18 percent of the workers in the surveyed industries. More than half of these construction workers were engaged in special trade contracting, such as electrical work, masonry, and plumbing.

As shown in table 9, the largest occupational group in the construction industry consisted of 3.1 million maintenance, construction, repair, material handling, and powerplant workers, accounting for nearly three-fourths of industry employment. Special trade contracting employed 53 percent of the workers in this major group. Managers and officers, ranking second of the seven major groups, made up 11 percent of total employment in the construction industry. The third largest occupational group in construction was clerical workers, numbering 350,520 or 8 percent of total industry employment. Office clerical workers accounted for 96 percent of all clerical workers. The remaining 7 percent of occupational employment was distributed as follows: Professional workers, 4 percent; sales, technical, and service workers, each about 1 percent of total employment in construction.

## General building contractors

This industry includes establishments primarily engaged in the construction of residential, farm, industrial, commercial, or other buildings (SIC 15).

The industry employed nearly 1.1 million workers in 1981, or 26 percent of all workers employed in construction. Employing 48 percent of these workers were establishments engaged in the construction of single-family homes and other residential buildings; employing 46 percent were establishments constructing nonresidential buildings; and employing the remainder were operative builders.

As shown in table 10, the 751,660 maintenance, construction, repair, material handling, and powerplant workers in this industry accounted for more than two-thirds of total industry employment. Managers and officers ranked second with 14 percent. The third largest

group was clerical workers with 10 percent. The remaining 8 percent was distributed as follows: Professional workers, 4 percent; sales and service workers, each 2 percent; and technical workers, 1 percent.

The five most populous occupations, in order of predominance, are listed below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Carpenter .....	295,550	26.9
Carpenter helper .....	78,000	7.1
Secretary .....	32,940	3.0
Nonworking supervisor .....	23,660	2.2
Heavy equipment operator .....	22,800	2.1

## 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 1981, these establishments employed 934,770 workers or 22 percent of the total employed in construction. Most of these workers, 71 percent, were involved in heavy construction, other than highways and streets.

As shown in table 11, heavy construction contractors employed 709,630 maintenance, construction, repair, material handling, and powerplant workers, accounting for over three-fourths of total industry employment. Managers and officers, numbering 80,070, ranked second with 9 percent. The third largest occupational group consisted of 62,810 clerical workers with 7 percent of total employment. Professional workers made up 6 percent; technical workers, 2 percent; service workers, about 1 percent; and sales workers, only 0.3 percent.

The five largest occupations in this industry are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Heavy equipment operator .....	119,900	12.8
Truck driver .....	57,630	6.2
Carpenter .....	38,400	4.1
Pipelayer .....	29,160	3.1
Pipelayer .....	28,310	3.0



### Special trade 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 1981, this industry employed more than 2.2 million workers, constituting 52 percent of employment in the construction industry. Of these workers, plumbing, heating (other than electric), and air-conditioning employed 23 percent; electrical work, 19 percent; and miscellaneous special trade contractors, 18 percent.

As shown in table 12, over three-fourths of the industry's workers, approximately 1.7 million, were maintenance, construction, repair, material handling, and powerplant workers. Ranking second of the seven major occupational groups, managers and officers

made up 10 percent of total employment in special trade contracting. Clerical workers, the third largest group, accounted for 8 percent of industry employment. Ninety-two percent of these worked in office occupations. The remaining occupational employment was distributed as follows: Professional workers, 3 percent; sales workers, more than 1 percent; and technical and service workers, about 1 percent each.

The five most populous jobs in special trade contracting are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Electrician .....	223,650	10.2
Plumber or pipefitter .....	168,180	7.6
Maintenance painter .....	91,810	4.2
Carpenter .....	88,520	4.0
Sheet metal worker .....	83,750	3.8



**Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 15, 16, 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	4,235,330	100.00	--	--
Managers and officers .....	447,000	10.55	n.a.	n.a.
Professional occupations .....	171,230	4.04	n.a.	n.a.
Engineers, total .....	50,360	1.19	n.a.	n.a.
Civil engineer .....	17,430	.41	5	3
Electrical and electronic engineers .....	6,300	.15	9	1
Mechanical engineer .....	9,960	.24	7	2
Safety engineer .....	1,320	.03	9	1
All other engineers .....	15,350	.36	n.a.	n.a.
Systems analyst, electronic data processing .....	1,030	.02	10	( <sup>3</sup> )
Purchasing agent and/or buyer .....	9,260	.22	4	5
Accountants and auditors .....	26,100	.62	2	10
Cost estimator, engineering .....	74,060	1.75	2	24
Personnel and labor relations specialists .....	1,660	.04	6	1
All other professional workers .....	8,760	.21	n.a.	n.a.
Technical occupations .....	43,350	1.02	n.a.	n.a.
Computer programmer .....	1,510	.04	8	1
Engineering technicians, total .....	39,180	.93	n.a.	n.a.
Drafter .....	20,190	.48	6	5
Electrical and electronic technicians .....	10,440	.25	10	1
Surveyor .....	3,850	.09	8	1
Mechanical engineering technician .....	940	.02	21	( <sup>3</sup> )
Civil engineering technician .....	1,260	.03	15	( <sup>3</sup> )
All other engineering technicians .....	2,500	.06	n.a.	n.a.
All other technicians .....	2,660	.06	n.a.	n.a.
Service occupations .....	36,610	.86	n.a.	n.a.
Janitors, porters, and cleaners .....	28,420	.67	5	8
Guards and doorkeepers .....	3,740	.09	12	1
Food service workers .....	1,260	.03	31	( <sup>3</sup> )
Supervisor, nonworking-service only .....	740	.02	32	( <sup>3</sup> )
All other service workers .....	2,450	.06	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	3,135,510	74.03	n.a.	n.a.
Mechanics and repairers, total .....	116,750	2.76	n.a.	n.a.
Mechanic, automotive .....	16,770	.40	3	6
Diesel mechanic .....	8,540	.20	5	3
Engineering equipment mechanic .....	12,410	.29	5	3
Mechanic, maintenance .....	20,330	.48	6	4
Refrigeration mechanic and/or air conditioning mechanic .....	52,120	1.23	3	5
All other mechanics and repairers .....	6,580	.16	n.a.	n.a.
Truck driver .....	115,520	2.73	2	22
Air hammer operator .....	11,010	.26	7	2
Asbestos and insulation workers .....	38,310	.90	6	2
Asphalt heater tender .....	570	.01	13	( <sup>3</sup> )
Blaster, construction .....	910	.02	17	( <sup>3</sup> )
Boilermaker .....	15,830	.37	8	1
Bricklayer .....	69,790	1.65	3	6
Cabinetmaker .....	9,380	.22	9	1
Carpet cutter and/or carpet layer .....	14,400	.34	9	1
Carpenter .....	422,480	9.98	1	26
Cement mason .....	80,180	1.89	3	11
Concrete mixer operator .....	3,240	.08	11	1
Concrete wall grinder operator .....	890	.02	22	( <sup>3</sup> )
Concrete rubber .....	3,010	.07	13	1
Conduit mechanic .....	2,140	.05	25	( <sup>3</sup> )
Crane, derrick, and hoist operators .....	23,160	.55	4	4
Delivery and/or route worker .....	1,600	.04	13	1
Dredge operator .....	2,020	.05	23	( <sup>3</sup> )
Driller, hand .....	640	.02	23	( <sup>3</sup> )
Driller, machine .....	2,220	.05	15	( <sup>3</sup> )
Dry-wall applicator .....	42,250	1.00	5	3
Electrician .....	244,710	5.78	2	9
Fence erector .....	14,840	.35	10	1
Fine grader .....	1,470	.03	12	( <sup>3</sup> )

See footnotes at end of table.



**Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 15, 16, 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Fitter, pipelaying .....	7,040	0.17	18	( <sup>3</sup> )
Floor sanding machine operator .....	1,490	.04	25	( <sup>3</sup> )
Supervisor, nonworking .....	80,490	1.90	2	15
Form setter, metal road-form .....	5,610	.13	8	1
Form tamper operator and/or tamping-machine operator .....	680	.02	15	( <sup>3</sup> )
Furnace installer and repairer, hot air .....	13,160	.31	7	2
Glazier .....	17,760	.42	8	1
Heavy equipment operator .....	194,450	4.59	2	19
Rigger .....	6,700	.16	11	1
Industrial truck operator .....	3,700	.09	13	1
Inspector .....	2,950	.07	14	( <sup>3</sup> )
Lather .....	9,260	.22	9	1
Line installer-repairer .....	29,680	.70	8	1
Machinist .....	1,680	.04	23	( <sup>3</sup> )
Maintenance repairer, general utility .....	6,030	.14	12	1
Metal fabricator .....	18,450	.44	7	2
Millwright .....	18,350	.43	6	1
Oil burner installer and servicer .....	2,980	.07	14	( <sup>3</sup> )
Oiler .....	5,720	.14	5	2
Painter, maintenance .....	109,060	2.58	2	9
Paperhanger .....	6,440	.15	9	1
Pipelaying .....	30,800	.73	5	3
Plasterer .....	14,410	.34	8	1
Plumber and/or pipefitter .....	205,670	4.86	2	11
Reinforcing iron worker .....	34,990	.83	6	3
Roofer .....	64,380	1.52	2	5
Trench sewer shaper .....	880	.02	24	( <sup>3</sup> )
Sewer tapper .....	610	.01	48	( <sup>3</sup> )
Sheet metal worker .....	90,520	2.14	3	7
Stone mason .....	3,000	.07	17	( <sup>3</sup> )
Layout worker, structural steel .....	6,050	.14	11	1
Structural steel worker .....	44,710	1.06	5	3
Taper .....	21,050	.50	5	3
Tile setter .....	13,080	.31	8	1
Welder and/or flamecutter .....	44,020	1.04	5	5
Surveyor helper .....	2,120	.05	7	1
Asphalt mixing machine tender .....	1,260	.03	10	1
Asphalt plant drier operator .....	670	.02	14	( <sup>3</sup> )
Asphalt-plant operator .....	2,690	.06	7	1
Tester .....	790	.02	25	( <sup>3</sup> )
Asphalt raker .....	17,400	.41	5	3
Mixer, stone, clay, glass and related products .....	1,200	.03	31	( <sup>3</sup> )
Ceiling tile installer and/or floor layer .....	15,830	.37	8	1
Terrazzo worker .....	1,200	.03	25	( <sup>3</sup> )
Asbestos and insulation worker helper .....	4,870	.11	12	1
Bricklayer helper .....	41,570	.98	4	4
Carpenter helper .....	102,680	2.42	3	11
Cement mason helper .....	36,910	.87	4	5
Electrician helper .....	41,590	.98	4	3
Painter helper .....	12,660	.30	6	2
Plasterer helper .....	6,180	.15	10	1
Plumber and/or pipefitter helper .....	43,650	1.03	5	5
Roofer helper .....	19,900	.47	5	3
Stone mason helper .....	1,920	.05	19	( <sup>3</sup> )
Tile setter helper .....	7,410	.17	10	1
Cabinetmaker helper .....	2,040	.05	17	( <sup>3</sup> )
Terrazzo worker helper .....	870	.02	29	( <sup>3</sup> )
All other helpers, skilled trades .....	25,320	.60	n.a.	n.a.
All other skilled craft and kindred workers .....	28,450	.67	n.a.	n.a.
All other operatives and semiskilled workers .....	50,140	1.18	n.a.	n.a.
All other laborers and unskilled workers .....	313,020	7.39	n.a.	n.a.
Clerical occupations .....	350,520	8.28	n.a.	n.a.
Office clerical workers, total .....	328,570	7.76	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	2,360	.06	6	1
Computer operator .....	2,150	.05	5	1

See footnotes at end of table.

**Table 9. Construction: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 15, 16, 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Office clerical workers,—Continued</b>				
Keypunch operator .....	1,330	0.03	7	1
All other office machine operators .....	630	.01	n.a.	n.a.
Stenographer .....	770	.02	13	( <sup>3</sup> )
Accounting clerk .....	17,730	.42	3	7
Bookkeeper, hand .....	55,060	1.30	2	23
File clerk .....	2,680	.06	12	1
General office clerk .....	84,610	2.00	2	25
Mail clerk .....	620	.01	11	( <sup>3</sup> )
Order clerk .....	520	.01	16	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	30,310	.72	2	15
Personnel clerk .....	970	.02	8	1
Procurement clerk .....	710	.02	16	( <sup>3</sup> )
Receptionist .....	2,270	.05	7	1
Secretary .....	97,710	2.31	1	32
Switchboard operator .....	870	.02	12	( <sup>3</sup> )
Switchboard operator/receptionist .....	1,830	.04	5	2
Typist .....	18,020	.43	3	7
Clerical supervisor, office or plant .....	2,350	.06	10	1
All other office clerical workers .....	5,070	.12	n.a.	n.a.
<b>Plant clerical workers, total</b> .....	<b>21,950</b>	<b>.52</b>	<b>n.a.</b>	<b>n.a.</b>
Production clerk and/or coordinator .....	1,330	.03	12	( <sup>3</sup> )
Shipping and/or receiving clerk .....	1,110	.03	10	( <sup>3</sup> )
Stock clerk, stockroom, warehouse or storage yard .....	17,070	.40	3	7
Dispatcher, vehicle, service or work .....	1,420	.03	9	1
All other plant clerical workers .....	1,020	.02	n.a.	n.a.
<b>Sales occupations</b> .....	<b>51,110</b>	<b>1.21</b>	<b>n.a.</b>	<b>n.a.</b>
Sales agent, sales associate, and/or sales representative, real estate .....	19,050	.45	6	3
All other sales agents, associates, and/or representatives .....	30,180	.71	n.a.	n.a.
Sales clerk .....	1,880	.04	20	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.



**Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 15)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,098,640	100.00	--	--
Managers and officers .....	154,140	14.03	n.a.	n.a.
Professional occupations .....	45,390	4.13	n.a.	n.a.
Engineers, total .....	11,010	1.00	n.a.	n.a.
Civil engineer .....	5,860	.53	7	5
Electrical and electronic engineers .....	740	.07	17	1
Mechanical engineer .....	2,020	.18	14	1
Safety engineer .....	310	.03	11	1
All other engineers .....	2,080	.19	n.a.	n.a.
Systems analyst, electronic data processing .....	360	.03	12	1
Purchasing agent and/or buyer .....	1,630	.15	8	4
Accountants and auditors .....	8,460	.77	5	13
Cost estimator, engineering .....	21,080	1.92	4	26
Personnel and labor relations specialists .....	560	.05	9	1
All other professional workers .....	2,290	.21	n.a.	n.a.
Technical occupations .....	8,550	.78	n.a.	n.a.
Computer programmer .....	590	.05	10	2
Engineering technicians, total .....	7,640	.70	n.a.	n.a.
Drafter .....	5,800	.53	7	7
Surveyor .....	670	.06	15	1
Mechanical engineering technician .....	220	.02	30	( <sup>3</sup> )
Civil engineering technician .....	420	.04	-18	( <sup>3</sup> )
All other engineering technicians .....	530	.05	n.a.	n.a.
All other technicians .....	320	.03	n.a.	n.a.
Service occupations .....	16,860	1.53	n.a.	n.a.
Janitors, porters, and cleaners .....	12,970	1.18	9	10
Guards and doorkeepers .....	1,300	.12	20	1
Food service workers .....	740	.07	37	( <sup>3</sup> )
Supervisor, nonworking-service only .....	140	.01	31	( <sup>3</sup> )
All other service workers .....	1,710	.16	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	751,660	68.42	n.a.	n.a.
Mechanics and repairers, total .....	4,290	.39	n.a.	n.a.
Mechanic, automotive .....	1,420	.13	10	3
Diesel mechanic .....	290	.03	35	1
Engineering equipment mechanic .....	610	.06	16	1
Mechanic, maintenance .....	840	.08	21	1
Refrigeration mechanic and/or air conditioning mechanic .....	620	.06	33	1
All other mechanics and repairers .....	510	.05	n.a.	n.a.
Truck driver .....	14,490	1.32	5	17
Air hammer operator .....	840	.08	21	1
Asbestos and insulation workers .....	1,580	.14	23	1
Boilermaker .....	2,800	.25	18	1
Bricklayer .....	16,530	1.50	7	9
Blueprinting machine operator .....	110	.01	18	( <sup>3</sup> )
Cabinetmaker .....	6,010	.55	12	4
Carpenter .....	295,550	26.90	2	75
Cement mason .....	25,410	2.31	5	17
Concrete mixer operator .....	190	.02	36	( <sup>3</sup> )
Concrete rubber .....	410	.04	26	1
Crane, derrick, and hoist operators .....	3,020	.27	9	4
Delivery and/or route worker .....	290	.03	35	1
Dry-wall applicator .....	4,500	.41	13	2
Electrician .....	7,270	.66	9	4
Fine grader .....	170	.02	37	( <sup>3</sup> )
Fitter, pipelaying .....	2,370	.22	29	( <sup>3</sup> )
Supervisor, nonworking .....	23,660	2.15	4	17
Form setter, metal road-form .....	220	.02	32	( <sup>3</sup> )
Heavy equipment operator .....	22,800	2.08	6	16
Rigger .....	340	.03	23	( <sup>3</sup> )
Industrial truck operator .....	680	.06	13	1
Inspector .....	900	.08	24	1

See footnotes at end of table.

**Table 10. General building contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 15)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Lather .....	320	0.03	49	( <sup>3</sup> )
Machinist .....	160	.01	30	( <sup>3</sup> )
Maintenance repairer, general utility .....	3,100	.28	18	2
Metal fabricator .....	7,680	.70	11	2
Millwright .....	6,210	.57	10	2
Oiler .....	550	.05	13	1
Painter, maintenance .....	14,610	1.33	7	10
Pipelayer .....	1,330	.12	24	( <sup>3</sup> )
Plasterer .....	560	.05	32	( <sup>3</sup> )
Plumber and/or pipefitter .....	10,960	1.00	9	4
Reinforcing iron worker .....	10,000	.91	7	6
Roofer .....	3,120	.28	19	2
Sheet metal worker .....	6,140	.56	15	2
Stone mason .....	290	.03	37	( <sup>3</sup> )
Layout worker, structural steel .....	1,270	.12	21	1
Structural steel worker .....	9,580	.87	10	3
Taper .....	1,360	.12	18	2
Tile setter .....	180	.02	43	( <sup>3</sup> )
Welder and/or flamecutter .....	6,340	.58	9	3
Surveyor helper .....	420	.04	14	1
Ceiling tile installer and/or floor layer .....	320	.03	36	( <sup>3</sup> )
Asbestos and insulation worker helper .....	350	.03	28	( <sup>3</sup> )
Bricklayer helper .....	7,280	.66	10	5
Carpenter helper .....	78,000	7.10	3	35
Cement mason helper .....	9,860	.90	9	6
Electrician helper .....	1,540	.14	15	1
Painter helper .....	2,520	.23	17	2
Plasterer helper .....	200	.02	47	( <sup>3</sup> )
Plumber and/or pipefitter helper .....	2,090	.19	15	1
Roofer helper .....	950	.09	44	1
Cabinetmaker helper .....	1,120	.10	22	1
All other helpers, skilled trades .....	5,600	.51	n.a.	n.a.
All other skilled craft and kindred workers .....	6,040	.55	n.a.	n.a.
All other operatives and semiskilled workers .....	8,860	.81	n.a.	n.a.
All other laborers and unskilled workers .....	108,320	9.86	n.a.	n.a.
Clerical occupations .....	104,600	9.52	n.a.	n.a.
Office clerical workers, total .....	102,700	9.35	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	310	.03	17	1
Computer operator .....	800	.07	8	3
Keypunch operator .....	430	.04	8	1
All other office machine operators .....	170	.02	n.a.	n.a.
Stenographer .....	470	.04	17	1
Accounting clerk .....	6,110	.56	6	10
Bookkeeper, hand .....	18,840	1.71	4	26
File clerk .....	720	.07	9	2
General office clerk .....	21,960	2.00	4	23
Mail clerk .....	330	.03	15	1
Order clerk .....	160	.01	21	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	8,340	.76	5	15
Personnel clerk .....	360	.03	11	1
Procurement clerk .....	220	.02	13	1
Receptionist .....	1,320	.12	10	3
Secretary .....	32,940	3.00	3	35
Switchboard operator .....	400	.04	19	1
Switchboard operator/receptionist .....	960	.09	8	4
Typist .....	4,990	.45	8	7
Clerical supervisor, office or plant .....	1,060	.10	11	2
All other office clerical workers .....	1,810	.16	n.a.	n.a.
Plant clerical workers, total .....	1,900	.17	n.a.	n.a.
Production clerk and/or coordinator .....	390	.04	26	1
Shipping and/or receiving clerk .....	140	.01	28	1
Stock clerk, stockroom, warehouse or storage yard .....	1,120	.10	12	2
Dispatcher, vehicle, service or work .....	140	.01	22	1
All other plant clerical workers .....	110	.01	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 1981—Continued**

(SIC 15)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Sales occupations .....	17,440	1.59	n.a.	n.a.
Sales agent, sales associate, and/or sales representative, real estate .....	14,160	1.29	7	8
All other sales agents, associates, and/or representatives .....	2,460	.22	n.a.	n.a.
Sales clerk .....	820	.07	31	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

**Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 16)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	934,770	100.00	--	--
Managers and officers .....	80,070	8.57	n.a.	n.a.
Professional occupations .....	58,330	6.24	n.a.	n.a.
Engineers, total .....	28,910	3.09	n.a.	n.a.
Civil engineer .....	9,760	1.04	8	15
Electrical and electronic engineers .....	2,150	.23	18	2
Mechanical engineer .....	3,240	.35	15	2
Safety engineer .....	930	.10	7	5
Nuclear engineer .....	400	.04	46	( <sup>3</sup> )
All other engineers .....	12,430	1.33	n.a.	n.a.
Natural and mathematical scientists .....	200	.02	48	( <sup>3</sup> )
Systems analyst, electronic data processing .....	620	.07	14	2
Purchasing agent and/or buyer .....	3,210	.34	8	10
Accountants and auditors .....	6,300	.67	5	19
Cost estimator, engineering .....	12,320	1.32	4	33
Personnel and labor relations specialists .....	1,040	.11	8	4
All other professional workers .....	5,730	.61	n.a.	n.a.
Technical occupations .....	15,590	1.67	n.a.	n.a.
Computer programmer .....	780	.08	12	3
Engineering technicians, total .....	13,230	1.42	n.a.	n.a.
Drafter .....	6,730	.72	17	4
Electrical and electronic technicians .....	770	.08	28	1
Surveyor .....	2,820	.30	9	7
Mechanical engineering technician .....	670	.07	26	1
Civil engineering technician .....	830	.09	21	2
All other engineering technicians .....	1,410	.15	n.a.	n.a.
All other technicians .....	1,580	.17	n.a.	n.a.
Service occupations .....	5,740	.61	n.a.	n.a.
Janitors, porters, and cleaners .....	2,800	.30	7	10
Guards and doorkeepers .....	1,410	.15	14	3
Food service workers .....	490	.05	n.a.	n.a.
Supervisor, nonworking-service only .....	560	.06	41	1
All other service workers .....	480	.05	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	709,630	75.91	n.a.	n.a.
Mechanics and repairers, total .....	32,410	3.47	n.a.	n.a.
Mechanic, automotive .....	10,670	1.14	4	26
Diesel mechanic .....	6,740	.72	5	16
Engineering equipment mechanic .....	8,860	.95	5	19
Mechanic, maintenance .....	4,900	.52	11	9
All other mechanics and repairers .....	1,240	.13	n.a.	n.a.
Truck driver .....	57,630	6.17	2	58
Air hammer operator .....	8,410	.90	9	10
Asbestos and insulation workers .....	1,390	.15	18	1
Asphalt heater tender .....	490	.05	13	2
Blaster, construction .....	670	.07	20	2
Boilermaker .....	5,010	.54	15	2
Bricklayer .....	1,100	.12	17	2
Blueprinting machine operator .....	210	.02	15	1
Carpenter .....	38,400	4.11	5	23
Cement mason .....	16,360	1.75	4	22
Concrete mixer operator .....	910	.10	17	2
Concrete wall grinder operator .....	320	.03	21	1
Concrete rubber .....	900	.10	16	1
Conduit mechanic .....	2,110	.23	25	1
Crane, derrick, and hoist operators .....	12,970	1.39	6	19
Delivery and/or route worker .....	580	.06	14	1
Dredge operator .....	2,000	.21	23	1
Driller, hand .....	470	.05	28	1
Driller, machine .....	550	.06	33	1
Electrician .....	13,790	1.48	18	4
Fence erector .....	460	.05	38	1
Fine grader .....	1,210	.13	12	3

See footnotes at end of table.



**Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 16)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Fitter, pipelaying .....	4,360	0.47	24	1
Supervisor, nonworking .....	29,160	3.12	4	32
Form setter, metal road-form .....	1,730	.19	11	3
Form tamper operator and/or tamping-machine operator .....	590	.06	16	1
Heavy equipment operator .....	119,900	12.83	2	72
Rigger .....	3,010	.32	16	2
Industrial truck operator .....	2,620	.28	17	3
Inspector .....	1,510	.16	20	1
Line installer-repairer .....	18,670	2.00	12	4
Machinist .....	1,000	.11	34	1
Maintenance repairer, general utility .....	1,820	.19	14	4
Metal fabricator .....	1,000	.11	24	1
Millwright .....	3,680	.39	11	3
Oiler .....	4,810	.51	6	11
Painter, maintenance .....	2,640	.28	14	3
Pipelayer .....	28,310	3.03	6	22
Plumber and/or pipefitter .....	26,530	2.84	11	5
Reinforcing iron worker .....	9,420	1.01	12	5
Trench sewer shaper .....	820	.09	25	1
Sheet metal worker .....	620	.07	26	1
Stationary engineer .....	120	.01	45	( <sup>3</sup> )
Layout worker, structural steel .....	1,380	.15	29	1
Structural steel worker .....	6,800	.73	12	2
Welder and/or flamecutter .....	20,350	2.18	8	15
Surveyor helper .....	1,660	.18	9	4
Asphalt mixing machine tender .....	1,150	.12	10	4
Asphalt plant drier operator .....	580	.06	14	2
Asphalt-plant operator .....	2,470	.26	7	9
Tester .....	540	.06	26	1
Asphalt raker .....	13,120	1.40	5	16
Mixer, stone, clay, glass and related products .....	120	.01	28	( <sup>3</sup> )
Asbestos and insulation worker helper .....	260	.03	37	( <sup>3</sup> )
Bricklayer helper .....	300	.03	34	1
Carpenter helper .....	6,900	.74	8	7
Cement mason helper .....	6,490	.69	8	8
Electrician helper .....	3,100	.33	17	1
Painter helper .....	590	.06	19	1
Plumber and/or pipefitter helper .....	6,100	.65	29	2
All other helpers, skilled trades .....	9,760	1.04	n.a.	n.a.
All other skilled craft and kindred workers .....	10,220	1.09	n.a.	n.a.
All other operatives and semiskilled workers .....	19,560	2.09	n.a.	n.a.
All other laborers and unskilled workers .....	137,510	14.71	n.a.	n.a.
Clerical occupations .....	62,810	6.72	n.a.	n.a.
Office clerical workers, total .....	57,870	6.19	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	340	.04	13	2
Computer operator .....	1,110	.12	7	6
Keypunch operator .....	770	.08	10	3
Peripheral EDP equipment operator .....	120	.01	32	( <sup>3</sup> )
Duplicating machine operator .....	230	.02	16	1
Stenographer .....	290	.03	20	1
Accounting clerk .....	3,930	.42	6	12
Bookkeeper, hand .....	5,730	.61	4	22
File clerk .....	1,920	.21	17	3
General office clerk .....	13,220	1.41	8	28
Mail clerk .....	260	.03	14	1
Order clerk .....	200	.02	23	1
Payroll and/or timekeeping clerk .....	7,330	.78	4	29
Personnel clerk .....	580	.06	11	3
Procurement clerk .....	460	.05	24	2
Receptionist .....	760	.08	7	5
Secretary .....	13,260	1.42	4	35
Switchboard operator .....	370	.04	11	2
Switchboard operator/receptionist .....	790	.08	7	6

See footnotes at end of table.

**Table 11. Heavy construction contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 16)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Office clerical workers,—Continued</b>				
Typist .....	3,410	0.36	7	8
Clerical supervisor, office or plant .....	1,190	.13	17	4
All other office clerical workers .....	1,600	.17	n.a.	n.a.
<b>Plant clerical workers, total .....</b>	<b>4,940</b>	<b>.53</b>	<b>n.a.</b>	<b>n.a.</b>
Production clerk and/or coordinator .....	690	.07	16	2
Shipping and/or receiving clerk .....	640	.07	13	2
Weigher, recordkeeping .....	370	.04	11	2
Stock clerk, stockroom, warehouse or storage yard .....	2,240	.24	9	5
Dispatcher, vehicle, service or work .....	720	.08	8	4
All other plant clerical workers .....	280	.03	n.a.	n.a.
<b>Sales occupations .....</b>	<b>2,600</b>	<b>.28</b>	<b>n.a.</b>	<b>n.a.</b>
Sales agent, sales associate, and/or sales representative, real estate .....	610	.07	21	2
All other sales agents, associates, and/or representatives .....	1,900	.20	n.a.	n.a.
All other sales workers .....	90	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.



**Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,201,820	100.00	--	--
Managers and officers .....	212,800	9.66	n.a.	n.a.
Professional occupations .....	67,490	3.07	n.a.	n.a.
Engineers, total .....	10,430	.47	n.a.	n.a.
Civil engineer .....	1,810	.08	10	1
Electrical and electronic engineers .....	3,420	.16	13	1
Mechanical engineer .....	4,690	.21	7	2
All other engineers .....	510	.02	n.a.	n.a.
Purchasing agent and/or buyer .....	4,420	.20	5	4
Accountants and auditors .....	11,340	.52	4	8
Cost estimator, engineering .....	40,660	1.85	2	22
All other professional workers .....	640	.03	n.a.	n.a.
Technical occupations .....	19,200	.87	n.a.	n.a.
Engineering technicians, total .....	18,310	.83	n.a.	n.a.
Drafter .....	7,660	.35	5	4
Electrical and electronic technicians .....	9,590	.44	11	1
Surveyor .....	360	.02	44	( <sup>3</sup> )
All other engineering technicians .....	700	.03	n.a.	n.a.
All other technicians .....	890	.04	n.a.	n.a.
Service occupations .....	14,010	.64	n.a.	n.a.
Janitors, porters, and cleaners .....	12,660	.57	5	7
Guards and doorkeepers .....	1,030	.05	29	( <sup>3</sup> )
All other service workers .....	320	.01	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	1,674,100	76.03	n.a.	n.a.
Mechanics and repairers, total .....	80,040	3.64	n.a.	n.a.
Mechanic, automotive .....	4,680	.21	6	3
Diesel mechanic .....	1,510	.07	11	1
Engineering equipment mechanic .....	2,940	.13	15	1
Mechanic, maintenance .....	14,590	.66	7	5
Refrigeration mechanic and/or air conditioning mechanic .....	51,420	2.34	3	7
All other mechanics and repairers .....	4,900	.22	n.a.	n.a.
Truck driver .....	43,400	1.97	3	18
Air hammer operator .....	1,760	.08	20	( <sup>3</sup> )
Asbestos and insulation workers .....	35,340	1.61	6	3
Boilermaker .....	8,020	.36	10	1
Bricklayer .....	52,160	2.37	4	6
Cabinetmaker .....	3,360	.15	15	( <sup>3</sup> )
Carpet cutter and/or carpet layer .....	14,220	.65	9	2
Carpenter .....	88,520	4.02	3	11
Cement mason .....	38,400	1.74	4	8
Concrete mixer operator .....	2,150	.10	15	1
Concrete wall grinder operator .....	510	.02	36	( <sup>3</sup> )
Concrete rubber .....	1,700	.08	20	( <sup>3</sup> )
Crane, derrick, and hoist operators .....	7,170	.33	7	2
Delivery and/or route worker .....	730	.03	21	( <sup>3</sup> )
Driller, machine .....	1,630	.07	17	( <sup>3</sup> )
Dry-wall applicator .....	37,720	1.71	5	3
Electrician .....	223,650	10.16	1	12
Fence erector .....	14,380	.65	10	1
Fitter, pipelaying .....	300	.01	46	( <sup>3</sup> )
Floor sanding machine operator .....	1,450	.07	25	( <sup>3</sup> )
Supervisor, nonworking .....	27,670	1.26	3	12
Form setter, metal road-form .....	3,660	.17	11	1
Furnace installer and repairer, hot air .....	13,090	.59	7	3
Glazier .....	17,180	.78	8	2
Heavy equipment operator .....	51,750	2.35	3	11
Rigger .....	3,350	.15	17	1
Industrial truck operator .....	410	.02	29	( <sup>3</sup> )
Inspector .....	540	.02	27	( <sup>3</sup> )
Lather .....	8,860	.40	10	1
Line installer-repairer .....	10,950	.50	10	1

See footnotes at end of table.

**Table 12. Special trade contractors: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Machinist .....	520	0.02	34	( <sup>3</sup> )
Maintenance repairer, general utility .....	1,110	.05	28	( <sup>3</sup> )
Metal fabricator .....	9,770	.44	9	2
Millwright .....	8,460	.38	11	1
Oil burner installer and servicer .....	2,970	.13	14	1
Oiler .....	370	.02	24	( <sup>3</sup> )
Painter, maintenance .....	91,810	4.17	2	10
Paperhanger .....	6,360	.29	9	2
Pipelayer .....	1,160	.05	27	( <sup>3</sup> )
Plasterer .....	13,800	.63	8	2
Plumber and/or pipefitter .....	168,180	7.64	2	14
Reinforcing iron worker .....	15,570	.71	9	1
Roofer .....	61,100	2.77	2	7
Sheet metal worker .....	83,750	3.80	3	10
Stone mason .....	2,640	.12	19	1
Layout worker, structural steel .....	3,400	.15	14	1
Structural steel worker .....	28,330	1.29	6	2
Taper .....	19,690	.89	6	3
Tile setter .....	12,890	.59	8	2
Welder and/or flamecutter .....	17,330	.79	6	4
Asphalt raker .....	4,090	.19	11	1
Mixer, stone, clay, glass and related products .....	1,070	.05	35	( <sup>3</sup> )
Ceiling tile installer and/or floor layer .....	15,490	.70	8	2
Terrazzo worker .....	1,180	.05	25	( <sup>3</sup> )
Asbestos and insulation worker helper .....	4,270	.19	13	1
Bricklayer helper .....	33,990	1.54	5	5
Carpenter helper .....	17,780	.81	6	4
Cement mason helper .....	20,560	.93	6	4
Electrician helper .....	36,940	1.68	4	4
Painter helper .....	9,550	.43	7	3
Paperhanger helper .....	320	.01	34	( <sup>3</sup> )
Plasterer helper .....	5,980	.27	10	1
Plumber and/or pipefitter helper .....	35,460	1.61	4	6
Roofer helper .....	18,910	.86	4	4
Stone mason helper .....	1,890	.09	19	( <sup>3</sup> )
Tile setter helper .....	7,370	.33	10	1
Cabinetmaker helper .....	910	.04	25	( <sup>3</sup> )
Terrazzo worker helper .....	870	.04	29	( <sup>3</sup> )
All other helpers, skilled trades .....	9,740	.44	n.a.	n.a.
All other skilled craft and kindred workers .....	13,620	.62	n.a.	n.a.
All other operatives and semiskilled workers .....	23,320	1.06	n.a.	n.a.
All other laborers and unskilled workers .....	67,510	3.07	n.a.	n.a.
Clerical occupations .....	183,140	8.32	n.a.	n.a.
Office clerical workers, total .....	168,030	7.63	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	1,710	.08	8	1
Computer operator .....	240	.01	19	( <sup>3</sup> )
Accounting clerk .....	7,690	.35	4	5
Bookkeeper, hand .....	30,490	1.38	2	22
Cashier .....	280	.01	39	( <sup>3</sup> )
General office clerk .....	49,430	2.24	2	25
Payroll and/or timekeeping clerk .....	14,640	.66	3	13
Secretary .....	51,510	2.34	2	31
Typist .....	9,620	.44	4	7
All other office clerical workers .....	2,420	.11	n.a.	n.a.
Plant clerical workers, total .....	15,110	.69	n.a.	n.a.
Production clerk and/or coordinator .....	260	.01	27	( <sup>3</sup> )
Shipping and/or receiving clerk .....	330	.01	20	( <sup>3</sup> )
Stock clerk, stockroom, warehouse or storage yard .....	13,710	.62	4	8
Dispatcher, vehicle, service or work .....	550	.02	19	( <sup>3</sup> )
All other plant clerical workers .....	260	.01	n.a.	n.a.
Sales occupations .....	31,080	1.41	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 1981—Continued**

(SIC 17)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Sales occupations—Continued				
Sales agent, sales associate, and/or sales representative, real estate .....	4,280	0.19	9	1
All other sales agents, associates, and/or representatives .....	25,830	1.17	n.a.	n.a.
Sales clerk .....	970	.04	27	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

# Finance, Insurance, and Real Estate

In 1981, finance, insurance, and real estate employed approximately 5.3 million workers or 22 percent of all workers in the industries surveyed. The insurance and real estate industry, with 2.7 million workers, accounted for more than half of total employment in this industry division. Banking institutions and credit agencies accounted for 42 percent; security and commodity brokers and investment services made up the remaining 7 percent.

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 engaging in deposit banking and other closely related functions or extending credit in the form of loans.

In 1981, these establishments employed 2.2 million workers, accounting for 9 percent of surveyed employment. Banking institutions made up 73 percent of employment in this industry group. Most of these workers were employed in commercial and stock savings banks. Credit agencies other than banks employed the remaining 27 percent.

As shown in table 13, banking institutions employed nearly 1.2 million clerical workers in 1981, or 72 percent of the workers in this industry group. Managers and officers ranked second with 18 percent. The remaining occupational employment in banking institutions was distributed as follows: Professional workers, 6 percent; service workers, 2 percent; and sales workers, technical workers, and maintenance, construction, repair, material handling, and powerplant workers, about 1 percent each.

The five largest occupations in banks are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Teller.....	364,870	22.6
General office clerk.....	120,060	7.4
Secretary.....	77,740	4.8
Clerical supervisor.....	63,900	4.0
Proof machine operator.....	46,030	2.9

Clerical workers also were predominant in credit agencies other than banks, accounting for two-thirds of total employment in this industry (table 14). The remaining occupational employment was distributed as

follows: Managers and officers, 21 percent; professionals, 8 percent; sales and service workers, each 2 percent; and technical workers and maintenance, construction, repair, material handling, and powerplant workers, 1 percent each.

The tabulation below lists the five most populous occupations in credit agencies, excluding banks:

	<i>Employment</i>	<i>Percent of industry employment</i>
Teller.....	98,420	16.8
General office clerk.....	35,600	6.1
Credit clerk.....	30,010	5.1
Collector.....	26,870	4.6
Secretary.....	23,020	3.9

## 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; exchange of securities and commodities; and investment trusts, including investment, holding, and commodity trading companies.

In 1981, security and commodity brokers and services employed 261,350 or 69 percent of the workers in this industry group. Holding and other investment offices accounted for the remaining employment, with 120,360 workers.

Clerical workers, the largest occupational group in this industry, accounted for 48 percent of total employment in security and commodity brokers and 36 percent of employment in holding and other investment offices. Other occupational groups with large numbers of workers in these industries were sales workers (26 percent) and managers and officers (13 percent) in security and commodity brokers and services; and managers and officers (28 percent) and professionals (19 percent) in holding and other investment offices.

As shown in table 15, the five most populous occupations in security and commodity brokers and services are listed below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Securities sales agent.....	56,020	21.4
Secretary.....	26,340	10.1
Brokerage clerk.....	14,860	5.7
General office clerk.....	13,680	5.2
Broker's floor representative, securities trader, or securities specialist.....	9,460	3.6



As shown in table 16, the five largest occupations in holding and other investment offices are listed below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Secretary.....	14,070	11.7
Accountant or auditor .....	8,130	6.8
General office clerk .....	7,070	5.9
Accounting clerk .....	3,900	3.2
Janitors, porters, and cleaners ....	2,500	2.1

### 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 1981, these establishments employed 2.7 million workers or 11 percent of the workers covered by the survey. Insurance carriers accounted for 45 percent of the employment in this industry group. Forty-four percent of these workers were employed in establishments underwriting life insurance. The real estate industry employed 37 percent of the workers in this industry group. The remaining employment was distributed as follows: Insurance agents, brokers, and services, 17 percent; and combined real estate, insurance, loan, and law offices, 1 percent.

As shown in table 17, clerical workers, numbering 665,520, accounted for 54 percent of total employment in insurance carriers. Other occupational groups with large numbers of these workers were sales workers and professionals, each with 15 percent of insurance carrier employment.

The five most populous occupations in insurance carriers, together accounting for about one-third of total industry employment, are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Insurance sales agent, associate, or representative .....	176,270	14.3
General office clerk .....	92,520	7.5
Secretary.....	54,450	4.4
Typist .....	51,880	4.2
Claim examiner—life, accident, and health insurance .....	41,440	3.4

Clerical workers also accounted for more than half—53 percent—of total employment in insurance agents, brokers, and services (table 18). Managers and officers, the second largest occupational group, ac-

counted for 20 percent. The remaining employment was distributed as follows: Sales workers, 13 percent; professionals, 12 percent; service workers, about 1 percent; and technical workers and maintenance, construction, repair, material handling, and powerplant workers, less than 1 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Insurance sales agent, associate, or representative .....	58,780	12.7
General office clerk .....	42,620	9.2
Secretary.....	34,250	7.4
Underwriter .....	24,060	5.2
Rater .....	19,180	4.1

The largest occupational group in real estate was service workers with 239,540 or 24 percent of total industry employment (table 19). Large numbers of real estate workers were also found in maintenance, construction, repair, material handling, and powerplant occupations, 22 percent; and in clerical occupations, 19 percent.

The five most populous occupations in real estate, accounting for one-third of employment, are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Real estate sales agent, associate, or representative .....	90,490	9.1
Maintenance repairer, general utility .....	86,450	8.7
Gardeners and groundskeepers ...	64,950	6.5
Secretary.....	46,990	4.7
Guards and doorkeepers.....	41,940	4.2

In combined real estate, insurance, loan, and law offices, clerical workers made up the largest occupational group, with 38 percent of industry employment (table 20). Sales workers and managers and officers each accounted for 23 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
General office clerk .....	2,060	10.7
Secretary.....	1,810	9.4
Real estate sales agent, associate, or representative .....	1,740	9.0
Insurance sales agent, associate, or representative .....	1,360	7.0
Underwriter .....	1,010	5.2



**Table 13. Banking: Employment, relative error, and percent of establishments reporting selected occupations, May 1961**

(SIC 60)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,617,870	100.00	--	--
Managers and officers .....	297,230	18.37	n.a.	n.a.
Professional occupations .....	89,250	5.52	n.a.	n.a.
Engineers .....	380	.02	38	2
Financial analyst .....	3,370	.21	10	9
Economist .....	670	.04	11	2
Systems analyst, electronic data processing .....	9,380	.58	16	13
Purchasing agent and/or buyer .....	1,720	.11	6	16
Accountants and auditors .....	18,380	1.14	6	40
Budget analyst .....	1,630	.10	10	9
Credit analyst, chief .....	3,910	.24	9	17
Credit analyst .....	8,590	.53	8	23
Lawyer .....	1,260	.08	12	6
Personnel and labor relations specialists .....	5,510	.34	7	23
Public relations practitioner .....	3,770	.23	8	19
Appraiser, real estate .....	2,840	.18	10	10
Travel agent and/or travel accommodations appraiser .....	370	.02	40	1
All other professional workers .....	27,470	1.70	n.a.	n.a.
Technical occupations .....	12,240	.76	n.a.	n.a.
Computer programmer .....	9,940	.61	9	17
Engineering technicians .....	450	.03	32	1
Mathematical technician .....	230	.01	37	1
All other technicians .....	1,620	.10	n.a.	n.a.
Service occupations .....	39,650	2.45	n.a.	n.a.
Janitors, porters, and cleaners .....	23,920	1.48	4	46
Guards and doorkeepers .....	10,750	.66	6	17
Food service workers .....	3,090	.19	10	8
Supervisor, nonworking-service only .....	1,010	.06	9	6
All other service workers .....	880	.05	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	8,670	.54	n.a.	n.a.
Mechanics and repairers, total .....	1,190	.07	n.a.	n.a.
Mechanic, maintenance .....	280	.02	17	1
All other mechanics and repairers .....	910	.06	n.a.	n.a.
Carpenter .....	190	.01	13	2
Delivery and/or route worker .....	600	.04	18	2
Electrician .....	190	.01	14	1
Supervisor, nonworking .....	720	.04	12	6
Maintenance repairer, general utility .....	1,860	.11	8	8
Helper, trades .....	200	.01	15	1
Painter, maintenance .....	220	.01	11	2
Parking-lot attendant .....	1,080	.07	13	5
Stationary engineer .....	360	.02	14	1
Chauffeur .....	610	.04	27	2
All other skilled craft and kindred workers .....	400	.02	n.a.	n.a.
All other operatives and semiskilled workers .....	530	.03	n.a.	n.a.
All other laborers and unskilled workers .....	520	.03	n.a.	n.a.
Clerical occupations .....	1,157,520	71.55	n.a.	n.a.
Office clerical workers, total .....	1,148,490	70.99	n.a.	n.a.
Addressing machine operator .....	630	.04	13	4
Bookkeeping and/or billing machine operator ..	9,390	.58	9	16
Computer operator .....	15,520	.96	5	29
Keypunch operator .....	14,740	.91	10	20
Peripheral EDP equipment operator .....	6,960	.43	13	9
Proof machine operator .....	46,030	2.85	4	62
Inserting and/or labeling machine operator .....	310	.02	19	2
Duplicating machine operator .....	1,110	.07	8	7
All other office machine operators .....	5,970	.37	n.a.	n.a.
Stenographer .....	6,010	.37	13	13
Accounting clerk .....	29,940	1.85	5	42
Bookkeeper, hand .....	14,990	.93	7	24

See footnotes at end of table.



**Table 13. Banking: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 60)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers,—Continued				
Adjustment clerk .....	7,040	0.44	9	12
Cashier .....	3,720	.23	17	7
Checking clerk, bank records .....	15,430	.95	7	19
Collector .....	17,410	1.08	5	36
Credit reporter .....	4,170	.26	8	13
File clerk .....	19,440	1.20	6	31
Insurance clerk .....	2,500	.15	8	13
General office clerk .....	120,060	7.42	2	45
Mail clerk .....	9,900	.61	5	31
Messenger, bank .....	3,830	.24	10	12
New-accounts teller .....	45,620	2.82	3	62
Order clerk .....	820	.05	15	4
Payroll and/or timekeeping clerk .....	3,520	.22	7	20
Personnel clerk .....	3,270	.20	4	22
Procurement clerk .....	580	.04	11	4
Receptionist .....	6,500	.40	8	22
Safe-deposit clerk .....	12,140	.75	5	40
Secretary .....	77,740	4.81	3	73
Statement clerk .....	29,440	1.82	5	40
Statistical clerk .....	1,600	.10	11	6
Switchboard operator .....	6,530	.40	4	31
Switchboard operator/receptionist .....	5,630	.35	6	26
Messenger .....	10,730	.66	5	29
Teller .....	364,870	22.55	1	91
Transit clerk .....	6,920	.43	9	15
Travel clerk .....	350	.02	33	1
Typist .....	23,160	1.43	9	27
Clerical supervisor, office or plant .....	63,900	3.95	4	61
Credit clerk .....	19,600	1.21	4	38
Mortgage closing clerk .....	6,410	.40	6	23
Sorting clerk, bank .....	6,850	.42	8	14
Loan closer .....	20,150	1.25	5	37
All other office clerical workers .....	77,060	4.76	n.a.	n.a.
Plant clerical workers, total .....	4,100	.25	n.a.	n.a.
Production clerk and/or coordinator .....	1,150	.07	21	2
Shipping and/or receiving clerk .....	500	.03	14	2
Stock clerk, stockroom, warehouse or storage yard .....	2,230	.14	7	14
All other plant clerical workers .....	220	.01	n.a.	n.a.
Sales occupations				
Sales agent, financial service/bank .....	13,310	.82	n.a.	n.a.
Sales agent, financial service/bank .....	10,540	.65	11	12
All other sales agents, associates, and/or representatives .....	2,530	.16	n.a.	n.a.
Sales clerk .....	240	.01	48	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 14. Credit agencies, except banks: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 61)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	585,690	100.00	--	--
Managers and officers .....	121,190	20.69	n.a.	n.a.
Professional occupations .....	46,010	7.86	n.a.	n.a.
Engineers .....	80	.01	24	( <sup>3</sup> )
Financial analyst .....	1,040	.18	10	3
Economist .....	80	.01	15	( <sup>3</sup> )
Systems analyst, electronic data processing .....	2,360	.40	6	5
Purchasing agent and/or buyer .....	690	.12	6	4
Accountants and auditors .....	9,760	1.67	3	22
Budget analyst .....	370	.06	10	2
Credit analyst, chief .....	4,260	.73	6	10
Credit analyst .....	11,360	1.94	4	18
Lawyer .....	840	.14	6	3
Personnel and labor relations specialists .....	1,770	.30	4	7
Public relations practitioner .....	2,340	.40	5	8
Appraiser, real estate .....	5,150	.88	4	12
All other professional workers .....	5,910	1.01	n.a.	n.a.
Technical occupations .....	4,160	.71	n.a.	n.a.
Computer programmer .....	3,070	.52	5	6
Engineering technicians .....	70	.01	26	( <sup>3</sup> )
All other technicians .....	1,020	.17	n.a.	n.a.
Service occupations .....	9,780	1.67	n.a.	n.a.
Janitors, porters, and cleaners .....	7,350	1.25	4	18
Guards and doorkeepers .....	1,300	.22	11	2
Food service workers .....	530	.09	8	1
Supervisor, nonworking-service only .....	220	.04	21	1
All other service workers .....	380	.06	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	2,910	.50	n.a.	n.a.
Mechanics and repairers .....	370	.06	n.a.	n.a.
Carpenter .....	140	.02	43	( <sup>3</sup> )
Delivery and/or route worker .....	110	.02	16	( <sup>3</sup> )
Supervisor, nonworking .....	280	.05	15	1
Inspector .....	120	.02	39	( <sup>3</sup> )
Maintenance repairer, general utility .....	590	.10	9	2
Parking-lot attendant .....	250	.04	13	1
Stationary engineer .....	60	.01	24	( <sup>3</sup> )
Chauffeur .....	90	.02	34	( <sup>3</sup> )
All other skilled craft and kindred workers .....	350	.06	n.a.	n.a.
All other operatives and semiskilled workers .....	270	.05	n.a.	n.a.
All other laborers and unskilled workers .....	280	.05	n.a.	n.a.
Clerical occupations .....	388,760	66.38	n.a.	n.a.
Office clerical workers, total .....	387,810	66.21	n.a.	n.a.
Addressing machine operator .....	80	.01	23	( <sup>3</sup> )
Bookkeeping and/or billing machine operator ..	1,550	.26	9	5
Computer operator .....	4,610	.79	4	11
Keypunch operator .....	2,350	.40	6	6
Peripheral EDP equipment operator .....	980	.17	14	2
Proof machine operator .....	420	.07	13	1
Inserting and/or labeling machine operator .....	90	.02	19	( <sup>3</sup> )
Duplicating machine operator .....	500	.09	9	2
All other office machine operators .....	940	.16	n.a.	n.a.
Stenographer .....	1,460	.25	7	4
Accounting clerk .....	15,370	2.62	3	27
Bookkeeper, hand .....	8,050	1.37	4	21
Adjustment clerk .....	1,230	.21	8	2
Cashier .....	8,090	1.38	6	10
Checking clerk, bank records .....	2,180	.37	7	4
Collector .....	26,870	4.59	3	36
Credit reporter .....	1,180	.20	16	2
File clerk .....	5,790	.99	4	12
Insurance clerk .....	3,560	.61	5	9

See footnotes at end of table.



**Table 14. Credit agencies, except banks: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 61)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers,—Continued				
General office clerk .....	35,600	6.08	3	31
Mail clerk .....	2,970	.51	3	9
Messenger, bank .....	460	.08	17	1
New-accounts teller .....	20,350	3.47	2	22
Order clerk .....	440	.08	17	1
Payroll and/or timekeeping clerk .....	1,620	.28	5	7
Personnel clerk .....	1,090	.19	3	5
Procurement clerk .....	210	.04	15	1
Receptionist .....	3,850	.66	4	13
Safe-deposit clerk .....	1,460	.25	9	4
Secretary .....	23,020	3.93	2	37
Statement clerk .....	3,520	.60	7	7
Statistical clerk .....	450	.08	10	1
Switchboard operator .....	1,720	.29	4	7
Switchboard operator/receptionist .....	3,420	.58	3	15
Messenger .....	1,960	.33	5	7
Teller .....	98,420	16.80	1	41
Transit clerk .....	200	.03	24	1
Typist .....	10,270	1.75	4	16
Clerical supervisor, office or plant .....	22,750	3.88	2	34
Credit clerk .....	30,010	5.12	3	38
Mortgage closing clerk .....	8,650	1.48	3	16
Sorting clerk, bank .....	440	.08	11	1
Loan closer .....	20,370	3.48	3	36
All other office clerical workers .....	9,260	1.58	n.a.	n.a.
Plant clerical workers, total .....	950	.16	n.a.	n.a.
Production clerk and/or coordinator .....	150	.03	15	( <sup>3</sup> )
Shipping and/or receiving clerk .....	140	.02	13	1
Stock clerk, stockroom, warehouse or storage yard .....	600	.10	6	3
All other plant clerical workers .....	60	.01	n.a.	n.a.
Sales occupations .....				
Sales agent, financial service/bank .....	12,880	2.20	n.a.	n.a.
All other sales agents, associates, and/or representatives .....	10,980	1.87	5	12
Sales clerk .....	1,630	.28	n.a.	n.a.
	270	.05	28	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

**Table 15. Security and commodity brokers and services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 62)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	261,350	100.00	--	--
Managers and officers .....	32,600	12.47	n.a.	n.a.
Professional occupations .....	31,350	12.00	n.a.	n.a.
Engineers .....	110	.04	27	1
Financial analyst .....	6,190	2.37	12	16
Statistician .....	580	.22	22	3
Economist .....	220	.08	16	2
Market research analyst .....	780	.30	19	3
Systems analyst, electronic data processing .....	1,830	.70	17	6
Purchasing agent and/or buyer .....	280	.11	12	4
Accountants and auditors .....	4,050	1.55	9	18
Budget analyst .....	260	.10	15	2
Lawyer .....	730	.28	14	5
Personnel and labor relations specialists .....	600	.23	16	5
Broker's floor representative, securities trader and/or securities specialist .....	9,460	3.62	9	19
All other professional workers .....	6,260	2.40	n.a.	n.a.
Technical occupations .....	2,720	1.04	n.a.	n.a.
Computer programmer .....	2,170	.83	18	7
Engineering technicians .....	90	.03	33	( <sup>3</sup> )
All other technicians .....	460	.18	n.a.	n.a.
Service occupations .....	1,520	.58	n.a.	n.a.
Janitors, porters, and cleaners .....	460	.18	17	4
Guards and doorkeepers .....	780	.30	28	2
Food service workers .....	130	.05	28	1
All other service workers .....	150	.06	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	740	.28	n.a.	n.a.
Supervisor, nonworking .....	80	.03	42	1
All other skilled craft and kindred workers .....	190	.07	n.a.	n.a.
All other operatives and semiskilled workers .....	310	.12	n.a.	n.a.
All other laborers and unskilled workers .....	160	.06	n.a.	n.a.
Clerical occupations .....	125,390	47.98	n.a.	n.a.
Office clerical workers, total .....	124,690	47.71	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	390	.15	22	2
Computer operator .....	2,640	1.01	13	13
Keypunch operator .....	3,770	1.44	14	10
Peripheral EDP equipment operator .....	1,230	.47	15	7
Duplicating machine operator .....	520	.20	13	4
All other office machine operators .....	1,890	.72	n.a.	n.a.
Stenographer .....	750	.29	18	5
Accounting clerk .....	3,880	1.48	15	16
Dividend clerk .....	1,800	.69	7	9
Bookkeeper, hand .....	2,200	.84	19	14
Brokerage clerk .....	14,860	5.69	6	37
Capital analyst .....	300	.11	21	2
Cashier .....	1,860	.71	10	17
File clerk .....	1,280	.49	7	8
General office clerk .....	13,680	5.23	7	33
Securities cashier, exchange .....	2,170	.83	9	15
Trade recorder .....	3,000	1.15	9	9
Mail clerk .....	2,090	.80	7	11
Margin clerk .....	2,540	.97	7	11
Order clerk .....	2,120	.81	17	4
Payroll and/or timekeeping clerk .....	570	.22	8	8
Personnel clerk .....	560	.21	14	6
Purchase and sales clerk and/or securities order clerk .....	4,720	1.81	7	16
Receptionist .....	1,520	.58	9	16
Secretary .....	26,340	10.08	5	69
Security description clerk .....	820	.31	12	5
Statistical clerk .....	670	.26	14	3

See footnotes at end of table.



**Table 15. Security and commodity brokers and services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 62)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers,—Continued				
Switchboard operator .....	1,140	0.44	9	12
Switchboard operator/receptionist .....	1,850	.71	6	29
Messenger .....	5,840	2.23	6	17
Transfer clerk .....	1,940	.74	10	10
Typist .....	4,440	1.70	8	18
Clerical supervisor, office or plant .....	4,680	1.79	7	24
All other office clerical workers .....	6,630	2.54	n.a.	n.a.
Plant clerical workers, total .....	700	.27	n.a.	n.a.
Production clerk and/or coordinator .....	170	.07	34	1
Shipping and/or receiving clerk .....	220	.08	26	1
Stock clerk, stockroom, warehouse or storage yard .....	230	.09	24	2
All other plant clerical workers .....	80	.03	n.a.	n.a.
Sales occupations .....	67,030	25.65	n.a.	n.a.
Sales agent, securities .....	56,020	21.43	3	57
Broker and market operator, commodities .....	3,700	1.42	15	11
All other sales agents, associates, and/or representatives .....	6,650	2.54	n.a.	n.a.
Sales clerk .....	660	.25	25	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

**Table 16. Holding and other investment offices: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 67)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	120,360	100.00	--	--
Managers and officers .....	33,160	27.55	n.a.	n.a.
Professional occupations .....	22,820	18.96	n.a.	n.a.
Engineers .....	660	.55	38	3
Financial analyst .....	1,260	1.05	15	9
All other mathematical scientists .....	60	.05	n.a.	n.a.
Physical scientists .....	170	.14	n.a.	n.a.
Economist .....	90	.07	19	1
Market research analyst .....	240	.20	35	3
All other social scientists .....	150	.12	n.a.	n.a.
Systems analyst, electronic data processing .....	1,080	.90	14	9
Purchasing agent and/or buyer .....	300	.25	20	4
Accountants and auditors .....	8,130	6.75	7	38
Budget analyst .....	210	.17	17	3
Lawyer .....	680	.56	14	7
Personnel and labor relations specialists .....	720	.60	12	8
Broker's floor representative, securities trader and/or securities specialist .....	310	.26	30	3
All other professional workers .....	8,760	7.28	n.a.	n.a.
Technical occupations .....	2,930	2.43	n.a.	n.a.
Computer programmer .....	1,790	1.49	12	11
Engineering technicians .....	400	.33	34	2
All other technicians .....	740	.61	n.a.	n.a.
Service occupations .....	7,830	6.51	n.a.	n.a.
Janitors, porters, and cleaners .....	2,500	2.08	31	15
Guards and doorkeepers .....	630	.52	n.a.	n.a.
Food service workers .....	2,610	2.17	35	3
Supervisor, nonworking-service only .....	170	.14	29	1
All other service workers .....	1,920	1.60	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	4,280	3.56	n.a.	n.a.
Mechanics and repairers .....	160	.13	n.a.	n.a.
Delivery and/or route worker .....	120	.10	40	( <sup>3</sup> )
Supervisor, nonworking .....	130	.11	34	2
Chauffeur .....	290	.24	32	2
All other skilled craft and kindred workers .....	2,010	1.67	n.a.	n.a.
All other operatives and semiskilled workers .....	370	.31	n.a.	n.a.
All other laborers and unskilled workers .....	1,200	1.00	n.a.	n.a.
Clerical occupations .....	43,770	36.37	n.a.	n.a.
Office clerical workers, total .....	43,300	35.98	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	220	.18	35	2
Computer operator .....	1,390	1.15	14	12
Keypunch operator .....	880	.73	18	9
Peripheral EDP equipment operator .....	200	.17	25	2
Duplicating machine operator .....	160	.13	28	2
All other office machine operators .....	530	.44	n.a.	n.a.
Stenographer .....	640	.53	27	5
Accounting clerk .....	3,900	3.24	22	27
Bookkeeper, hand .....	2,300	1.91	18	22
File clerk .....	550	.46	23	4
General office clerk .....	7,070	5.87	25	28
Mail clerk .....	360	.30	14	5
Payroll and/or timekeeping clerk .....	680	.56	21	12
Personnel clerk .....	210	.17	24	4
Purchase and sales clerk and/or securities order clerk .....	130	.11	37	2
Receptionist .....	730	.61	22	12
Secretary .....	14,070	11.69	8	65
Statistical clerk .....	100	.08	41	2
Switchboard operator/receptionist .....	940	.78	24	16
Messenger .....	580	.48	23	7
Typist .....	2,430	2.02	19	15

See footnotes at end of table.



**Table 16. Holding and other investment offices: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 67)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers,—Continued				
Clerical supervisor, office or plant .....	1,750	1.45	26	17
All other office clerical workers .....	3,480	2.89	n.a.	n.a.
Plant clerical workers, total .....	470	.39	n.a.	n.a.
Stock clerk, stockroom, warehouse or storage yard .....	250	.21	25	2
All other plant clerical workers .....	220	.18	n.a.	n.a.
Sales occupations .....	5,570	4.63	n.a.	n.a.
Sales agent, financial service/bank .....	180	.15	45	1
Sales agent, securities .....	1,500	1.25	40	2
Broker and market operator, commodities .....	460	.38	34	1
All other sales agents, associates, and/or representatives .....	2,990	2.48	n.a.	n.a.
Sales clerk .....	440	.37	47	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.

**Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 63)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,234,950	100.00	--	--
Managers and officers .....	150,900	12.22	n.a.	n.a.
Professional occupations .....	183,890	14.89	n.a.	n.a.
Engineers .....	2,080	.17	12	3
Actuary .....	4,550	.37	7	6
Financial analyst .....	1,930	.16	12	3
Statistician .....	1,380	.11	20	3
All other mathematical scientists .....	570	.05	n.a.	n.a.
Economist .....	190	.02	20	( <sup>3</sup> )
All other social scientists .....	170	.01	n.a.	n.a.
Systems analyst, electronic data processing .....	15,350	1.24	6	10
Purchasing agent and/or buyer .....	1,000	.08	5	6
Accountants and auditors .....	15,660	1.27	4	23
Appraiser, general merchandise and related .....	880	.07	16	2
Budget analyst .....	1,220	.10	8	4
Credit analyst .....	370	.03	21	1
Hospital insurance representative .....	570	.05	11	1
Investigator, insurance .....	6,500	.53	11	5
Law clerk .....	240	.02	14	1
Lawyer .....	5,120	.41	5	10
Librarian, professional .....	360	.03	11	2
Nurse, professional .....	1,460	.12	6	6
Paralegal personnel .....	670	.05	12	2
Personnel and labor relations specialists .....	4,950	.40	6	12
Physician and/or surgeon .....	510	.04	18	2
Public relations practitioner .....	1,110	.09	8	4
Safety inspector .....	6,060	.49	7	11
Title examiner and/or abstractor .....	6,130	.50	7	8
Appraiser, real estate .....	400	.03	13	1
Special agent, insurance .....	23,500	1.90	6	25
Claim examiner, property and/or casualty insurance .....	15,630	1.27	6	13
Building inspector, fire insurance .....	720	.06	22	1
Underwriter .....	45,280	3.67	3	29
All other professional workers .....	19,330	1.57	n.a.	n.a.
Technical occupations .....	25,990	2.10	n.a.	n.a.
Computer programmer .....	20,590	1.67	6	11
Drafter .....	430	.03	29	1
Licensed practical nurse .....	130	.01	29	( <sup>3</sup> )
Mathematical technician .....	380	.03	14	1
All other technicians .....	4,460	.36	n.a.	n.a.
Service occupations .....	14,190	1.15	n.a.	n.a.
Maid .....	1,070	.09	11	2
All other janitors, porters, and cleaners .....	6,160	.50	n.a.	n.a.
Guards and doorkeepers .....	2,150	.17	9	3
Food service workers .....	2,540	.21	11	3
Supervisor, nonworking-service only .....	310	.03	22	1
All other service workers .....	1,960	.16	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	9,000	.73	n.a.	n.a.
Mechanics and repairers, total .....	620	.05	n.a.	n.a.
Mechanic, maintenance .....	300	.02	15	1
All other mechanics and repairers .....	320	.03	n.a.	n.a.
Truck driver .....	180	.01	22	1
Carpenter .....	230	.02	14	1
Compositor and/or typesetter .....	550	.04	8	2
Delivery and/or route worker .....	170	.01	22	1
Electrician .....	320	.03	14	1
Supervisor, nonworking .....	650	.05	11	3
Maintenance repairer, general utility .....	1,330	.11	6	4
Helper, trades .....	180	.01	19	1
Painter, maintenance .....	180	.01	13	1
Press operator and/or plate printer .....	1,900	.15	9	4

See footnotes at end of table.



**Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 63)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Stationary engineer .....	400	0.03	14	1
Gardeners and groundskeepers .....	400	.03	11	2
Chauffeur .....	150	.01	12	1
All other skilled craft and kindred workers .....	540	.04	n.a.	n.a.
All other operatives and semiskilled workers .....	630	.05	n.a.	n.a.
All other laborers and unskilled workers .....	570	.05	n.a.	n.a.
Clerical occupations .....	665,520	53.89	n.a.	n.a.
Office clerical workers, total .....	660,910	53.52	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	2,400	.19	11	5
Computer operator .....	11,240	.91	6	15
Keypunch operator .....	19,310	1.56	5	15
Peripheral EDP equipment operator .....	3,910	.32	9	5
Duplicating machine operator .....	2,330	.19	9	6
All other office machine operators .....	7,240	.59	n.a.	n.a.
Stenographer .....	9,300	.75	6	16
Accounting clerk .....	26,680	2.16	3	26
Actuarial clerk .....	1,820	.15	9	4
Bookkeeper, hand .....	5,850	.47	6	16
Cancellation clerk .....	2,190	.18	8	5
Cashier .....	7,060	.57	5	18
Claim adjuster .....	33,920	2.75	5	20
Claims clerk .....	32,440	2.63	5	25
Collector .....	2,850	.23	9	4
Correspondence clerk .....	14,210	1.15	7	8
Credit reporter .....	150	.01	24	1
File clerk .....	35,020	2.84	3	32
Insurance clerk .....	3,880	.31	26	2
General office clerk .....	92,520	7.49	3	46
Library assistant .....	140	.01	14	1
Mail clerk .....	12,650	1.02	3	21
Order clerk .....	1,470	.12	13	3
Payroll and/or timekeeping clerk .....	2,720	.22	6	9
Personnel clerk .....	2,480	.20	4	11
Policy change clerk .....	16,020	1.30	5	15
Rater .....	32,520	2.63	3	20
Real estate clerk .....	2,410	.20	25	2
Receptionist .....	3,280	.27	6	12
Secretary .....	54,450	4.41	3	56
Statistical clerk .....	3,880	.31	9	5
Switchboard operator .....	2,070	.17	5	10
Switchboard operator/receptionist .....	4,220	.34	4	24
Messenger .....	2,310	.19	7	7
Title searcher .....	2,690	.22	11	5
Typist .....	51,880	4.20	3	40
Worksheet clerk .....	9,930	.80	6	9
Clerical supervisor, office or plant .....	38,630	3.13	3	35
Insurance checker .....	12,310	1.00	4	15
Credit clerk .....	280	.02	22	1
Claim examiner, life, accident and health insurance .....	41,440	3.36	5	19
Loan closer .....	2,130	.17	12	5
All other office clerical workers .....	46,680	3.78	n.a.	n.a.
Plant clerical workers, total .....	4,610	.37	n.a.	n.a.
Production clerk and/or coordinator .....	1,130	.09	17	1
Shipping and/or receiving clerk .....	560	.05	9	2
Stock clerk, stockroom, warehouse or storage yard .....	2,260	.18	6	7
All other plant clerical workers .....	660	.05	n.a.	n.a.
Sales occupations .....	185,460	15.02	n.a.	n.a.
Business broker .....	710	.06	41	( <sup>3</sup> )
Sales agent, sales associate, and/or sales representative, real estate .....	4,590	.37	21	1

See footnotes at end of table.

**Table 17. Insurance carriers: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 63)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Sales occupations—Continued</b>				
Sales agent, associate, and/or representative, insurance .....	176,270	14.27	2	46
All other sales agents, associates, and/or representatives .....	3,270	.26	n.a.	n.a.
Sales clerk .....	620	.05	28	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 18. Insurance agents, brokers, and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 64)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	463,480	100.00	--	--
Managers and officers .....	92,560	19.97	n.a.	n.a.
Professional occupations .....	57,260	12.35	n.a.	n.a.
Engineers .....	790	.17	26	1
Actuary .....	970	.21	15	1
Financial analyst .....	150	.03	23	( <sup>9</sup> )
Statistician .....	220	.05	21	( <sup>9</sup> )
Systems analyst, electronic data processing .....	970	.21	10	1
Purchasing agent and/or buyer .....	220	.05	12	1
Accountants and auditors .....	4,780	1.03	5	9
Appraiser, general merchandise and related .....	420	.09	19	1
Budget analyst .....	60	.01	22	( <sup>9</sup> )
Credit analyst .....	50	.01	32	( <sup>9</sup> )
Hospital insurance representative .....	60	.01	33	( <sup>9</sup> )
Investigator, insurance .....	2,710	.58	12	2
Law clerk .....	70	.02	27	( <sup>9</sup> )
Lawyer .....	440	.09	12	1
Librarian, professional .....	50	.01	19	( <sup>9</sup> )
Nurse, professional .....	810	.17	22	( <sup>9</sup> )
Paralegal personnel .....	90	.02	18	( <sup>9</sup> )
Personnel and labor relations specialists .....	390	.08	7	1
Public relations practitioner .....	120	.03	32	( <sup>9</sup> )
Safety inspector .....	1,850	.40	13	3
Title examiner and/or abstractor .....	920	.20	17	1
Appraiser, real estate .....	200	.04	38	( <sup>9</sup> )
Special agent, insurance .....	9,480	2.05	6	10
Claim examiner, property and/or casualty insurance .....	4,290	.93	6	5
Building inspector, fire insurance .....	900	.19	19	1
Underwriter .....	24,060	5.19	3	19
All other professional workers .....	2,190	.47	n.a.	n.a.
Technical occupations .....	2,780	.60	n.a.	n.a.
Computer programmer .....	2,120	.46	14	2
Drafter .....	280	.06	38	( <sup>9</sup> )
All other technicians .....	380	.08	n.a.	n.a.
Service occupations .....	4,130	.89	n.a.	n.a.
Maid .....	740	.16	13	2
All other janitors, porters, and cleaners .....	2,470	.53	n.a.	n.a.
Guards and doorkeepers .....	350	.08	50	( <sup>9</sup> )
Food service workers .....	190	.04	37	( <sup>9</sup> )
All other service workers .....	380	.08	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	710	.15	n.a.	n.a.
Supervisor, nonworking .....	60	.01	31	( <sup>9</sup> )
Maintenance repairer, general utility .....	80	.02	33	( <sup>9</sup> )
Press operator and/or plate printer .....	80	.02	20	( <sup>9</sup> )
Chauffeur .....	60	.01	35	( <sup>9</sup> )
All other skilled craft and kindred workers .....	140	.03	n.a.	n.a.
All other operatives and semiskilled workers .....	180	.04	n.a.	n.a.
All other laborers and unskilled workers .....	110	.02	n.a.	n.a.
Clerical occupations .....	244,600	52.77	n.a.	n.a.
Office clerical workers, total .....	244,250	52.70	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	2,790	.60	6	7
Computer operator .....	1,410	.30	6	3
Keypunch operator .....	2,040	.44	7	2
Peripheral EDP equipment operator .....	540	.12	13	1
Duplicating machine operator .....	230	.05	15	( <sup>9</sup> )
All other office machine operators .....	720	.16	n.a.	n.a.
Stenographer .....	4,160	.90	6	7
Accounting clerk .....	8,750	1.89	3	16
Actuarial clerk .....	500	.11	14	( <sup>9</sup> )
Bookkeeper, hand .....	10,710	2.31	3	21

See footnotes at end of table.

**Table 18. Insurance agents, brokers, and services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 64)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Office clerical workers,—Continued</b>				
Cancellation clerk .....	760	0.16	9	2
Cashier .....	1,650	.36	7	4
Claim adjuster .....	14,920	3.22	5	9
Claims clerk .....	12,720	2.74	3	22
Collector .....	290	.06	14	1
Correspondence clerk .....	950	.20	12	1
Credit reporter .....	320	.07	39	( <sup>3</sup> )
File clerk .....	10,720	2.31	3	17
Insurance clerk .....	570	.12	21	( <sup>3</sup> )
General office clerk .....	42,620	9.20	2	34
Mail clerk .....	1,580	.34	4	4
Order clerk .....	180	.04	31	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	1,090	.24	8	3
Personnel clerk .....	430	.09	7	1
Policy change clerk .....	8,030	1.73	5	9
Rater .....	19,180	4.14	3	18
Real estate clerk .....	460	.10	18	1
Receptionist .....	3,730	.80	5	9
Secretary .....	34,250	7.39	2	40
Statistical clerk .....	530	.11	16	1
Switchboard operator .....	890	.19	8	3
Switchboard operator/receptionist .....	4,590	.99	3	15
Messenger .....	360	.08	10	1
Title searcher .....	400	.09	26	( <sup>3</sup> )
Typist .....	16,350	3.53	3	19
Worksheet clerk .....	1,800	.39	8	2
Clerical supervisor, office or plant .....	12,450	2.69	3	18
Insurance checker .....	10,040	2.17	4	10
Credit clerk .....	50	.01	32	( <sup>3</sup> )
Claim examiner, life, accident and health insurance .....	6,300	1.36	6	5
Loan closer .....	490	.11	19	1
All other office clerical workers .....	3,700	.80	n.a.	n.a.
<b>Plant clerical workers, total .....</b>	<b>350</b>	<b>.08</b>	<b>n.a.</b>	<b>n.a.</b>
Production clerk and/or coordinator .....	70	.02	33	( <sup>3</sup> )
Shipping and/or receiving clerk .....	100	.02	22	( <sup>3</sup> )
Stock clerk, stockroom, warehouse or storage yard .....	140	.03	16	( <sup>3</sup> )
All other plant clerical workers .....	40	.01	n.a.	n.a.
<b>Sales occupations .....</b>	<b>61,440</b>	<b>13.26</b>	<b>n.a.</b>	<b>n.a.</b>
Placer .....	1,220	.26	12	1
Sales agent, sales associate, and/or sales representative, real estate .....	300	.06	27	( <sup>3</sup> )
Sales agent, associate, and/or representative, insurance .....	58,780	12.68	2	47
All other sales agents, associates, and/or representatives .....	1,100	.24	n.a.	n.a.
All other sales workers .....	40	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 19. Real estate: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 65)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	998,870	100.00	--	--
Managers and officers .....	173,470	17.37	n.a.	n.a.
Professional occupations .....	36,050	3.61	n.a.	n.a.
Engineers .....	1,420	.14	15	1
Financial analyst .....	200	.02	27	( <sup>3</sup> )
All other mathematical scientists .....	130	.01	n.a.	n.a.
Systems analyst, electronic data processing .....	340	.03	18	( <sup>3</sup> )
Purchasing agent and/or buyer .....	560	.06	14	1
Accountants and auditors .....	12,450	1.25	5	12
Landscape architect .....	140	.01	27	( <sup>3</sup> )
Architect .....	250	.03	21	( <sup>3</sup> )
Budget analyst .....	220	.02	14	( <sup>3</sup> )
Lawyer .....	720	.07	16	1
Nurse, professional .....	700	.07	17	( <sup>3</sup> )
Paralegal personnel .....	160	.02	25	( <sup>3</sup> )
Personnel and labor relations specialists .....	320	.03	12	1
Public relations practitioner .....	700	.07	12	1
Title examiner and/or abstractor .....	4,740	.47	4	4
Appraiser, real estate .....	7,560	.76	10	4
All other professional workers .....	5,440	.54	n.a.	n.a.
Technical occupations .....	4,620	.46	n.a.	n.a.
Computer programmer .....	750	.08	24	1
Engineering technicians, total .....	2,070	.21	n.a.	n.a.
Drafter .....	1,670	.17	13	2
Surveyor .....	140	.01	36	( <sup>3</sup> )
All other engineering technicians .....	260	.03	n.a.	n.a.
Licensed practical nurse .....	500	.05	20	( <sup>3</sup> )
All other technicians .....	1,300	.13	n.a.	n.a.
Service occupations .....	239,540	23.98	n.a.	n.a.
Maid .....	38,310	3.84	4	15
All other janitors, porters, and cleaners .....	115,570	11.57	n.a.	n.a.
Guards and doorkeepers .....	41,940	4.20	4	11
Food service workers .....	15,100	1.51	7	2
Supervisor, nonworking-service only .....	4,940	.49	9	4
Elevator operator .....	5,940	.59	12	1
Lifeguard .....	2,530	.25	14	1
All other service workers .....	15,210	1.52	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	221,940	22.22	n.a.	n.a.
Mechanics and repairers, total .....	2,920	.29	n.a.	n.a.
Mechanic, automotive .....	510	.05	20	1
Mechanic, maintenance .....	760	.08	20	1
Refrigeration mechanic and/or air conditioning mechanic .....	990	.10	19	1
All other mechanics and repairers .....	660	.07	n.a.	n.a.
Truck driver .....	480	.05	25	( <sup>3</sup> )
Carpenter .....	11,970	1.20	7	6
Delivery and/or route worker .....	350	.04	29	( <sup>3</sup> )
Electrician .....	900	.09	12	1
Supervisor, nonworking .....	10,270	1.03	5	10
Maintenance repairer, general utility .....	86,450	8.65	3	33
Helper, trades .....	10,160	1.02	7	5
Painter, maintenance .....	12,010	1.20	6	8
Plumber and/or pipefitter .....	760	.08	19	1
Press operator and/or plate printer .....	130	.01	31	( <sup>3</sup> )
Stationary boiler firer .....	460	.05	28	( <sup>3</sup> )
Stationary engineer .....	1,970	.20	14	1
Gardeners and groundskeepers .....	64,950	6.50	3	25
Chauffeur .....	930	.09	23	1
All other skilled craft and kindred workers .....	2,180	.22	n.a.	n.a.
All other operatives and semiskilled workers .....	4,330	.43	n.a.	n.a.
All other laborers and unskilled workers .....	10,720	1.07	n.a.	n.a.

See footnotes at end of table.

**Table 19. Real estate: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 65)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Clerical occupations .....	192,580	19.28	n.a.	n.a.
Office clerical workers, total .....	191,470	19.17	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	350	.04	15	1
Computer operator .....	900	.09	11	2
Keypunch operator .....	1,970	.20	11	2
Peripheral EDP equipment operator .....	180	.02	37	( <sup>3</sup> )
Duplicating machine operator .....	150	.02	15	( <sup>3</sup> )
All other office machine operators .....	160	.02	n.a.	n.a.
Stenographer .....	1,840	.18	12	2
Accounting clerk .....	12,460	1.25	5	12
Bookkeeper, hand .....	21,970	2.20	3	24
Cashier .....	2,300	.23	14	1
Collector .....	470	.05	18	1
Correspondence clerk .....	120	.01	21	( <sup>3</sup> )
File clerk .....	910	.09	10	1
General office clerk .....	38,520	3.86	3	26
Mail clerk .....	390	.04	10	1
Order clerk .....	320	.03	25	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	780	.08	7	2
Personnel clerk .....	250	.03	10	1
Real estate clerk .....	10,330	1.03	7	7
Receptionist .....	10,770	1.08	6	11
Secretary .....	46,990	4.70	3	35
Switchboard operator .....	3,190	.32	13	3
Switchboard operator/receptionist .....	8,010	.80	7	9
Messenger .....	760	.08	11	1
Title searcher .....	2,840	.28	6	2
Typist .....	8,260	.83	5	8
Clerical supervisor, office or plant .....	8,950	.90	6	9
Credit clerk .....	180	.02	32	( <sup>3</sup> )
Loan closer .....	2,500	.25	10	2
All other office clerical workers .....	4,650	.47	n.a.	n.a.
Plant clerical workers, total .....	1,110	.11	n.a.	n.a.
Production clerk and/or coordinator .....	180	.02	27	( <sup>3</sup> )
Shipping and/or receiving clerk .....	160	.02	23	( <sup>3</sup> )
Stock clerk, stockroom, warehouse or storage yard .....	410	.04	18	1
All other plant clerical workers .....	360	.04	n.a.	n.a.
Sales occupations .....	130,670	13.08	n.a.	n.a.
Business broker .....	790	.08	20	1
Real estate broker .....	16,550	1.66	7	10
Sales agent, sales associate, and/or sales representative, real estate .....	90,490	9.06	4	15
Sales agent, associate, and/or representative, insurance .....	2,840	.28	18	1
All other sales agents, associates, and/or representatives .....	18,770	1.88	n.a.	n.a.
Sales clerk .....	1,230	.12	19	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 20. Combined real estate, insurance, loan, and law offices: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 66)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	19,320	100.00	--	--
Managers and officers .....	4,420	22.88	n.a.	n.a.
Professional occupations .....	1,550	8.02	n.a.	n.a.
Accountants and auditors .....	110	.57	18	5
Investigator, insurance .....	70	.36	21	4
Title examiner and/or abstractor .....	70	.36	41	1
Appraiser, real estate .....	180	.93	18	7
Underwriter .....	1,010	5.23	10	19
All other professional workers .....	110	.57	n.a.	n.a.
Technical occupations .....	10	.05	n.a.	n.a.
Service occupations .....	1,030	5.33	n.a.	n.a.
Maid .....	120	.62	26	3
All other janitors, porters, and cleaners .....	870	4.50	n.a.	n.a.
All other service workers .....	40	.21	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	470	2.43	n.a.	n.a.
Carpenter .....	60	.31	26	2
Maintenance repairer, general utility .....	230	1.19	16	4
All other skilled craft and kindred workers .....	80	.41	n.a.	n.a.
All other operatives and semiskilled workers .....	50	.26	n.a.	n.a.
All other laborers and unskilled workers .....	50	.26	n.a.	n.a.
Clerical occupations .....	7,390	38.25	n.a.	n.a.
Office clerical workers, total .....	7,390	38.25	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	180	.93	15	7
Stenographer .....	210	1.09	19	4
Accounting clerk .....	230	1.19	13	9
Bookkeeper, hand .....	790	4.09	7	28
Cashier .....	120	.62	20	4
Claims clerk .....	80	.41	25	1
General office clerk .....	2,060	10.66	7	38
Real estate clerk .....	430	2.23	13	12
Receptionist .....	320	1.66	13	9
Secretary .....	1,810	9.37	6	44
Switchboard operator/receptionist .....	140	.72	17	7
Typist .....	470	2.43	13	12
Clerical supervisor, office or plant .....	290	1.50	15	9
All other office clerical workers .....	260	1.35	n.a.	n.a.
Sales occupations .....	4,450	23.03	n.a.	n.a.
Placer .....	220	1.14	19	5
Real estate broker .....	760	3.93	9	18
Sales agent, sales associate, and/or sales representative, real estate .....	1,740	9.01	7	21
Sales agent, associate, and/or representative, insurance .....	1,360	7.04	7	30
All other sales agents, associates, and/or representatives .....	370	1.92	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.



# Services

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

In 1981, services employed approximately 13.2 million workers or 55 percent of the workers covered by the survey. The largest industry segment in services was business services, with 25 percent of employment. Tables 21 through 33 present occupational employment for each of the industry segments in services.

## 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 1981, these establishments employed approximately 1.1 million workers, constituting 5 percent of all workers covered by the survey and nearly 9 percent of the workers employed in services. Hotels, motels, and tourist courts employed 97 percent of these workers.

The largest occupational group in hotels and other lodging places consisted of 738,310 service workers, accounting for 65 percent of total employment (table 21). Clerical workers ranked second with 16 percent. The third largest occupational group was maintenance, construction, repair, material handling, and powerplant workers, with 8 percent of total employment. The remaining occupational employment was distributed as follows: Managers and officers, 7 percent; professional workers, 2 percent; sales workers, 1 percent; and technical workers, only 0.2 percent of total employment.

The five most populous occupations in hotels and other lodging places, together accounting for half of total employment, are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Maid .....	239,160	21.2
Waiter/waitress .....	150,230	13.3
Desk clerk .....	87,920	7.8
Kitchen helper .....	49,620	4.4
Cook, restaurant .....	42,760	3.8

## Personal services

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

These establishments employed 905,430 workers in 1981, or 3 percent of all workers in the industries surveyed and 7 percent of the workers employed in services. The two largest employers of these workers were laundry, cleaning, and garment services, with 39 percent, and barber shops, with 31 percent.

As shown in table 22, the personal services industry employed 325,260 service workers, who accounted for 36 percent of total industry employment. Other occupational groups with large numbers of personal service workers include maintenance, construction, repair, material handling, and powerplant workers, with 28 percent of employment, and clerical workers, with 16 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Cosmetologist or hairstylist .....	197,340	21.8
Counter clerk .....	56,560	6.3
Delivery or route worker .....	29,560	3.3
Reducing instructor .....	29,550	3.3
Barber .....	28,230	3.1

## 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 3.2 million workers in 1981, or 14 percent of all workers covered by the survey and 25 percent of the workers in services industries.

As shown in table 23, the largest occupational group in business services consisted of 936,460 clerical workers, who accounted for 29 percent of industry employment. Service workers constituted 26 percent. The third largest occupational group was made up of 460,250 maintenance, construction, repair, material handling, and powerplant workers, with 14 percent of total employment. Professional workers ranked fourth with about 13 percent. The remaining employment was distributed as follows: Managers and officers, with 9 percent; technical workers, 6 percent; and sales workers, 4 percent.



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

	<i>Employment</i>	<i>Percent of industry employment</i>
Guards and doorkeepers . . . . .	306,970	9.4
Secretary . . . . .	125,830	3.9
General office clerk . . . . .	114,270	3.5
Sales agent, associate, or representative . . . . .	102,450	3.1
House cleaner . . . . .	91,520	2.8

**Automotive repair, services, and garages**

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

In 1981, automotive repair, services, and garages employed 571,160 workers, constituting only 2 percent of surveyed employment and 4 percent of services employment. Sixty-two percent of these workers were employed in automotive repair shops.

The largest occupational group, accounting for almost two-thirds of total employment in this industry, consisted of 370,470 maintenance, construction, repair, material handling, and powerplant workers (table 24). Clerical workers, numbering 88,720, ranked second with about 16 percent. Managers and officers made up 15 percent.

The five largest occupations in automotive repair, services, and garages are listed below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Automotive mechanic . . . . .	103,150	18.1
Automotive body repairer . . . . .	54,120	9.5
Vehicle cleaner . . . . .	37,890	6.6
Parking lot attendant . . . . .	23,060	4.0
Automotive painter . . . . .	20,490	3.6

**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 248,760 workers in 1981, accounting for only 1 percent of surveyed employment and just 2 percent of services employment.

Maintenance, construction, repair, material handling, and powerplant workers, numbering 143,600, constituted the largest occupational group in the industry, with 58 percent of total employment (table 25). Clerical workers, with 34,320, and managers and officers, with 34,300, each made up 14 percent of employment in miscellaneous repair services.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Welders and flamecutters . . . . .	17,550	7.1
Electrical and electronic technicians . . . . .	13,830	5.6
Electric motor repairer . . . . .	11,450	4.6
Television servicer and repairer, and radio or tape recorder repairer . . . . .	11,280	4.5
General office clerk . . . . .	9,180	3.7

**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 1981, motion pictures employed 213,050 or about 1 percent of all workers covered by the survey and 2 percent of the workers employed in services. Fifty-seven percent of these workers were employed by motion picture theaters.

As shown in table 26, service workers, totaling 56,670, made up the largest occupational group, with 27 percent of industry employment. Other occupational groups with large numbers of workers in this industry were clerical workers, with 22 percent of total employment, and professional workers, with 19 percent.

The five most populous occupations in the motion picture industry are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Usher, lobby attendant, ticket taker, or drive-in theater attendant . . . . .	27,860	13.1
Actor or actress . . . . .	21,620	10.2
Cashier . . . . .	20,180	9.5
Motion picture projectionist . . . . .	16,210	7.6
Janitors, porters, and cleaners . . . . .	11,050	5.2

**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 769,770 persons in 1981, accounting for 3 percent of surveyed employment and 6 percent of services employment.

As shown in table 27, the largest occupational group in amusement and recreation services consisted of 339,370 service workers or 44 percent of total industry employment. Other occupational groups with large numbers of these workers were maintenance, construction, repair, material handling, and powerplant workers and professional workers, each with 15 percent of employment.



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

	<i>Employment</i>	<i>Percent of industry employment</i>
Waiter/waitress .....	61,070	7.9
Gardeners and groundskeepers ...	43,650	5.7
Game operator, ride operator, and concession worker .....	42,220	5.5
Cashier .....	39,150	5.1
Instrumental musician .....	31,580	4.1

### 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.<sup>1</sup>

These health services employed 2.6 million workers in 1981, accounting for 11 percent of surveyed employment and 20 percent of services employment. Of these workers, nursing and personal care facilities employed 39 percent; physicians' offices, 30 percent; and dentists' offices, 14 percent.

Service workers, numbering 858,460, constituted the largest occupational group in health services, with one-third of industry employment (table 28). Ranking second with 21 percent, professional workers totaled 549,510. The third largest occupational group consisted of 488,060 clerical workers, with 19 percent of industry employment. Technicians, numbering 466,860, made up 18 percent. The remaining occupational employment was distributed as follows: Managers and officers, 6 percent; maintenance, construction, repair, material handling, and powerplant workers, 4 percent; and sales workers, only 0.1 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Nurse aide or orderly .....	488,020	18.5
Professional nurse .....	184,300	7.0
Physician or surgeon .....	171,940	6.5
Dental assistant .....	136,380	5.2
Licensed practical nurse .....	135,150	5.1

### Legal services

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

These establishments employed 542,980 persons in 1981, or only 2 percent of all workers covered by

<sup>1</sup> A separate survey of private and State and local government hospitals (SIC 806) was conducted in April 1980, and occupational employment data from the survey can be found in appendix B.

the survey and 4 percent of the workers employed in services.

Ninety-eight percent of the total employment in legal services was accounted for by three major occupational groups. Clerical workers, the largest major group, made up nearly 54 percent (table 29). Professionals, numbering 206,080, ranked second with 38 percent of legal services employment. Managers and officers accounted for 7 percent.

The five largest occupations in this industry, together accounting for nearly three-fourths of total employment, are listed in the tabulation below:

	<i>Employment</i>	<i>Percent of industry employment</i>
Secretary .....	190,210	35.0
Lawyer .....	140,800	25.9
Paralegal personnel .....	30,900	5.7
Law clerk .....	26,100	4.8
Bookkeeper, hand .....	12,760	2.4

### 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 nearly 1.2 million persons in 1981, accounting for 5 percent of surveyed employment and 9 percent of services employment. One-fourth of these workers were engaged in providing child day care services.

As shown in table 30, the largest occupational group was made up of 381,870 service workers or one-third of all workers employed in social services. Professional workers, totaling 313,170, constituted 27 percent of industry employment. The third largest occupational group consisted of 211,560 clerical workers, with 18 percent of total employment. Managers and officers accounted for 10 percent; maintenance, construction, repair, material handling, and powerplant workers, 10 percent; and technical and sales workers together, 2 percent of employment.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Child care worker .....	122,980	10.6
Elementary or preschool teacher ..	84,380	7.3
Teacher aide or educational assistant .....	67,630	5.8
Caseworker .....	57,230	4.9
Nurse aide or orderly .....	53,980	4.6



### 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 1981, these establishments employed 33,760 workers, accounting for the smallest proportion of employment among the surveyed industries. More than four-fifths of these workers were employed in museums and art galleries.

As shown in table 31, service workers constituted the largest occupational group, with 10,810 or 32 percent of total industry employment. Clerical workers, totaling 6,000, ranked second with 18 percent. Professional workers made up 16 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Sightseeing or establishment guide .....	3,850	11.4
Guards and doorkeepers .....	3,410	10.1
Sales clerk .....	1,570	4.7
Secretary .....	1,540	4.6
Nonvocational education teacher or instructor .....	1,500	4.4

### 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 1981, membership organizations employed 643,390 workers or 3 percent of all workers covered by the survey and 5 percent of the workers employed in services. Civic, social, and fraternal associations were the largest group of employers of these workers, with 48 percent of industry employment.

Clerical workers, numbering 164,060, made up the largest occupational group, with more than one-fourth of total employment in membership organizations (table 32). Service workers and managers and officers each ac-

counted for 25 percent of the industry's workers, with 160,840 and 158,690, respectively.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Secretary .....	44,210	6.9
Bartender .....	33,840	5.3
General office clerk .....	28,950	4.5
Waiter/waitress .....	26,190	4.1
Group recreation worker .....	25,460	4.0

### 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 million workers in 1981, accounting for 4 percent of surveyed employment and 8 percent of services employment. Establishments rendering engineering, architectural, and surveying services employed 55 percent of the industry's workers.

As shown in table 33, the largest occupational group consisted of professional workers, numbering 421,560 or 40 percent of the workers employed in miscellaneous services. Clerical workers, totaling 250,620, ranked second with 24 percent. The third largest occupational group was technical workers, with 185,670 or 18 percent. Managers and officers made up 11 percent of employment in miscellaneous services. The remaining occupational employment was distributed as follows: Maintenance, construction, repair, material handling, and powerplant workers, 5 percent; service workers, 1 percent; and sales workers, about 1 percent.

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

	<i>Employment</i>	<i>Percent of industry employment</i>
Accountants and auditors .....	144,800	13.8
Drafter .....	99,660	9.5
Secretary .....	67,180	6.4
Architect .....	36,480	3.5
Mechanical engineer .....	30,310	2.9



**Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 70)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,129,770	100.00	--	--
Managers and officers .....	76,720	6.79	n.a.	n.a.
Professional occupations .....	23,070	2.04	n.a.	n.a.
Engineers .....	1,090	.10	10	4
Systems analyst, electronic data processing .....	230	.02	23	1
Purchasing agent and/or buyer .....	1,470	.13	5	10
Accountants and auditors .....	7,250	.64	5	21
Dancer .....	390	.03	26	( <sup>3</sup> )
Musician, instrumental .....	1,380	.12	10	3
Nurse, professional .....	410	.04	18	2
Personnel and labor relations specialists .....	1,180	.10	6	7
Public relations practitioner .....	1,080	.10	7	5
Sports instructor .....	870	.08	18	2
Group recreation worker .....	5,650	.50	6	7
All other professional workers .....	2,070	.18	n.a.	n.a.
Technical occupations .....	2,520	.22	n.a.	n.a.
Computer programmer .....	370	.03	22	2
Engineering technicians .....	970	.09	12	2
Licensed practical nurse .....	360	.03	23	1
All other technicians .....	820	.07	n.a.	n.a.
Service occupations .....	738,310	65.35	n.a.	n.a.
Maid .....	239,160	21.17	1	81
House cleaner .....	28,020	2.48	3	30
All other janitors, porters, and cleaners .....	15,230	1.35	n.a.	n.a.
Guards and doorkeepers .....	14,310	1.27	5	18
Food service workers, total .....	363,100	32.14	n.a.	n.a.
Baker, bread and/or pastry .....	1,430	.13	6	8
Bartender .....	32,910	2.91	2	41
Dining room attendant, bartender helper, or cafeteria attendant .....	38,840	3.44	3	28
Butcher and/or meat cutter .....	630	.06	7	4
Host/hostess, restaurant, lounge or coffee shop .....	15,660	1.39	3	30
Kitchen helper .....	49,620	4.39	2	44
Waiter/waitress .....	150,230	13.30	2	48
Counter attendant, lunchroom, coffee shop, or cafeteria .....	3,570	.32	9	6
Cook, short order and/or specialty fast foods ..	7,230	.64	7	11
Cook, restaurant .....	42,760	3.78	2	45
Food preparation and service worker, fast food restaurant .....	2,310	.20	12	3
Pantry, sandwich and/or coffee maker .....	10,350	.92	3	18
Cook, institution or cafeteria .....	3,370	.30	9	9
All other food service workers .....	4,190	.37	n.a.	n.a.
Bellhop, baggage porter, doorkeeper, and/or room service attendant .....	20,820	1.84	3	23
Cosmetologist and/or hairstylist .....	230	.02	25	1
Supervisor, nonworking-service only .....	14,780	1.31	9	20
Housekeeper .....	21,790	1.93	4	49
Recreation facility attendant .....	2,620	.23	11	4
Elevator operator .....	460	.04	16	1
Lifeguard .....	4,300	.38	7	10
Checkroom and locker-room attendants .....	810	.07	9	2
All other service workers .....	12,680	1.12	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	90,370	8.00	n.a.	n.a.
Mechanics and repairers, total .....	3,130	.28	n.a.	n.a.
Mechanic, automotive .....	360	.03	17	2
Mechanic, maintenance .....	660	.06	12	2
Refrigeration mechanic and/or air conditioning mechanic .....	530	.05	9	3
All other mechanics and repairers .....	1,580	.14	n.a.	n.a.
Marker, classifier, wet wash assembler, detacher, and/or checker .....	680	.06	13	2
Washer, machine and/or starcher .....	6,510	.58	5	12

See footnotes at end of table.



**Table 21. Hotels and other lodging places: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 70)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Dry cleaning machine operator .....	170	0.02	17	1
Laundry operator, small establishment .....	12,470	1.10	5	21
Presser, machine .....	350	.03	15	1
Laundry presser, machine .....	3,310	.29	6	5
Truck driver .....	200	.02	18	1
Bus driver .....	1,370	.12	11	2
Carpenter .....	1,400	.12	9	6
Delivery and/or route worker .....	170	.02	21	1
Electrician .....	960	.08	7	5
Supervisor, nonworking .....	2,740	.24	10	12
Inspector .....	210	.02	35	1
Maintenance repairer, general utility .....	26,100	2.31	3	47
Helper, trades .....	1,790	.16	8	5
Painter, maintenance .....	3,490	.31	7	10
Parking-lot attendant .....	2,410	.21	7	3
Plumber and/or pipefitter .....	540	.05	8	3
Stationary boiler firer .....	220	.02	15	1
Stationary engineer .....	890	.08	10	2
Baker helper .....	570	.05	11	3
Gardeners and groundskeepers .....	10,360	.92	6	23
Chauffeur .....	1,730	.15	14	4
All other skilled craft and kindred workers .....	740	.07	n.a.	n.a.
All other operatives and semiskilled workers .....	1,770	.16	n.a.	n.a.
All other laborers and unskilled workers .....	6,090	.54	n.a.	n.a.
Clerical occupations .....	185,690	16.44	n.a.	n.a.
Office clerical workers, total .....	181,430	16.06	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	830	.07	8	4
Computer operator .....	460	.04	11	2
Keypunch operator .....	270	.02	15	1
All other office machine operators .....	620	.05	n.a.	n.a.
Stenographer .....	280	.02	17	1
Accounting clerk .....	7,030	.62	5	19
Bookkeeper, hand .....	14,500	1.28	3	39
Cashier .....	23,490	2.08	5	27
File clerk .....	730	.06	9	4
General office clerk .....	5,900	.52	9	13
Desk clerk .....	87,920	7.78	2	68
Order clerk .....	380	.03	11	2
Payroll and/or timekeeping clerk .....	3,630	.32	6	17
Personnel clerk .....	1,130	.10	5	8
Receptionist .....	1,870	.17	9	7
Secretary .....	11,560	1.02	4	30
Switchboard operator .....	8,980	.79	3	15
Switchboard operator/receptionist .....	1,700	.15	12	4
Travel clerk .....	1,180	.10	21	3
Typist .....	2,040	.18	9	7
Clerical supervisor, office or plant .....	4,830	.43	6	14
All other office clerical workers .....	2,100	.19	n.a.	n.a.
Plant clerical workers, total .....	4,260	.38	n.a.	n.a.
Production clerk and/or coordinator .....	140	.01	14	1
Shipping and/or receiving clerk .....	880	.08	6	5
Stock clerk, stockroom, warehouse or storage yard .....	3,120	.28	5	10
All other plant clerical workers .....	120	.01	n.a.	n.a.
Sales occupations .....	13,090	1.16	n.a.	n.a.
Sales agent, associate, and/or representative .....	7,650	.68	9	19
Sales clerk .....	5,440	.48	8	9

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 72)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	905,430	100.00	--	--
Managers and officers .....	105,200	11.62	n.a.	n.a.
Professional occupations .....	46,580	5.14	n.a.	n.a.
Engineers .....	200	.02	13	( <sup>9</sup> )
Systems analyst, electronic data processing .....	90	.01	19	( <sup>9</sup> )
Photographer, portrait and/or commercial .....	7,410	.82	7	3
All other photographers .....	3,750	.41	n.a.	n.a.
Purchasing agent and/or buyer .....	320	.04	10	1
Accountants and auditors .....	6,350	.70	6	6
Dietitian and/or nutritionist .....	1,180	.13	25	( <sup>9</sup> )
Embalmer .....	10,460	1.16	3	9
Musician, instrumental .....	1,310	.14	14	2
Nurse, professional .....	1,740	.19	24	( <sup>9</sup> )
Personnel and labor relations specialists .....	160	.02	28	( <sup>9</sup> )
Public relations practitioner .....	170	.02	35	( <sup>9</sup> )
Tax preparer .....	10,300	1.14	11	2
All other professional workers .....	3,140	.35	n.a.	n.a.
Technical occupations .....	2,570	.28	n.a.	n.a.
Computer programmer .....	180	.02	17	( <sup>9</sup> )
Licensed practical nurse .....	500	.06	39	( <sup>9</sup> )
All other technicians .....	1,890	.21	n.a.	n.a.
Service occupations .....	325,260	35.92	n.a.	n.a.
Maid .....	6,970	.77	6	7
All other janitors, porters, and cleaners .....	15,400	1.70	n.a.	n.a.
Guards and doorkeepers .....	740	.08	25	1
Food service workers .....	900	.10	31	( <sup>9</sup> )
Child care attendant .....	690	.08	22	( <sup>9</sup> )
Barber .....	28,230	3.12	5	7
Cosmetologist and/or hairstylist .....	197,340	21.80	1	42
Supervisor, nonworking-service only .....	480	.05	16	( <sup>9</sup> )
Funeral attendant .....	12,220	1.35	3	8
Manicurist .....	7,450	.82	6	5
Masseur or masseuse .....	2,410	.27	21	( <sup>9</sup> )
Scalp treatment operator .....	890	.10	26	( <sup>9</sup> )
Wig dresser .....	540	.06	27	( <sup>9</sup> )
Bootblack .....	530	.06	42	( <sup>9</sup> )
Shampooer .....	10,150	1.12	5	6
Instructor, reducing .....	29,550	3.26	6	4
Child-care worker .....	200	.02	50	( <sup>9</sup> )
Lifeguard .....	390	.04	33	( <sup>9</sup> )
Checkroom and locker-room attendants .....	1,460	.16	29	( <sup>9</sup> )
Mortuary beautician .....	1,320	.15	8	2
All other service workers .....	7,400	.82	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	253,110	27.95	n.a.	n.a.
Mechanics and repairers, total .....	6,370	.70	n.a.	n.a.
Mechanic, automotive .....	920	.10	7	1
Laundry machine mechanic .....	4,880	.54	8	4
Mechanic, maintenance .....	180	.02	24	( <sup>9</sup> )
All other mechanics and repairers .....	390	.04	n.a.	n.a.
Developer and/or projection printer .....	1,450	.16	14	1
Negative cutter and/or spotter .....	540	.06	16	( <sup>9</sup> )
Multiple photographic printer operator .....	820	.09	17	1
Print developer, machine .....	530	.06	19	( <sup>9</sup> )
Photo checker and assembler .....	1,600	.18	13	1
Photographer helper .....	620	.07	21	1
All other darkroom workers .....	460	.05	n.a.	n.a.
Marker, classifier, wet wash assembler, detacher, and/or checker .....	13,620	1.50	4	7
Spotter, dry cleaning .....	4,620	.51	7	4
Spotter, washable materials .....	2,410	.27	9	2
Washer, machine and/or starcher .....	11,230	1.24	5	8
Tumbler operator .....	3,240	.36	6	4

See footnotes at end of table.



**Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 72)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Dry cleaning machine operator .....	12,330	1.36	5	9
Dry cleaner, hand .....	1,120	.12	15	1
Laundry operator, small establishment .....	6,660	.74	12	2
Presser, hand .....	5,020	.55	8	3
Presser, machine .....	27,380	3.02	3	12
Laundry presser, machine .....	35,160	3.88	3	10
Rug cleaner, hand .....	2,910	.32	19	1
Rug cleaner, machine .....	4,140	.46	15	1
Shoe dyer .....	380	.04	39	( <sup>3</sup> )
Shoe repairer .....	4,430	.49	9	1
Truck driver .....	1,020	.11	9	1
Delivery and/or route worker .....	29,560	3.26	3	11
Supervisor, nonworking .....	3,820	.42	5	3
Folder, laundry .....	13,870	1.53	5	6
Inspector .....	4,840	.53	7	3
Maintenance repairer, general utility .....	2,610	.29	8	3
Helper, trades .....	200	.02	25	( <sup>3</sup> )
Mender .....	6,630	.73	6	6
Order filler .....	1,560	.17	11	1
Photograph retoucher, airbrush artist, and/or photograph colorist .....	1,170	.13	15	1
Painter, maintenance .....	100	.01	36	( <sup>3</sup> )
Production packager, hand or machine .....	3,990	.44	7	3
Custom sewer .....	1,190	.13	22	( <sup>3</sup> )
Sewing machine operator, regular equipment-garment .....	2,150	.24	18	1
Sewing machine operator, special equipment and/or automatic equipment-garment .....	560	.06	26	1
Stationary boiler firer .....	180	.02	11	( <sup>3</sup> )
Stationary engineer .....	170	.02	13	( <sup>3</sup> )
Alteration tailor .....	10,540	1.16	6	6
Gardeners and groundskeepers .....	2,080	.23	9	2
Chauffeur .....	3,390	.37	8	2
Ambulance driver and/or attendant .....	230	.03	44	( <sup>3</sup> )
All other skilled craft and kindred workers .....	560	.06	n.a.	n.a.
All other operatives and semiskilled workers .....	3,240	.36	n.a.	n.a.
All other laborers and unskilled workers .....	12,410	1.37	n.a.	n.a.
Clerical occupations .....	144,150	15.92	n.a.	n.a.
Office clerical workers, total .....	136,680	15.10	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	290	.03	11	1
Computer operator .....	620	.07	9	1
Keypunch operator .....	600	.07	10	1
All other office machine operators .....	190	.02	n.a.	n.a.
Accounting clerk .....	3,020	.33	9	3
Bookkeeper, hand .....	7,950	.88	5	10
Cashier .....	6,120	.68	10	3
Counter clerk .....	56,560	6.25	3	14
File clerk .....	380	.04	25	( <sup>3</sup> )
General office clerk .....	14,660	1.62	5	11
Order clerk .....	1,360	.15	16	1
Payroll and/or timekeeping clerk .....	3,340	.37	7	5
Receptionist .....	23,140	2.56	3	19
Secretary .....	8,880	.98	5	10
Switchboard operator .....	500	.06	13	1
Switchboard operator/receptionist .....	880	.10	10	1
Typist .....	2,050	.23	11	2
Clerical supervisor, office or plant .....	840	.09	16	1
All other office clerical workers .....	5,300	.59	n.a.	n.a.
Plant clerical workers, total .....	7,470	.83	n.a.	n.a.
Production clerk and/or coordinator .....	1,440	.16	13	1
Shipping packer .....	2,230	.25	10	1
Shipping and/or receiving clerk .....	560	.06	14	1
Stock clerk, stockroom, warehouse or storage yard .....	2,180	.24	10	2

See footnotes at end of table.



**Table 22. Personal services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 72)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers,—Continued				
Dispatcher, vehicle, service or work .....	230	0.03	14	( <sup>3</sup> )
All other plant clerical workers .....	830	.09	n.a.	n.a.
Sales occupations .....	28,560	3.15	n.a.	n.a.
Sales agent, associate, and/or representative .....	21,380	2.36	5	9
Sales clerk .....	7,180	.79	10	2

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 73)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	3,263,280	100.00	--	--
Managers and officers .....	293,160	8.98	n.a.	n.a.
Professional occupations .....	406,530	12.46	n.a.	n.a.
Engineers, total .....	60,700	1.86	n.a.	n.a.
Aeronautical engineer .....	2,520	.08	34	( <sup>3</sup> )
Chemical engineer .....	4,020	.12	47	1
Civil engineer .....	3,420	.10	16	1
Electrical and electronic engineers .....	22,510	.69	21	3
Industrial engineer .....	3,310	.10	23	1
Mechanical engineer .....	8,540	.26	20	1
Metallurgists and metallurgical engineers .....	1,340	.04	48	( <sup>3</sup> )
Petroleum engineer .....	720	.02	40	( <sup>3</sup> )
Safety engineer .....	480	.01	35	( <sup>3</sup> )
All other engineers .....	13,840	.42	n.a.	n.a.
Financial analyst .....	1,960	.06	19	1
Mathematician .....	1,650	.05	39	( <sup>3</sup> )
Statistician .....	2,200	.07	18	1
All other mathematical scientists .....	1,210	.04	n.a.	n.a.
Chemist .....	9,690	.30	16	2
Geologists and geophysicists .....	1,740	.05	32	1
Physicist .....	3,800	.12	35	( <sup>3</sup> )
All other physical scientists .....	2,760	.08	n.a.	n.a.
Agricultural scientist .....	1,380	.04	34	( <sup>3</sup> )
Biological scientist .....	5,670	.17	21	1
All other life scientists .....	1,110	.03	n.a.	n.a.
Economist .....	2,440	.07	26	( <sup>3</sup> )
Market research analyst .....	5,880	.18	16	2
Psychologist .....	2,280	.07	26	( <sup>3</sup> )
Sociologist .....	770	.02	43	( <sup>3</sup> )
Urban and regional planner .....	830	.03	32	( <sup>3</sup> )
All other social scientists .....	6,310	.19	n.a.	n.a.
Systems analyst, business .....	34,700	1.06	6	6
Systems analyst, scientific and technical .....	20,510	.63	16	3
Vocational and educational counselor .....	1,010	.03	32	( <sup>3</sup> )
Photographer .....	8,220	.25	9	3
Purchasing agent and/or buyer .....	7,270	.22	7	6
Accountants and auditors .....	25,460	.78	6	14
Appraiser, general merchandise and related .....	3,000	.09	30	( <sup>3</sup> )
Media buyer .....	5,550	.17	9	3
Commercial artist .....	31,240	.96	5	9
Writer and/or editor .....	17,020	.52	6	7
Employment interviewer .....	35,000	1.07	7	8
Media analyst .....	5,480	.17	11	2
Nurse, professional .....	33,120	1.01	10	2
Personnel and labor relations specialists .....	5,720	.18	12	4
Public relations practitioner .....	10,340	.32	15	3
Reporters and correspondents .....	2,130	.07	16	( <sup>3</sup> )
Designer .....	11,110	.34	14	2
Tax preparer .....	1,010	.03	25	1
All other professional workers .....	36,260	1.11	n.a.	n.a.
Technical occupations .....	187,390	5.74	n.a.	n.a.
Computer programmer, business .....	42,590	1.31	5	8
Computer programmer, scientific and technical .....	17,730	.54	9	3
Engineering technicians, total .....	70,130	2.15	n.a.	n.a.
Drafter .....	19,000	.58	11	3
Electrical and electronic technicians .....	26,280	.81	11	3
Surveyor .....	340	.01	48	( <sup>3</sup> )
Mechanical engineering technician .....	4,190	.13	26	1
Industrial engineering technician .....	870	.03	35	( <sup>3</sup> )
Civil engineering technician .....	4,430	.14	21	1
All other engineering technicians .....	15,020	.46	n.a.	n.a.
Science technicians .....	7,640	.23	26	1
Licensed practical nurse .....	30,490	.93	9	2
Mathematical technician .....	850	.03	28	( <sup>3</sup> )
All other technicians .....	17,960	.55	n.a.	n.a.

See footnotes at end of table.



**Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 73)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Service occupations .....	856,190	26.24	n.a.	n.a.
Maid .....	32,890	1.01	7	3
House cleaner .....	91,520	2.80	4	6
All other janitors, porters, and cleaners .....	297,640	9.12	n.a.	n.a.
Guards and doorkeepers .....	306,970	9.41	2	8
Food service workers .....	15,260	.47	19	1
Detective .....	12,290	.38	29	2
Supervisor, nonworking-service only .....	15,980	.49	7	6
Protective-signal operator .....	6,840	.21	18	1
All other service workers .....	76,800	2.35	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	460,250	14.10	n.a.	n.a.
Mechanics and repairers, total .....	33,390	1.02	n.a.	n.a.
Protective signal installer and/or repairer .....	5,720	.18	17	1
Mechanic, automotive .....	3,870	.12	18	2
Diesel mechanic .....	3,160	.10	16	1
Electrical instrument repairer .....	370	.01	32	( <sup>3</sup> )
Mechanic, maintenance .....	5,850	.18	14	2
Refrigeration mechanic and/or air conditioning mechanic .....	1,280	.04	49	( <sup>3</sup> )
Coin machine servicer and/or vending machine repairer .....	1,600	.05	34	( <sup>3</sup> )
Data processing machine repairer .....	3,450	.11	21	1
All other mechanics and repairers .....	8,090	.25	n.a.	n.a.
Developer and/or projection printer .....	8,770	.27	10	3
Negative cutter and/or spotter .....	2,760	.08	13	1
Multiple photographic printer operator .....	5,710	.17	17	1
Print developer, machine .....	2,280	.07	20	1
Photo checker and assembler .....	4,530	.14	20	1
Photographer helper .....	590	.02	26	( <sup>3</sup> )
Copy camera operator .....	2,840	.09	19	1
All other darkroom workers .....	4,290	.13	n.a.	n.a.
Truck driver .....	31,880	.98	11	5
Billposter .....	2,550	.08	30	1
Blueprinting machine operator .....	3,030	.09	14	1
Carpenter .....	5,060	.16	24	1
Compositor and/or typesetter .....	3,420	.10	13	2
Delivery and/or route worker .....	28,320	.87	9	7
Electrician .....	5,260	.16	29	1
Exterminator .....	20,110	.62	7	3
Supervisor, nonworking .....	10,840	.33	8	6
Fumigator .....	1,490	.05	21	( <sup>3</sup> )
Industrial truck operator .....	3,750	.11	19	1
Inspector .....	6,290	.19	20	1
Machinist .....	3,860	.12	19	1
Maintenance repairer, general utility .....	11,860	.36	15	4
Helper, trades .....	4,720	.14	15	2
Order filler .....	3,420	.10	22	1
Photograph retoucher, airbrush artist, and/or photograph colorist .....	1,890	.06	33	1
Painter, maintenance .....	4,320	.13	16	1
Plumber and/or pipefitter .....	3,040	.09	39	1
Press operator and/or plate printer .....	9,180	.28	16	2
Production packager, hand or machine .....	16,490	.51	16	1
Sign erector .....	2,940	.09	22	1
Stationary boiler firer .....	330	.01	38	( <sup>3</sup> )
Stationary engineer .....	560	.02	31	( <sup>3</sup> )
Animal caretaker .....	1,140	.03	45	( <sup>3</sup> )
Termite treater .....	5,720	.18	10	2
Termite treater helper .....	1,280	.04	17	1
Welder and/or flamecutter .....	3,850	.12	22	1
Tester .....	4,070	.12	22	1
Mailer .....	4,070	.12	16	1
Gardeners and groundskeepers .....	9,530	.29	19	2
Chauffeur .....	4,080	.13	24	1
Bindery worker, assembly .....	6,580	.20	33	1

See footnotes at end of table.



**Table 23. Business services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 73)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
All other skilled craft and kindred workers .....	23,730	0.73	n.a.	n.a.
All other operatives and semiskilled workers .....	29,290	.90	n.a.	n.a.
All other laborers and unskilled workers .....	117,140	3.59	n.a.	n.a.
Clerical occupations .....	936,460	28.70	n.a.	n.a.
Office clerical workers, total .....	884,390	27.10	n.a.	n.a.
Addressing machine operator .....	1,850	.06	16	1
Bookkeeping and/or billing machine operator ..	4,120	.13	12	2
Computer operator .....	34,830	1.07	4	10
Keypunch operator .....	67,320	2.06	5	9
Peripheral EDP equipment operator .....	10,790	.33	11	3
Inserting and/or labeling machine operator .....	8,490	.26	10	1
Duplicating machine operator .....	8,630	.26	9	4
All other office machine operators .....	7,040	.22	n.a.	n.a.
Stenographer .....	16,420	.50	8	4
Accounting clerk .....	33,340	1.02	4	15
Bookkeeper, hand .....	28,190	.86	4	19
Call-out operator .....	2,850	.09	24	1
Cashier .....	8,450	.26	19	2
Collector .....	21,650	.66	5	6
Credit reporter .....	8,520	.26	10	2
Media clerk, estimator, and/or biller .....	3,370	.10	10	1
File clerk .....	30,820	.94	6	8
General office clerk .....	114,270	3.50	6	22
In-file operator .....	5,040	.15	12	2
Mail clerk .....	13,500	.41	9	5
Order clerk .....	8,730	.27	16	4
Payroll and/or timekeeping clerk .....	11,980	.37	5	11
Personnel clerk .....	4,020	.12	7	4
Receptionist .....	23,170	.71	5	11
Secretary .....	125,830	3.86	3	38
Statistical clerk .....	15,160	.46	23	2
Survey worker .....	41,220	1.26	12	1
Switchboard operator .....	40,750	1.25	10	5
Switchboard operator/receptionist .....	18,140	.56	7	12
Typist .....	84,610	2.59	4	17
Clerical supervisor, office or plant .....	25,710	.79	5	13
All other office clerical workers .....	55,580	1.70	n.a.	n.a.
Plant clerical workers, total .....	52,070	1.60	n.a.	n.a.
Production clerk and/or coordinator .....	13,440	.41	8	5
Shipping packer .....	6,100	.19	15	2
Shipping and/or receiving clerk .....	6,950	.21	8	4
Stock clerk, stockroom, warehouse or storage yard .....	16,740	.51	13	5
Dispatcher, vehicle, service or work .....	5,140	.16	29	3
All other plant clerical workers .....	3,700	.11	n.a.	n.a.
Sales occupations .....	123,300	3.78	n.a.	n.a.
Sales agent, associate, and/or representative .....	102,450	3.14	3	29
Sales clerk .....	16,810	.52	15	3
Demonstrator .....	4,040	.12	22	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 24. Automotive repair, services, and garages: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 75)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	571,160	100.00	--	--
Managers and officers .....	85,220	14.92	n.a.	n.a.
Professional occupations .....	5,000	.88	n.a.	n.a.
Engineers .....	70	.01	38	( <sup>3</sup> )
Systems analyst, electronic data processing .....	160	.03	29	( <sup>3</sup> )
Purchasing agent and/or buyer .....	320	.06	17	1
Accountants and auditors .....	3,380	.59	8	6
Instructor, automobile driving .....	90	.02	44	( <sup>3</sup> )
Personnel and labor relations specialists .....	320	.06	30	( <sup>3</sup> )
All other professional workers .....	660	.12	n.a.	n.a.
Technical occupations .....	850	.15	n.a.	n.a.
Computer programmer .....	570	.10	19	1
All other technicians .....	280	.05	n.a.	n.a.
Service occupations .....	8,330	1.46	n.a.	n.a.
Janitors, porters, and cleaners .....	4,770	.84	8	8
Guards and doorkeepers .....	340	.06	26	( <sup>3</sup> )
Food service workers .....	140	.02	n.a.	n.a.
Supervisor, nonworking-service only .....	550	.10	12	( <sup>3</sup> )
All other service workers .....	2,530	.44	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	370,470	64.86	n.a.	n.a.
Mechanics and repairers, total .....	181,550	31.79	n.a.	n.a.
Mechanic, automotive .....	103,150	18.06	3	41
Automotive body repairer .....	54,120	9.48	4	25
Diesel mechanic .....	20,140	3.53	7	9
Mechanic, maintenance .....	420	.07	35	( <sup>3</sup> )
All other mechanics and repairers .....	3,720	.65	n.a.	n.a.
Truck driver .....	12,760	2.23	9	6
Automobile repair-service estimator .....	150	.03	36	( <sup>3</sup> )
Cleaner, vehicle .....	37,890	6.63	4	17
Delivery and/or route worker .....	5,210	.91	9	6
Supervisor, nonworking .....	6,830	1.20	5	11
Industrial truck operator .....	480	.08	39	( <sup>3</sup> )
Inspector .....	200	.04	24	( <sup>3</sup> )
Machinist .....	3,610	.63	17	2
Maintenance repairer, general utility .....	3,420	.60	15	3
Helper, trades .....	7,440	1.30	8	8
Painter, automotive .....	20,490	3.59	6	17
Parking-lot attendant .....	23,060	4.04	3	4
Tire fabricator and/or repairer .....	9,830	1.72	11	4
Trailer and/or van rental attendant .....	5,370	.94	10	2
Welder and/or flamecutter .....	5,430	.95	11	4
Service station attendant, fuel pump attendant and/or lubricator .....	12,760	2.23	7	8
Painter, production .....	2,650	.46	16	2
Automobile seat cover, convertible or vinyl top installer .....	4,520	.79	17	2
Glass installer, automotive .....	5,340	.93	14	3
Rental car deliverer .....	7,730	1.35	11	2
Chauffeur .....	1,920	.34	16	1
All other skilled craft and kindred workers .....	1,970	.34	n.a.	n.a.
All other operatives and semiskilled workers .....	4,310	.75	n.a.	n.a.
All other laborers and unskilled workers .....	5,550	.97	n.a.	n.a.
Clerical occupations .....	88,720	15.53	n.a.	n.a.
Office clerical workers, total .....	78,670	13.77	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	130	.02	23	( <sup>3</sup> )
Computer operator .....	350	.06	16	1
Keypunch operator .....	680	.12	20	( <sup>3</sup> )
Accounting clerk .....	4,820	.84	7	7
Bookkeeper, hand .....	10,200	1.79	5	17
Car rental clerk .....	15,950	2.79	6	7
Cashier .....	12,000	2.10	5	10

See footnotes at end of table.



**Table 24. Automotive repair, services, and garages: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 75)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers.—Continued				
File clerk .....	430	0.08	19	1
General office clerk .....	16,050	2.81	4	22
Order clerk .....	270	.05	31	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	2,270	.40	10	5
Personnel clerk .....	90	.02	18	( <sup>3</sup> )
Receptionist .....	2,550	.45	10	5
Secretary .....	8,930	1.56	5	14
Switchboard operator .....	100	.02	31	( <sup>3</sup> )
Switchboard operator/receptionist .....	240	.04	12	1
Typist .....	1,650	.29	12	3
Clerical supervisor, office or plant .....	710	.12	12	1
All other office clerical workers .....	1,250	.22	n.a.	n.a.
Plant clerical workers, total .....	10,050	1.76	n.a.	n.a.
Production clerk and/or coordinator .....	190	.03	21	( <sup>3</sup> )
Shipping and/or receiving clerk .....	340	.06	20	1
Stock clerk, stockroom, warehouse or storage yard .....	7,420	1.30	9	9
Dispatcher, vehicle, service or work .....	1,480	.26	17	1
All other plant clerical workers .....	620	.11	n.a.	n.a.
Sales occupations .....	12,570	2.20	n.a.	n.a.
Sales agent, associate, and/or representative .....	11,700	2.05	5	14
Sales clerk .....	870	.15	43	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 76)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	248,760	100.00	--	--
Managers and officers .....	34,300	13.79	n.a.	n.a.
Professional occupations .....	5,620	2.26	n.a.	n.a.
Engineers, total .....	2,720	1.09	n.a.	n.a.
Electrical and electronic engineers .....	2,480	1.00	19	3
All other engineers .....	240	.10	n.a.	n.a.
Systems analyst, electronic data processing .....	170	.07	40	( <sup>3</sup> )
Purchasing agent and/or buyer .....	280	.11	6	2
Accountants and auditors .....	1,800	.72	6	7
Personnel and labor relations specialists .....	110	.04	18	( <sup>3</sup> )
All other professional workers .....	540	.22	n.a.	n.a.
Technical occupations .....	15,300	6.15	n.a.	n.a.
Computer programmer .....	130	.05	( <sup>3</sup> )	( <sup>3</sup> )
Engineering technicians, total .....	14,490	5.82	n.a.	n.a.
Drafter .....	500	.20	13	2
Electrical and electronic technicians .....	13,830	5.56	4	12
All other engineering technicians .....	160	.06	n.a.	n.a.
Taxidermist .....	370	.15	26	( <sup>3</sup> )
All other technicians .....	310	.12	n.a.	n.a.
Service occupations .....	3,340	1.34	n.a.	n.a.
Janitors, porters, and cleaners .....	2,740	1.10	8	8
Guards and doorkeepers .....	230	.09	16	( <sup>3</sup> )
Supervisor, nonworking-service only .....	50	.02	26	( <sup>3</sup> )
All other service workers .....	320	.13	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	143,600	57.73	n.a.	n.a.
Mechanics and repairers, total .....	57,290	23.03	n.a.	n.a.
Mechanic, automotive .....	4,800	1.93	6	6
Bicycle repairer .....	160	.06	31	( <sup>3</sup> )
Camera repairer and/or motion picture camera repairer .....	660	.27	21	1
Diesel mechanic .....	740	.30	14	1
Electric motor repairer .....	11,450	4.60	4	10
Electric tool repairer .....	190	.08	29	( <sup>3</sup> )
Electrical instrument repairer .....	800	.32	18	1
Electromedical equipment repairer .....	180	.07	37	( <sup>3</sup> )
Farm equipment mechanic .....	80	.03	47	( <sup>3</sup> )
Gasoline engine or mower repairer .....	340	.14	25	1
Locksmith .....	4,400	1.77	8	3
Marine mechanic and/or repairer .....	250	.10	28	( <sup>3</sup> )
Mechanic, maintenance .....	2,800	1.13	8	4
Office machine servicer and/or cash register servicer .....	900	.36	16	1
Refrigeration mechanic and/or air conditioning mechanic .....	8,710	3.50	6	7
Television servicer and repairer, radio repairer and/or tape recorder repairer .....	11,280	4.53	5	8
Data processing machine repairer .....	400	.16	32	( <sup>3</sup> )
Gas and electric appliance repairer .....	5,470	2.20	7	5
All other mechanics and repairers .....	3,680	1.48	n.a.	n.a.
Truck driver .....	3,140	1.26	5	9
Boilermaker .....	2,080	.84	10	2
Cabinetmaker .....	960	.39	14	1
Carpenter .....	450	.18	20	1
Delivery and/or route worker .....	2,040	.82	8	6
Electrician .....	3,300	1.33	12	3
Filers, grinders, buffers, chippers, cleaners, and/or polishers .....	1,990	.80	9	2
Supervisor, nonworking .....	2,360	.95	4	8
Inspector .....	300	.12	13	1
Instrument repairer .....	1,390	.56	11	1
Jeweler and/or silversmith .....	1,720	.69	14	1
Lens grinder .....	150	.06	30	( <sup>3</sup> )

See footnotes at end of table.



**Table 25. Miscellaneous repair services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 76)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Machinist .....	7,480	3.01	5	11
Maintenance repairer, general utility .....	2,430	.98	10	4
Helper, trades .....	7,010	2.82	4	13
Musical instrument repairer .....	460	.18	27	( <sup>3</sup> )
Painter, maintenance .....	340	.14	17	1
Plumber and/or pipefitter .....	1,430	.57	11	2
Production packager, hand or machine .....	180	.07	16	( <sup>3</sup> )
Sewing machine operator, regular equipment-nongarment .....	1,900	.76	8	4
Sewing machine operator, special and/or automatic equipment-nongarment .....	460	.18	22	1
Sheet metal worker .....	430	.17	18	1
Watchmaker .....	1,460	.59	14	1
Welder and/or flamecutter .....	17,550	7.05	3	19
Furniture finisher .....	2,850	1.15	9	3
Furniture upholsterer .....	8,090	3.25	4	8
Septic tank servicer and/or sewer pipe cleaner .....	3,650	1.47	8	3
Saw filer .....	240	.10	23	( <sup>3</sup> )
Tester .....	120	.05	16	( <sup>3</sup> )
Picture framer .....	300	.12	31	1
All other skilled craft and kindred workers .....	1,290	.52	n.a.	n.a.
All other operatives and semiskilled workers .....	4,600	1.85	n.a.	n.a.
All other laborers and unskilled workers .....	4,160	1.67	n.a.	n.a.
Clerical occupations .....	34,320	13.80	n.a.	n.a.
Office clerical workers, total .....	29,920	12.03	n.a.	n.a.
Bookkeeping and/or billing machine operator .....	330	.13	16	1
Computer operator .....	230	.09	13	1
Keypunch operator .....	160	.06	19	( <sup>3</sup> )
Accounting clerk .....	1,330	.53	7	5
Bookkeeper, hand .....	4,920	1.98	4	21
Cashier .....	430	.17	20	1
File clerk .....	100	.04	14	1
General office clerk .....	9,180	3.69	3	26
Order clerk .....	280	.11	13	1
Payroll and/or timekeeping clerk .....	1,320	.53	6	6
Receptionist .....	60	.02	21	( <sup>3</sup> )
Secretary .....	8,330	3.35	3	28
Switchboard operator/receptionist .....	330	.13	27	1
Typist .....	2,130	.86	6	7
Clerical supervisor, office or plant .....	160	.06	14	1
All other office clerical workers .....	630	.25	n.a.	n.a.
Plant clerical workers, total .....	4,400	1.77	n.a.	n.a.
Production clerk and/or coordinator .....	160	.06	8	1
Shipping packer .....	140	.06	16	( <sup>3</sup> )
Shipping and/or receiving clerk .....	2,160	.87	5	9
Stock clerk, stockroom, warehouse or storage yard .....	1,610	.65	6	6
Dispatcher, vehicle, service or work .....	300	.12	15	1
All other plant clerical workers .....	30	.01	n.a.	n.a.
Sales occupations .....	12,280	4.94	n.a.	n.a.
Sales agent, associate, and/or representative .....	8,690	3.49	3	20
Sales clerk .....	3,590	1.44	7	6

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 26. Motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1981**

(SIC 78)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	213,050	100.00	--	--
Managers and officers .....	27,710	13.01	n.a.	n.a.
Professional occupations .....	39,630	18.60	n.a.	n.a.
Electrical and electronic engineers .....	570	.27	26	3
Systems analyst, electronic data processing .....	180	.08	21	1
Photographer .....	2,430	1.14	17	9
Purchasing agent and/or buyer .....	480	.23	18	5
Accountants and auditors .....	1,450	.68	12	8
Actor or actress .....	21,620	10.15	9	2
Budget analyst .....	240	.11	24	1
Commercial artist .....	1,780	.84	33	5
Writer and/or editor .....	1,560	.73	19	4
Film editor .....	2,040	.96	17	6
Lawyer .....	170	.08	23	1
Motion picture narrator .....	240	.11	41	1
Music director .....	150	.07	32	1
Musician, instrumental .....	3,140	1.47	26	1
Personnel and labor relations specialists .....	100	.05	17	1
Public relations practitioner .....	490	.23	21	3
Singer .....	280	.13	50	( <sup>3</sup> )
Designer .....	240	.11	36	1
All other professional workers .....	2,470	1.16	n.a.	n.a.
Technical occupations .....	3,310	1.55	n.a.	n.a.
Computer programmer .....	280	.13	21	2
Engineering technicians, total .....	2,130	1.00	n.a.	n.a.
Electrical and electronic technicians .....	500	.23	40	3
Sound recording and reproduction technician .....	1,260	.59	16	5
All other engineering technicians .....	370	.17	n.a.	n.a.
All other technicians .....	900	.42	n.a.	n.a.
Service occupations .....	56,670	26.60	n.a.	n.a.
Janitors, porters, and cleaners .....	11,050	5.19	3	50
Guards and doorkeepers .....	2,310	1.08	9	8
Kitchen helper .....	340	.16	28	1
Counter attendant, lunchroom, coffee shop, or cafeteria .....	6,190	2.91	8	14
Cook, short order and/or specialty fast foods .....	880	.41	21	3
Food preparation and service worker, fast food restaurant .....	5,320	2.50	9	10
All other food service workers .....	1,040	.49	n.a.	n.a.
Costumer .....	220	.10	33	( <sup>3</sup> )
Costumer assistant .....	140	.07	44	( <sup>3</sup> )
Supervisor, nonworking-service only .....	160	.08	23	1
Make-up artist .....	220	.10	32	1
Usher, lobby attendant, ticket taker and/or drive-in theater attendant .....	27,860	13.08	3	47
All other service workers .....	940	.44	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	26,350	12.37	n.a.	n.a.
Mechanics and repairers, total .....	450	.21	n.a.	n.a.
Camera repairer and/or motion picture camera repairer .....	180	.08	40	2
All other mechanics and repairers .....	270	.13	n.a.	n.a.
Developing-machine operator, motion picture film .....	860	.40	29	1
Negative cutter and/or spotter .....	600	.28	34	1
Film printer, motion picture film .....	680	.32	30	1
All other darkroom workers .....	460	.22	n.a.	n.a.
Truck driver .....	970	.46	29	2
Carpenter .....	320	.15	33	1
Delivery and/or route worker .....	530	.25	39	2
Dubbing machine operator .....	220	.10	49	1
Electrician .....	150	.07	35	1
Supervisor, nonworking .....	490	.23	23	2
Inspector .....	960	.45	26	4

See footnotes at end of table.

**Table 26. Motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1981—Continued**

(SIC 78)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance, construction, repair, material handling and powerplant occupations—Continued				
Machinist .....	160	0.08	49	1
Maintenance repairer, general utility .....	480	.23	18	4
Helper, trades .....	100	.05	35	1
Microphone-boom operator, motor-power connector, and/or sound installation worker ...	180	.08	49	1
Property handler .....	280	.13	31	1
Motion picture projectionist .....	16,210	7.61	2	58
Film viewer .....	420	.20	35	1
All other skilled craft and kindred workers .....	630	.30	n.a.	n.a.
All other operatives and semiskilled workers .....	380	.18	n.a.	n.a.
All other laborers and unskilled workers .....	820	.38	n.a.	n.a.
Clerical occupations .....	45,760	21.48	n.a.	n.a.
Office clerical workers, total .....	41,750	19.60	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	240	.11	27	2
Computer operator .....	320	.15	24	2
Key punch operator .....	310	.15	20	2
All other office machine operators .....	120	.06	n.a.	n.a.
Stenographer .....	90	.04	32	1
Accounting clerk .....	1,330	.62	12	7
Bookkeeper, hand .....	1,380	.65	11	12
Cashier .....	20,180	9.47	3	56
Film booker .....	1,360	.64	15	8
File clerk .....	350	.16	15	3
General office clerk .....	3,720	1.75	13	13
Order clerk .....	550	.26	22	2
Payroll and/or timekeeping clerk .....	590	.28	13	6
Personnel clerk .....	70	.03	22	1
Receptionist .....	680	.32	17	5
Secretary .....	5,430	2.55	9	23
Switchboard operator .....	210	.10	23	2
Switchboard operator/receptionist .....	480	.23	18	5
Script clerk .....	140	.07	23	1
Typist .....	1,530	.72	13	8
Clerical supervisor, office or plant .....	1,040	.49	16	5
All other office clerical workers .....	1,630	.77	n.a.	n.a.
Plant clerical workers, total .....	4,010	1.88	n.a.	n.a.
Production clerk and/or coordinator .....	990	.46	19	4
Shipping packer .....	1,160	.54	23	4
Shipping and/or receiving clerk .....	1,180	.55	20	6
Stock clerk, stockroom, warehouse or storage yard .....	510	.24	22	3
All other plant clerical workers .....	170	.08	n.a.	n.a.
Sales occupations .....	13,620	6.39	n.a.	n.a.
Sales agent, associate, and/or representative .....	3,140	1.47	11	13
Sales clerk .....	10,480	4.92	6	22

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 27. Amusement and recreation services, except motion pictures: Employment, relative error, and percent of establishments reporting selected occupations, April 1981**

(SIC 79)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	769,770	100.00	--	--
Managers and officers .....	64,540	8.38	n.a.	n.a.
Professional occupations .....	114,270	14.84	n.a.	n.a.
Engineers, total .....	240	.03	n.a.	n.a.
Electrical and electronic engineers .....	140	.02	23	1
All other engineers .....	100	.01	n.a.	n.a.
Painter, artistic .....	260	.03	21	1
Teacher and/or instructor, nonvocational education .....	600	.08	36	1
Purchasing agent and/or buyer .....	980	.13	15	3
Accountants and auditors .....	4,330	.56	6	13
Actor or actress .....	8,450	1.10	11	2
Announcer, radio and television .....	1,080	.14	23	3
Athlete, professional .....	6,630	.86	6	3
Coach, professional athletes .....	710	.09	14	1
Comedian .....	780	.10	31	( <sup>3</sup> )
Dance instructor .....	12,100	1.57	7	7
Dancer .....	4,050	.53	16	1
Music director .....	1,130	.15	19	3
Musician, instrumental .....	31,580	4.10	6	8
Nurse, professional .....	430	.06	10	1
Personnel and labor relations specialists .....	320	.04	12	1
Public relations practitioner .....	3,540	.46	8	9
Sports instructor .....	21,530	2.80	7	23
Singer .....	3,370	.44	14	2
Umpire .....	1,710	.22	24	1
Designer .....	1,290	.17	17	2
Athletic trainer .....	320	.04	30	1
Group recreation worker .....	3,860	.50	17	4
All other professional workers .....	4,980	.65	n.a.	n.a.
Technical occupations .....	2,600	.34	n.a.	n.a.
Computer programmer .....	140	.02	27	1
Engineering technicians, total .....	730	.09	n.a.	n.a.
Electrical and electronic technicians .....	580	.08	21	1
All other engineering technicians .....	150	.02	n.a.	n.a.
Licensed practical nurse .....	330	.04	20	( <sup>3</sup> )
All other technicians .....	1,400	.18	n.a.	n.a.
Service occupations .....	339,370	44.09	n.a.	n.a.
Maid .....	6,550	.85	9	9
All other janitors, porters, and cleaners .....	25,380	3.30	n.a.	n.a.
Guards and doorkeepers .....	12,230	1.59	6	9
Food service workers, total .....	166,260	21.60	n.a.	n.a.
Bartender .....	27,890	3.62	3	32
Dining room attendant, bartender helper, or cafeteria attendant .....	12,010	1.56	6	10
Host/hostess, restaurant, lounge or coffee shop .....	1,980	.26	9	5
Kitchen helper .....	16,690	2.17	4	18
Waiter/waitress .....	61,070	7.93	3	29
Counter attendant, lunchroom, coffee shop, or cafeteria .....	8,280	1.08	8	7
Cook, short order and/or specialty fast foods .....	12,830	1.67	5	16
Cook, restaurant .....	13,260	1.72	4	19
Food preparation and service worker, fast food restaurant .....	7,070	.92	14	2
Pantry, sandwich and/or coffee maker .....	2,890	.38	10	5
Cook, institution or cafeteria .....	650	.08	20	1
All other food service workers .....	1,640	.21	n.a.	n.a.
Child care attendant .....	8,090	1.05	5	13
Cosmetologist and/or hairstylist .....	340	.04	25	( <sup>3</sup> )
Costumer .....	500	.06	16	1
Costumer assistant .....	440	.06	13	1
Supervisor, nonworking-service only .....	6,880	.89	6	13
Housekeeper .....	1,820	.24	10	5
Make-up artist .....	170	.02	24	( <sup>3</sup> )
Masseur or masseuse .....	340	.04	26	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 1981—Continued**

(SIC 79)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Service occupations—Continued</b>				
Recreation facility attendant .....	25,380	3.30	6	16
Game operators, ride operators and concession workers .....	42,220	5.48	6	5
Usher, lobby attendant, ticket taker and/or drive-in theater attendant .....	11,340	1.47	5	4
Guide, sightseeing or establishment .....	2,500	.32	27	1
Lifeguard .....	15,930	2.07	9	11
Checkroom and locker-room attendants .....	6,480	.84	7	9
All other service workers .....	6,520	.85	n.a.	n.a.
<b>Maintenance, construction, repair, material handling and powerplant occupations</b>				
Mechanics and repairers, total .....	118,070	15.34	n.a.	n.a.
Mechanic, automotive .....	17,930	2.33	n.a.	n.a.
Mechanic, maintenance .....	930	.12	14	2
Pinsetter mechanic, automatic .....	800	.10	13	1
Coin machine servicer and/or vending machine repairer .....	7,860	1.02	4	14
All other mechanics and repairers .....	7,340	.95	14	3
Truck driver .....	1,000	.13	n.a.	n.a.
Carpenter .....	200	.03	29	1
Delivery and/or route worker .....	1,540	.20	14	3
Electrician .....	450	.06	42	1
Supervisor, nonworking .....	1,470	.19	15	3
Inspector .....	580	.08	11	2
Maintenance repairer, general utility .....	210	.03	29	( <sup>3</sup> )
Helper, trades .....	14,780	1.92	6	20
Order filler .....	630	.08	15	1
Painter, maintenance .....	100	.01	41	( <sup>3</sup> )
Parking-lot attendant .....	700	.09	17	1
Plumber and/or pipefitter .....	3,770	.49	7	3
Custom sewer .....	280	.04	15	1
Stationary engineer .....	580	.08	19	1
Animal caretaker .....	180	.02	20	( <sup>3</sup> )
Pin chaser .....	7,870	1.02	7	3
Racker, poolroom .....	10,500	1.36	3	13
Gardeners and groundskeepers .....	540	.07	23	1
Chauffeur .....	43,650	5.67	4	26
All other skilled craft and kindred workers .....	310	.04	30	1
All other operatives and semiskilled workers .....	1,890	.25	n.a.	n.a.
All other laborers and unskilled workers .....	2,510	.33	n.a.	n.a.
	7,400	.96	n.a.	n.a.
<b>Clerical occupations</b>				
Office clerical workers, total .....	104,520	13.58	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	102,720	13.34	n.a.	n.a.
Computer operator .....	470	.06	15	2
Keypunch operator .....	380	.05	17	2
All other office machine operators .....	190	.02	16	1
Stenographer .....	130	.02	n.a.	n.a.
Accounting clerk .....	330	.04	39	( <sup>3</sup> )
Bookkeeper, hand .....	3,580	.47	7	10
Cashier .....	6,670	.87	5	21
Desk clerk, bowling floor .....	39,150	5.09	4	20
File clerk .....	16,810	2.18	3	16
General office clerk .....	330	.04	16	1
Order clerk .....	8,780	1.14	6	18
Payroll and/or timekeeping clerk .....	450	.06	22	1
Personnel clerk .....	2,170	.28	6	8
Receptionist .....	270	.04	16	1
Secretary .....	5,280	.69	10	10
Switchboard operator .....	9,600	1.25	5	21
Switchboard operator/receptionist .....	900	.12	10	2
Typist .....	1,420	.18	9	4
Clerical supervisor, office or plant .....	1,620	.21	12	4
All other office clerical workers .....	3,060	.40	9	7
Plant clerical workers, total .....	1,130	.15	n.a.	n.a.
Shipping and/or receiving clerk .....	1,800	.23	n.a.	n.a.
	320	.04	31	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 1981—Continued**

(SIC 79)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers,—Continued				
Stock clerk, stockroom, warehouse or storage yard .....	1,330	0.17	11	2
All other plant clerical workers .....	150	.02	n.a.	n.a.
Sales occupations .....	26,400	3.43	n.a.	n.a.
Sales agent, associate, and/or representative .....	7,680	1.00	13	8
Sales clerk .....	16,040	2.08	10	10
Vendor .....	2,680	.35	14	2

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

**Table 28. Health services, except hospitals: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 80, except 806)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,631,910	100.00	--	--
Managers and officers .....	154,420	5.87	n.a.	n.a.
Professional occupations .....	549,510	20.88	n.a.	n.a.
Biological scientist .....	550	.02	26	( <sup>3</sup> )
Psychologist .....	8,010	.30	11	3
All other social scientists .....	590	.02	n.a.	n.a.
Physical therapist .....	15,590	.59	9	8
Respiratory therapist .....	3,900	.15	26	1
Occupational therapist .....	4,160	.16	9	3
Manual arts, music, and/or recreational therapist	4,390	.17	8	3
All other therapists .....	3,580	.14	n.a.	n.a.
Systems analyst, electronic data processing .....	460	.02	21	( <sup>3</sup> )
Podiatrist .....	3,900	.15	13	2
Speech pathologist and/or audiologist .....	5,200	.20	11	3
Audiometrist .....	640	.02	26	( <sup>3</sup> )
Purchasing agent and/or buyer .....	1,550	.06	7	3
Accountants and auditors .....	13,730	.52	5	8
Caseworker .....	24,210	.92	6	9
Chiropractor .....	4,710	.18	11	2
Dentist .....	56,740	2.16	2	19
Dietitian and/or nutritionist .....	8,350	.32	4	8
Nurse, professional .....	184,300	7.00	2	33
Optometrist .....	8,650	.33	8	5
Personnel and labor relations specialists .....	1,260	.05	8	2
Pharmacist .....	2,220	.08	8	2
Physician and/or surgeon .....	171,940	6.53	2	31
Group recreation worker .....	12,260	.47	4	7
All other professional workers .....	8,620	.33	n.a.	n.a.
Technical occupations .....	466,860	17.74	n.a.	n.a.
Computer programmer .....	650	.02	12	1
Biological science technician .....	600	.02	40	( <sup>3</sup> )
Dental assistant .....	136,380	5.18	1	26
Licensed practical nurse .....	135,150	5.14	2	24
Physician's assistant .....	13,880	.53	7	4
Surgical technician .....	660	.03	23	( <sup>3</sup> )
Radiologic technician .....	25,250	.96	5	8
Pharmacy helper .....	980	.04	14	1
Medical record librarian .....	4,460	.17	5	5
Dental hygienist .....	61,470	2.34	2	18
Medical laboratory technologist .....	23,900	.91	5	7
Biochemistry technologist .....	740	.03	17	( <sup>3</sup> )
Microbiology technologist .....	1,140	.04	14	1
Cytotechnologist .....	1,800	.07	13	1
Histologic technologist .....	1,050	.04	15	1
Medical laboratory technician .....	20,450	.78	5	7
Electrocardiograph technician .....	1,030	.04	15	1
Electroencephalograph technician .....	620	.02	27	( <sup>3</sup> )
Dietetic technician .....	6,310	.24	6	5
Blood bank technology specialist .....	3,630	.14	13	1
Physical therapy assistant .....	13,790	.52	10	6
Radiologic technologist and/or nuclear medical technologist .....	2,430	.09	13	1
All other medical and dental technologists and technicians .....	7,900	.30	n.a.	n.a.
All other technicians .....	2,590	.10	n.a.	n.a.
Service occupations .....	858,460	32.62	n.a.	n.a.
Maid .....	71,300	2.71	2	17
All other janitors, porters, and cleaners .....	36,770	1.40	n.a.	n.a.
Guards and doorkeepers .....	2,720	.10	8	1
Dining room attendant, bartender helper, or cafeteria attendant .....	7,100	.27	11	1
Kitchen helper .....	72,480	2.75	2	10
Waiter/waitress .....	6,820	.26	12	1
Cook, short order and/or specialty fast foods .....	1,370	.05	16	1
Cook, institution or cafeteria .....	36,270	1.38	2	10
All other food service workers .....	9,630	.37	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, May 1981—Continued**

(SIC 80, except 806)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Service occupations—Continued</b>				
Supervisor, nonworking—service only .....	2,090	0.08	7	2
Housekeeper .....	11,700	.44	5	8
Nurse aide and/or orderly .....	488,020	18.54	1	15
Psychiatric aid .....	2,610	.10	21	( <sup>3</sup> )
Child-care worker .....	1,490	.06	36	( <sup>3</sup> )
Social service aide .....	10,220	.39	7	5
Medical assistant .....	86,280	3.28	3	17
Occupational therapy assistant .....	1,950	.07	10	1
All other service workers .....	9,640	.37	n.a.	n.a.
<b>Maintenance, construction, repair, material handling and powerplant occupations .....</b>				
Mechanics and repairers, total .....	111,170	4.22	n.a.	n.a.
Electromedical equipment repairer .....	1,100	.04	n.a.	n.a.
All other mechanics and repairers .....	540	.02	27	( <sup>3</sup> )
Washer, machine and/or starcher .....	560	.02	n.a.	n.a.
Laundry presser, machine .....	23,510	.89	3	8
Truck driver .....	2,650	.10	10	1
Delivery and/or route worker .....	330	.01	20	( <sup>3</sup> )
Supervisor, nonworking .....	7,200	.27	7	3
Maintenance repairer, general utility .....	1,640	.06	9	2
Helper, trades .....	11,640	.44	4	8
Painter, maintenance .....	800	.03	13	1
Dental-laboratory technician .....	1,190	.05	9	1
Custom sewer .....	34,790	1.32	6	6
Optician, dispensing and/or optical mechanic .....	290	.01	28	( <sup>3</sup> )
Gardeners and groundskeepers .....	11,640	.44	8	4
Chauffeur .....	6,170	.23	9	3
All other skilled craft and kindred workers .....	1,650	.06	13	1
All other operatives and semiskilled workers .....	980	.04	n.a.	n.a.
All other laborers and unskilled workers .....	3,130	.12	n.a.	n.a.
<b>Clerical occupations .....</b>				
Office clerical workers, total .....	488,060	18.54	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	484,560	18.41	n.a.	n.a.
Computer operator .....	9,560	.36	6	5
Keypunch operator .....	2,180	.08	9	2
Peripheral EDP equipment operator .....	2,310	.09	7	2
All other office machine operators .....	300	.01	21	( <sup>3</sup> )
Stenographer .....	470	.02	n.a.	n.a.
Accounting clerk .....	2,590	.10	8	2
Bookkeeper, hand .....	11,530	.44	5	8
Cashier .....	30,350	1.15	3	20
File clerk .....	6,900	.26	6	5
General office clerk .....	21,040	.80	4	8
Mail clerk .....	56,020	2.13	3	20
Insurance clerk, medical .....	630	.02	10	1
Order clerk .....	38,870	1.48	3	16
Payroll and/or timekeeping clerk .....	480	.02	17	1
Personnel clerk .....	6,740	.26	6	7
Receptionist .....	1,250	.05	7	2
Secretary .....	124,220	4.72	2	46
Statistical clerk .....	107,120	4.07	2	34
Switchboard operator .....	1,050	.04	10	1
Switchboard operator/receptionist .....	4,260	.16	7	3
Typist .....	11,890	.45	5	7
Clerical supervisor, office or plant .....	24,660	.94	4	10
All other office clerical workers .....	11,440	.43	5	8
Plant clerical workers, total .....	8,700	.33	n.a.	n.a.
Production clerk and/or coordinator .....	3,500	.13	n.a.	n.a.
Shipping and/or receiving clerk .....	290	.01	25	( <sup>3</sup> )
Stock clerk, stockroom, warehouse or storage yard .....	1,540	.06	12	1
All other plant clerical workers .....	1,360	.05	9	1
<b>Sales occupations .....</b>				
Sales agent, associate, and/or representative .....	3,430	.13	n.a.	n.a.
All other sales workers .....	3,170	.12	10	2
	260	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.



**Table 29. Legal services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 81)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	542,980	100.00	--	--
Managers and officers .....	36,320	6.69	n.a.	n.a.
Professional occupations .....	206,080	37.95	n.a.	n.a.
Systems analyst, electronic data processing .....	650	.12	25	2
Accountants and auditors .....	2,750	.51	12	8
Law clerk .....	26,100	4.81	5	34
Lawyer .....	140,800	25.93	2	76
Librarian, professional .....	2,310	.43	8	10
Paralegal personnel .....	30,900	5.69	4	36
Personnel and labor relations specialists .....	180	.03	40	1
All other professional workers .....	2,390	.44	n.a.	n.a.
Technical occupations .....	1,430	.26	n.a.	n.a.
Computer programmer .....	1,080	.20	24	2
All other technicians .....	350	.06	n.a.	n.a.
Service occupations .....	8,360	1.54	n.a.	n.a.
Janitors, porters, and cleaners .....	7,730	1.42	10	16
Detective .....	430	.08	33	1
All other service workers .....	200	.04	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	320	.06	n.a.	n.a.
All other skilled craft and kindred workers .....	190	.03	n.a.	n.a.
All other operatives and semiskilled workers .....	120	.02	n.a.	n.a.
All other laborers and unskilled workers .....	10	( <sup>3</sup> )	n.a.	n.a.
Clerical occupations .....	290,380	53.48	n.a.	n.a.
Office clerical workers, total .....	290,310	53.47	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	2,930	.54	11	8
Computer operator .....	280	.05	27	1
Keypunch operator .....	170	.03	27	1
Duplicating machine operator .....	520	.10	11	2
All other office machine operators .....	3,140	.58	n.a.	n.a.
Stenographer .....	7,140	1.31	12	7
Accounting clerk .....	4,900	.90	8	13
Bookkeeper, hand .....	12,760	2.35	5	30
File clerk .....	8,970	1.65	7	16
General office clerk .....	12,520	2.31	10	17
Library assistant .....	130	.02	25	( <sup>3</sup> )
Payroll and/or timekeeping clerk .....	1,510	.28	15	6
Receptionist .....	10,840	2.00	6	24
Secretary .....	190,210	35.03	2	93
Switchboard operator .....	2,230	.41	12	6
Switchboard operator/receptionist .....	10,300	1.90	6	28
Messenger .....	9,460	1.74	6	19
Typist .....	9,980	1.84	8	14
Clerical supervisor, office or plant .....	220	.04	22	1
All other office clerical workers .....	2,100	.39	n.a.	n.a.
Plant clerical workers, total .....	70	.01	n.a.	n.a.
Stock clerk, stockroom, warehouse or storage yard .....	60	.01	23	( <sup>3</sup> )
All other plant clerical workers .....	10	( <sup>3</sup> )	n.a.	n.a.
Sales occupations .....	90	.02	n.a.	n.a.
Sales agent, associate, and/or representative .....	60	.01	n.a.	n.a.
All other sales workers .....	30	.01	n.a.	n.a.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.



**Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981**

(SIC 83)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,163,850	100.00	--	--
Managers and officers .....	120,870	10.39	n.a.	n.a.
Professional occupations .....	313,170	26.91	n.a.	n.a.
Statistician .....	630	.05	14	2
Psychologist .....	6,170	.53	7	8
Sociologist .....	160	.01	24	( <sup>3</sup> )
Urban and regional planner .....	190	.02	40	1
All other social scientists .....	530	.05	n.a.	n.a.
Physical therapist .....	1,770	.15	11	3
Occupational therapist .....	1,790	.15	13	3
Manual arts, music, and/or recreational therapist .....	1,290	.11	18	2
All other therapists .....	2,880	.25	n.a.	n.a.
Systems analyst, electronic data processing .....	200	.02	16	1
Teacher and/or instructor, vocational education or training .....	12,240	1.05	9	7
Teacher and/or instructor, nonvocational education .....	12,090	1.04	7	7
Vocational and educational counselor .....	25,920	2.23	4	17
Teacher, elementary and/or preschool .....	84,380	7.25	3	23
All other teachers .....	11,920	1.02	n.a.	n.a.
Purchasing agent and/or buyer .....	1,020	.09	5	4
Accountants and auditors .....	8,940	.77	4	19
Budget analyst .....	2,110	.18	6	6
Director, camp .....	310	.03	23	1
Caseworker .....	57,230	4.92	3	31
Clergy .....	580	.05	14	2
Dentist .....	290	.02	15	1
Dietitian and/or nutritionist .....	5,750	.49	5	14
Lawyer .....	440	.04	26	1
Nurse, professional .....	19,010	1.63	3	19
Paralegal personnel .....	280	.02	27	( <sup>3</sup> )
Personnel and labor relations specialists .....	2,920	.25	7	7
Physician and/or surgeon .....	2,050	.18	9	4
Public relations practitioner .....	4,420	.38	7	9
Director of religious activities and/or religious education .....	210	.02	37	1
Community organization worker .....	16,750	1.44	5	14
Welfare investigator .....	180	.02	38	( <sup>3</sup> )
Group recreation worker .....	15,500	1.33	5	15
All other professional workers .....	13,020	1.12	n.a.	n.a.
Technical occupations .....	15,030	1.29	n.a.	n.a.
Computer programmer .....	360	.03	13	1
Engineering technicians .....	150	.01	34	( <sup>3</sup> )
Licensed practical nurse .....	10,500	.90	3	11
Medical record librarian .....	650	.06	7	3
Medical and dental technicians and technologists .....	2,040	.18	10	2
All other technicians .....	1,330	.11	n.a.	n.a.
Service occupations .....	381,870	32.81	n.a.	n.a.
Maid .....	18,870	1.62	3	19
House cleaner .....	6,660	.57	6	7
All other janitors, porters, and cleaners .....	12,070	1.04	n.a.	n.a.
Guards and doorkeepers .....	4,060	.35	7	5
Food service workers, total .....	72,130	6.20	n.a.	n.a.
Baker, bread and/or pastry .....	190	.02	12	1
Dining room attendant, bartender helper, or cafeteria attendant .....	5,570	.48	6	3
Kitchen helper .....	17,340	1.49	3	16
Waiter/waitress .....	7,240	.62	6	2
Counter attendant, lunchroom, coffee shop, or cafeteria .....	1,530	.13	39	1
Cook, short order and/or specialty fast foods ..	1,260	.11	14	2
Pantry, sandwich and/or coffee maker .....	500	.04	11	1
Cook, institution or cafeteria .....	33,680	2.89	2	38
All other food service workers .....	4,820	.41	n.a.	n.a.
Child care attendant .....	13,140	1.13	9	4
Supervisor, nonworking-service only .....	3,440	.30	8	5

See footnotes at end of table.



**Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 83)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Service occupations—Continued</b>				
Housekeeper .....	4,830	0.42	8	9
Nurse aide and/or orderly .....	53,980	4.64	4	11
Psychiatric aid .....	1,490	.13	16	( <sup>3</sup> )
Recreation facility attendant .....	1,640	.14	22	1
Child-care worker .....	122,980	10.57	3	27
Social service aide .....	31,030	2.67	5	19
Medical assistant .....	640	.05	31	1
Occupational therapy assistant .....	520	.04	16	1
All other service workers .....	34,390	2.95	n.a.	n.a.
<b>Maintenance, construction, repair, material handling and powerplant occupations</b>				
Mechanics and repairers, total .....	110,740	9.51	n.a.	n.a.
Mechanic, automotive .....	1,390	.12	n.a.	n.a.
Mechanic, maintenance .....	360	.03	12	1
All other mechanics and repairers .....	380	.03	10	1
All other mechanics and repairers .....	650	.06	n.a.	n.a.
Marker, classifier, wet wash assembler, detacher, and/or checker .....	700	.06	16	1
Washer, machine and/or starcher .....	1,350	.12	6	3
Laundry operator, small establishment .....	1,370	.12	7	3
Laundry presser, machine .....	480	.04	10	1
Truck driver .....	3,720	.32	7	5
Bus driver .....	7,800	.67	6	8
Carpenter .....	5,890	.51	9	5
Delivery and/or route worker .....	2,320	.20	10	3
Electrician .....	480	.04	20	1
Supervisor, nonworking .....	7,880	.68	6	9
Inspector .....	450	.04	22	1
Maintenance repairer, general utility .....	10,700	.92	4	17
Helper, trades .....	2,030	.17	13	2
Order filler .....	200	.02	19	( <sup>3</sup> )
Painter, maintenance .....	1,270	.11	12	3
Plumber and/or pipefitter .....	220	.02	19	1
Production packager, hand or machine .....	2,890	.25	19	1
Stationary boiler firer .....	150	.01	14	( <sup>3</sup> )
Stationary engineer .....	140	.01	14	( <sup>3</sup> )
Gardeners and groundskeepers .....	5,000	.43	13	6
Chauffeur .....	2,100	.18	11	3
Bus driver, school .....	9,500	.82	5	8
All other skilled craft and kindred workers .....	1,560	.13	n.a.	n.a.
All other operatives and semiskilled workers .....	10,030	.86	n.a.	n.a.
All other laborers and unskilled workers .....	31,120	2.67	n.a.	n.a.
<b>Clerical occupations</b>				
Office clerical workers, total .....	211,560	18.18	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	206,050	17.70	n.a.	n.a.
Computer operator .....	3,190	.27	6	8
Keypunch operator .....	660	.06	9	2
All other office machine operators .....	620	.05	12	1
Stenographer .....	600	.05	n.a.	n.a.
Accounting clerk .....	1,580	.14	13	2
Bookkeeper, hand .....	5,800	.50	4	13
Cashier .....	14,160	1.22	3	30
File clerk .....	1,240	.11	16	2
General office clerk .....	2,130	.18	8	4
Mail clerk .....	20,300	1.74	5	21
Order clerk .....	680	.06	10	2
Payroll and/or timekeeping clerk .....	460	.04	21	1
Personnel clerk .....	3,190	.27	5	10
Procurement clerk .....	1,430	.12	5	5
Receptionist .....	550	.05	8	2
Secretary .....	8,500	.73	4	16
Switchboard operator .....	41,140	3.53	3	47
Switchboard operator/receptionist .....	1,620	.14	7	3
Typist .....	5,630	.48	4	14
Clerical supervisor, office or plant .....	11,980	1.03	4	17
Teacher aide and/or educational assistant .....	5,120	.44	6	10
All other office clerical workers .....	67,630	5.81	3	22
	7,840	.67	n.a.	n.a.

See footnotes at end of table.



**Table 30. Social services: Employment, relative error, and percent of establishments reporting selected occupations, May 1981—Continued**

(SIC 83)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers, total .....	4,910	0.42	n.a.	n.a.
Production clerk and/or coordinator .....	1,530	.13	14	2
Shipping packer .....	660	.06	41	1
Shipping and/or receiving clerk .....	730	.06	16	1
Stock clerk, stockroom, warehouse or storage yard .....	1,160	.10	10	3
All other plant clerical workers .....	830	.07	n.a.	n.a.
Sales occupations .....	10,610	.91	n.a.	n.a.
Contribution solicitor .....	3,690	.32	16	4
All other sales agents, associates, and/or representatives .....	2,180	.19	n.a.	n.a.
Sales clerk .....	4,740	.41	10	2

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5. percent.  
n.a. = not available.

**Table 31. Museums and botanical and zoological gardens: Employment, relative error, and percent of establishments reporting selected occupations, April 1981**

(SIC 84)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	33,760	100.00	--	--
Managers and officers .....	3,660	10.84	n.a.	n.a.
Professional occupations .....	5,420	16.05	n.a.	n.a.
Biological scientist .....	100	.30	34	2
All other natural and mathematical scientists .....	70	.21	24	2
Teacher and/or instructor, nonvocational education .....	1,500	4.44	8	32
Accountants and auditors .....	240	.71	6	22
Archivist .....	310	.92	9	23
Librarian, professional .....	460	1.36	5	29
Curator, museum .....	1,400	4.15	4	55
Designer .....	380	1.13	6	23
All other professional workers .....	960	2.84	n.a.	n.a.
Technical occupations .....	1,540	4.56	n.a.	n.a.
Museum technician and/or restorer .....	850	2.52	6	32
Technical assistant, library .....	230	.68	8	12
All other technicians .....	460	1.36	n.a.	n.a.
Service occupations .....	10,810	32.02	n.a.	n.a.
Janitors, porters, and cleaners .....	1,920	5.69	4	60
Guards and doorkeepers .....	3,410	10.10	9	38
Food service workers .....	1,120	3.32	6	11
Supervisor, nonworking-service only .....	100	.30	40	2
Guide, sightseeing or establishment .....	3,850	11.40	7	34
All other service workers .....	410	1.21	n.a.	n.a.
Maintenance, construction, repair, material handling and powerplant occupations .....	4,390	13.00	n.a.	n.a.
Carpenter .....	310	.92	7	18
Maintenance repairer, general utility .....	1,210	3.58	4	39
Helper, trades .....	260	.77	6	12
Painter, maintenance .....	140	.41	9	6
Animal caretaker .....	800	2.37	4	12
Gardeners and groundskeepers .....	1,340	3.97	5	33
All other skilled craft and kindred workers .....	180	.53	n.a.	n.a.
All other operatives and semiskilled workers .....	100	.30	n.a.	n.a.
All other laborers and unskilled workers .....	50	.15	n.a.	n.a.
Clerical occupations .....	6,000	17.77	n.a.	n.a.
Office clerical workers, total .....	5,900	17.48	n.a.	n.a.
Stenographer .....	120	.36	10	5
Accounting clerk .....	240	.71	9	17
Bookkeeper, hand .....	390	1.16	5	38
Cashier .....	800	2.37	11	19
General office clerk .....	970	2.87	7	33
Library assistant .....	200	.59	10	11
Payroll and/or timekeeping clerk .....	80	.24	7	9
Receptionist .....	410	1.21	7	26
Secretary .....	1,540	4.56	4	58
Switchboard operator .....	100	.30	15	8
Switchboard operator/receptionist .....	230	.68	6	20
Typist .....	320	.95	6	17
All other office clerical workers .....	500	1.48	n.a.	n.a.
Plant clerical workers, total .....	100	.30	n.a.	n.a.
Shipping and/or receiving clerk .....	60	.18	11	2
All other plant clerical workers .....	40	.12	n.a.	n.a.
Sales occupations .....	1,940	5.75	n.a.	n.a.
Sales agent, associate, and/or representative .....	370	1.10	8	20
Sales clerk .....	1,570	4.65	4	36

<sup>1</sup> 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.

<sup>2</sup> 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.



**Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1981**

(SIC 86, except 866)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	643,390	100.00	--	--
Managers and officers .....	158,690	24.66	n.a.	n.a.
Professional occupations .....	122,430	19.03	n.a.	n.a.
Engineers, total .....	560	.09	n.a.	n.a.
Electrical and electronic engineers .....	160	.02	26	( <sup>3</sup> )
All other engineers .....	400	.06	n.a.	n.a.
Statistician .....	480	.07	14	1
All other natural and mathematical scientists .....	200	.03	18	( <sup>3</sup> )
Economist .....	230	.04	15	( <sup>3</sup> )
All other social scientists .....	260	.04	n.a.	n.a.
Systems analyst, electronic data processing .....	440	.07	9	1
Teacher and/or instructor, vocational education or training .....	3,450	.54	10	2
Teacher and/or instructor, nonvocational education .....	10,590	1.65	6	4
Teacher, elementary and/or preschool .....	1,700	.26	8	1
All other teachers .....	2,000	.31	n.a.	n.a.
Purchasing agent and/or buyer .....	490	.08	5	2
Accountants and auditors .....	7,340	1.14	4	13
Director, camp .....	590	.09	9	2
Caseworker .....	4,010	.62	8	2
Dietitian and/or nutritionist .....	320	.05	25	1
Writer and/or editor .....	5,890	.92	4	8
Law clerk .....	180	.03	13	( <sup>3</sup> )
Lawyer .....	1,150	.18	9	1
Librarian, professional .....	530	.08	13	1
Curator, museum .....	280	.04	25	( <sup>3</sup> )
Musician, instrumental .....	470	.07	28	( <sup>3</sup> )
Nurse, professional .....	860	.13	13	1
Paralegal personnel .....	290	.05	21	( <sup>3</sup> )
Personnel and labor relations specialists .....	24,140	3.75	5	9
Physician and/or surgeon .....	1,160	.18	25	( <sup>3</sup> )
Public relations practitioner .....	6,780	1.05	6	10
Sports instructor .....	5,330	.83	6	2
Veterinarian .....	90	.01	32	( <sup>3</sup> )
Community organization worker .....	7,480	1.16	6	5
Group recreation worker .....	25,460	3.96	4	7
All other professional workers .....	9,680	1.50	n.a.	n.a.
Technical occupations .....	3,220	.50	n.a.	n.a.
Computer programmer .....	830	.13	7	2
Engineering technicians, total .....	410	.06	n.a.	n.a.
Drafter .....	150	.02	32	( <sup>3</sup> )
Electrical and electronic technicians .....	80	.01	19	( <sup>3</sup> )
All other engineering technicians .....	180	.03	n.a.	n.a.
Science technicians .....	280	.04	27	( <sup>3</sup> )
Licensed practical nurse .....	350	.05	19	( <sup>3</sup> )
Technical assistant, library .....	130	.02	14	( <sup>3</sup> )
Medical and dental technicians and technologists .....	190	.03	29	( <sup>3</sup> )
All other technicians .....	1,030	.16	n.a.	n.a.
Service occupations .....	160,840	25.00	n.a.	n.a.
Maid .....	5,730	.89	5	7
All other janitors, porters, and cleaners .....	21,550	3.35	n.a.	n.a.
Guards and doorkeepers .....	5,450	.85	7	5
Food service workers, total .....	92,500	14.38	n.a.	n.a.
Bartender .....	33,840	5.26	3	16
Dining room attendant, bartender helper, or cafeteria attendant .....	7,620	1.18	5	5
Host/hostess, restaurant, lounge or coffee shop .....	650	.10	6	1
Kitchen helper .....	11,890	1.85	5	8
Waiter/waitress .....	26,190	4.07	3	11
Cook, short order and/or specialty fast foods .....	1,660	.26	9	2
Cook, restaurant .....	6,660	1.04	4	7
Cook, institution or cafeteria .....	2,600	.40	7	3
All other food service workers .....	1,390	.22	n.a.	n.a.
Child care attendant .....	870	.14	15	1

See footnotes at end of table.



**Table 32. Membership organizations, except religious organizations: Employment, relative error, and percent of establishments reporting selected occupations, April 1981—Continued**

(SIC 86, except 866)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Service occupations—Continued</b>				
Supervisor, nonworking-service only .....	900	0.14	7	1
Nurse aide and/or orderly .....	400	.06	23	( <sup>3</sup> )
Recreation facility attendant .....	5,300	.82	7	3
Game operators, ride operators and concession workers .....	2,870	.45	13	1
Child-care worker .....	5,370	.83	6	3
Lifeguard .....	6,720	1.04	5	3
Checkroom and locker-room attendants .....	1,650	.26	7	1
Social service aide .....	3,060	.48	9	2
All other service workers .....	8,470	1.32	n.a.	n.a.
<b>Maintenance, construction, repair, material handling and powerplant occupations</b>				
Mechanics and repairers, total .....	23,910	3.72	n.a.	n.a.
Mechanic, automotive .....	670	.10	n.a.	n.a.
Mechanic, maintenance .....	240	.04	19	( <sup>3</sup> )
All other mechanics and repairers .....	310	.05	39	( <sup>3</sup> )
Truck driver .....	120	.02	n.a.	n.a.
Bus driver .....	620	.10	20	( <sup>3</sup> )
Carpenter .....	460	.07	14	1
Delivery and/or route worker .....	500	.08	12	1
Electrician .....	320	.05	23	( <sup>3</sup> )
Supervisor, nonworking .....	230	.04	25	( <sup>3</sup> )
Inspector .....	740	.12	15	1
Maintenance repairer, general utility .....	370	.06	39	( <sup>3</sup> )
Helper, trades .....	6,110	.95	6	8
Order filler .....	630	.10	22	( <sup>3</sup> )
Painter, maintenance .....	100	.02	21	( <sup>3</sup> )
Plumber and/or pipefitter .....	560	.09	9	1
Press operator and/or plate printer .....	80	.01	12	( <sup>3</sup> )
Stationary engineer .....	820	.13	8	2
Animal caretaker .....	230	.04	10	( <sup>3</sup> )
Chauffeur .....	3,940	.61	10	1
Bus driver, school .....	290	.05	18	( <sup>3</sup> )
All other skilled craft and kindred workers .....	500	.08	16	( <sup>3</sup> )
All other operatives and semiskilled workers .....	1,090	.17	n.a.	n.a.
All other laborers and unskilled workers .....	1,920	.30	n.a.	n.a.
All other laborers and unskilled workers .....	3,730	.58	n.a.	n.a.
<b>Clerical occupations</b>				
Office clerical workers, total .....	164,060	25.50	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	160,100	24.88	n.a.	n.a.
Computer operator .....	270	.04	12	1
Keypunch operator .....	1,420	.22	11	3
Peripheral EDP equipment operator .....	1,440	.22	7	2
Duplicating machine operator .....	380	.06	11	1
All other office machine operators .....	670	.10	6	2
Stenographer .....	770	.12	n.a.	n.a.
Accounting clerk .....	4,080	.63	6	5
Bookkeeper, hand .....	7,170	1.11	4	11
Cashier .....	12,810	1.99	3	26
File clerk .....	2,260	.35	7	2
General office clerk .....	4,080	.63	6	6
Library assistant .....	28,950	4.50	3	23
Mail clerk .....	200	.03	15	( <sup>3</sup> )
Order clerk .....	3,460	.54	4	6
Payroll and/or timekeeping clerk .....	600	.09	18	1
Personnel clerk .....	2,470	.38	6	6
Receptionist .....	410	.06	7	1
Secretary .....	6,610	1.03	4	11
Statistical clerk .....	44,210	6.87	2	43
Switchboard operator .....	400	.06	16	1
Switchboard operator/receptionist .....	1,680	.26	9	3
Travel counselor, auto club .....	5,660	.88	4	11
Travel clerk .....	5,270	.82	7	2
Typist .....	1,280	.20	13	1
Clerical supervisor, office or plant .....	13,400	2.08	4	15
Teacher aide and/or educational assistant .....	2,250	.35	7	3
All other office clerical workers .....	2,470	.38	8	2
All other office clerical workers .....	5,430	.84	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 1981—Continued**

(SIC 86, except 866)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant clerical workers, total .....	3,960	0.62	n.a.	n.a.
Production clerk and/or coordinator .....	240	.04	16	( <sup>3</sup> )
Shipping packer .....	290	.05	28	( <sup>3</sup> )
Shipping and/or receiving clerk .....	300	.05	13	1
Stock clerk, stockroom, warehouse or storage yard .....	740	.12	8	1
Dispatcher, vehicle, service or work .....	1,680	.26	12	1
All other plant clerical workers .....	710	.11	n.a.	n.a.
Sales occupations .....	10,240	1.59	n.a.	n.a.
Contribution solicitor .....	2,400	.37	11	2
All other sales agents, associates, and/or representatives .....	6,890	1.07	n.a.	n.a.
Sales clerk .....	950	.15	11	1

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5. percent.  
n.a. = not available.

**Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981**

(SIC 89)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,049,650	100.00	--	--
Managers and officers .....	119,820	11.42	n.a.	n.a.
Professional occupations .....	421,560	40.16	n.a.	n.a.
Engineers, total .....	131,490	12.53	n.a.	n.a.
Aeronautical engineer .....	1,780	.17	25	1
Agricultural engineer .....	380	.04	25	( <sup>3</sup> )
Chemical engineer .....	5,240	.50	12	3
Civil engineer .....	49,310	4.70	4	21
Electrical and electronic engineers .....	25,890	2.47	6	12
Industrial engineer .....	2,580	.25	19	2
Marine engineer .....	1,490	.14	32	( <sup>3</sup> )
Mechanical engineer .....	30,310	2.89	6	12
Metallurgists and metallurgical engineers .....	750	.07	20	( <sup>3</sup> )
Mining engineer .....	440	.04	30	( <sup>3</sup> )
Petroleum engineer .....	1,010	.10	29	( <sup>3</sup> )
Safety engineer .....	830	.08	36	1
Traffic engineer .....	640	.06	28	1
Nuclear engineer .....	1,740	.17	27	1
All other engineers .....	9,100	.87	n.a.	n.a.
Actuary .....	1,740	.17	12	1
Mathematician .....	1,000	.10	17	1
Statistician .....	550	.05	16	1
All other mathematical scientists .....	370	.04	n.a.	n.a.
Chemist .....	2,310	.22	13	2
Geologists and geophysicists .....	2,380	.23	15	2
Meteorologist .....	1,070	.10	24	1
Oceanographer .....	110	.01	41	( <sup>3</sup> )
Physicist .....	2,620	.25	23	1
All other physical scientists .....	1,480	.14	n.a.	n.a.
Biological scientist .....	3,540	.34	14	1
Medical scientist .....	1,080	.10	18	1
All other life scientists .....	950	.09	n.a.	n.a.
Economist .....	1,060	.10	13	1
Market research analyst .....	980	.09	26	1
Psychologist .....	1,200	.11	25	1
Sociologist .....	650	.06	27	( <sup>3</sup> )
Urban and regional planner .....	1,060	.10	15	2
All other social scientists .....	1,010	.10	n.a.	n.a.
Systems analyst, business .....	5,040	.48	9	5
Systems analyst, scientific and technical .....	4,450	.42	11	3
Teacher, elementary and/or preschool .....	320	.03	36	( <sup>3</sup> )
All other teachers .....	3,360	.32	n.a.	n.a.
Photographer .....	560	.05	14	2
Purchasing agent and/or buyer .....	2,590	.25	7	4
Accountants and auditors .....	144,800	13.80	2	45
Landscape architect .....	2,440	.23	13	3
Architect .....	36,480	3.48	5	14
Budget analyst .....	1,500	.14	13	2
Caseworker .....	690	.07	25	1
Commercial artist .....	3,210	.31	11	4
Cost estimator, engineering .....	4,620	.44	9	6
Writer and/or editor .....	5,030	.48	8	5
Lawyer .....	910	.09	16	2
Librarian, professional .....	1,360	.13	8	4
Nurse, professional .....	750	.07	24	1
Personnel and labor relations specialists .....	2,450	.23	6	5
Designer .....	10,360	.99	10	5
Tax preparer .....	16,080	1.53	6	12
All other professional workers .....	17,910	1.71	n.a.	n.a.
Technical occupations .....	185,670	17.69	n.a.	n.a.
Computer programmer, business .....	4,020	.38	8	6
Computer programmer, scientific and technical .....	4,370	.42	10	4
Engineering technicians, total .....	163,460	15.57	n.a.	n.a.
Drafter .....	99,660	9.49	3	37
Electrical and electronic technicians .....	7,910	.75	10	4

See footnotes at end of table.



**Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 89)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Technical occupations—Continued</b>				
Surveyor .....	18,680	1.78	6	16
Mechanical engineering technician .....	4,690	.45	12	2
Specification writer, engineering .....	1,240	.12	12	2
Industrial engineering technician .....	170	.02	31	( <sup>3</sup> )
Civil engineering technician .....	20,250	1.93	6	14
All other engineering technicians .....	10,860	1.03	n.a.	n.a.
Physical science technician .....	2,180	.21	14	1
Biological science technician .....	2,700	.26	14	1
All other science technicians .....	1,980	.19	n.a.	n.a.
Mathematical technician .....	480	.05	27	( <sup>3</sup> )
Technical assistant, library .....	580	.06	15	1
All other technicians .....	5,900	.56	n.a.	n.a.
<b>Service occupations</b>				
Janitors, porters, and cleaners .....	7,280	.69	7	10
Guards and doorkeepers .....	1,660	.16	18	1
Food service workers .....	1,020	.10	20	1
Supervisor, nonworking—service only .....	460	.04	24	1
Social service aide .....	840	.08	45	( <sup>3</sup> )
All other service workers .....	1,930	.18	n.a.	n.a.
<b>Maintenance, construction, repair, material handling and powerplant occupations</b>				
Mechanics and repairers, total .....	52,950	5.04	n.a.	n.a.
Mechanic, automotive .....	2,440	.23	n.a.	n.a.
Mechanic, maintenance .....	430	.04	24	1
All other mechanics and repairers .....	1,230	.12	26	1
Truck driver .....	780	.07	n.a.	n.a.
Blueprinting machine operator .....	370	.04	35	1
Carpenter .....	1,060	.10	9	3
Delivery and/or route worker .....	740	.07	31	1
Electrician .....	210	.02	26	1
Supervisor, nonworking .....	1,200	.11	32	1
Inspector .....	2,230	.21	14	2
Machinist .....	2,290	.22	14	2
Maintenance repairer, general utility .....	1,310	.12	23	1
Helper, trades .....	1,170	.11	10	2
Painter, maintenance .....	2,240	.21	24	1
Plumber and/or pipefitter .....	240	.02	23	( <sup>3</sup> )
Press operator and/or plate printer .....	480	.05	24	( <sup>3</sup> )
Stationary engineer .....	860	.08	20	1
Animal caretaker .....	240	.02	38	( <sup>3</sup> )
Welder and/or flamecutter .....	950	.09	21	( <sup>3</sup> )
Surveyor helper .....	1,090	.10	24	1
All other skilled craft and kindred workers .....	23,180	2.21	6	14
All other operatives and semiskilled workers .....	3,440	.33	n.a.	n.a.
All other laborers and unskilled workers .....	4,350	.41	n.a.	n.a.
All other laborers and unskilled workers .....	2,860	.27	n.a.	n.a.
<b>Clerical occupations</b>				
Office clerical workers, total .....	250,620	23.88	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	247,420	23.57	n.a.	n.a.
Computer operator .....	3,220	.31	13	3
Keypunch operator .....	12,450	1.19	5	17
Peripheral EDP equipment operator .....	7,740	.74	8	9
Duplicating machine operator .....	1,050	.10	12	2
All other office machine operators .....	1,800	.17	6	4
Stenographer .....	2,020	.19	n.a.	n.a.
Accounting clerk .....	4,700	.45	7	4
Actuarial clerk .....	20,670	1.97	4	23
Bookkeeper, hand .....	1,040	.10	14	1
Cashier .....	20,680	1.97	4	26
File clerk .....	380	.04	28	1
General office clerk .....	3,620	.34	9	6
Library assistant .....	29,940	2.85	4	27
Mail clerk .....	760	.07	7	2
Order clerk .....	2,760	.26	5	7
Order clerk .....	970	.09	24	1

See footnotes at end of table.

**Table 33. Miscellaneous services: Employment, relative error, and percent of establishments reporting selected occupations, June 1981—Continued**

(SIC 89)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Office clerical workers.—Continued				
Payroll and/or timekeeping clerk .....	3,560	0.34	8	9
Personnel clerk .....	1,190	.11	6	4
Procurement clerk .....	510	.05	15	1
Receptionist .....	10,580	1.01	5	18
Secretary .....	67,180	6.40	2	59
Statistical clerk .....	1,730	.16	27	1
Switchboard operator .....	1,700	.16	12	4
Switchboard operator/receptionist .....	7,930	.76	4	20
Messenger .....	2,040	.19	6	5
Typist .....	23,700	2.26	3	29
Clerical supervisor, office or plant .....	4,300	.41	6	7
Proofreader, clerical .....	1,280	.12	9	2
All other office clerical workers .....	7,920	.75	n.a.	n.a.
Plant clerical workers, total .....	3,200	.30	n.a.	n.a.
Production clerk and/or coordinator .....	980	.09	13	1
Shipping packer .....	270	.03	17	( <sup>3</sup> )
Shipping and/or receiving clerk .....	420	.04	12	1
Stock clerk, stockroom, warehouse or storage yard .....	1,330	.13	11	2
All other plant clerical workers .....	200	.02	n.a.	n.a.
Sales occupations .....	5,840	.56	n.a.	n.a.
Sales agent, associate, and/or representative .....	5,400	.51	9	6
Sales clerk .....	440	.04	38	( <sup>3</sup> )

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Less than 0.5 percent.  
n.a. = not available.



# Appendix A. Survey Methods and Reliability of Estimates

## Scope of survey

The survey covered selected 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, 1981, depending on the SIC of the sampled unit as shown below:

<i>SIC</i>	<i>Reference date</i>
10 .....	May 12
11 and 12 .....	June 12
13 through 17 .....	May 12
60 and 61 .....	May 12
62 .....	June 12
63 through 66 .....	May 12
67 .....	June 12
70 .....	May 12
72 .....	May 12
73 .....	June 12
75 .....	May 12
76 .....	June 12
78 and 79 .....	April 12
80 (except 806) .....	May 12
81 .....	June 12
83 .....	May 12
84 .....	April 12
86 (except 866) .....	April 12
89 .....	June 12

The survey covered all 50 States and the District of Columbia.

## 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 (excluding government units) in the specified SIC's as reported to State unemployment insurance agencies. Because each cooperating State selected its own sample, the reference date of the sampling frame varied depending on when the last updates to the frame were made and when sampling took place. The reference date for

the frame used for sampling in the two supplemental States was the first quarter of 1980.

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

<i>Size class</i>	<i>Employees</i>
1 .....	1-3
2 .....	4-9
3 .....	10-19
4 .....	20-49
5 .....	50-99
6 .....	100-249
7 .....	250-499
8 .....	500-999
9 .....	1,000 and over

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. 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 to 15 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 for a set of typical occupations. This SIC sample size was allocated to the size classes in proportion to size class employment. The sample was selected systematically with equal probability within each State/SIC size class cell.

States were given the option of two target relative errors in designing their samples. Some States varied the target relative error by SIC to allow reductions in sample size for cost reasons.

The sample size for the two supplemental States was developed by first determining the sample size required for national estimates in each two-digit SIC with a target relative error of 10 percent at one standard deviation. This was done by averaging CV's and occupational rates for a set of occupations from the previous survey. Establishments with 1,000 or more employees were included with certainty. This national SIC sample size was then allocated to the size class cells of the two non-cooperating States in proportion to employment.

The above allocations resulted in a total initial sample size of 343,648 reporting units.



## Response

There were 328,989 final eligible units in the sample (i.e., excluding establishments that were out of business, out of scope, etc.). Usable responses were obtained from 239,598 units, producing a response rate of 72.8 percent based on units and 72.6 percent based on weighted employment. Subsequent to the national estimates, States received additional data to prepare State 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 three-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:

$$\hat{p} = \sum_i \left[ \frac{\sum_j \sum_k w_{ijk} P_{ijk}}{\sum_j \sum_k w_{ijk} e_{ijk}} \cdot M_i \right]$$

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:

$$V(\hat{p}) = \sum_i \sum_j \frac{N_{ij}^2 (1 - f_{ij})}{n_{ij}} \cdot A_{ij}$$

$$A_{ij} = S_{p_{ij}}^2 + R_i^2 S_{e_{ij}}^2 - 2R_i K_{ij} S_{p_{ij}} S_{e_{ij}}$$

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
- $S_{p_{ij}}$  = standard deviation of  $p$  within the  $i$ -th industry and  $j$ -th size class
- $S_{e_{ij}}$  = 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 three-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 ob-

tained 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, 1980

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 3.8 million in 1980, representing about 4 percent of all nonagricultural wage and salary employment in the Nation. (In April 1981, hospital employment was approximately 4 million, an increase of 5 percent from April 1980.)

The two largest occupational groups in hospitals in 1980 were professional workers and service workers, with about 1.1 million persons each, accounting for 58 percent of total employment. Sixty-nine percent of the professional workers were nurses; they constituted 20 percent of total hospital employment. Nurse aide or

orderly was the most populous job in the service worker occupational group, accounting for 40 percent of service worker employment and 12 percent of total hospital employment.

Technical workers, numbering 681,840 or 18 percent of hospital workers, were the third largest occupational group. Licensed practical nurses accounted for 45 percent of these.

Clerical workers constituted 16 percent of hospital employment, with 612,370 persons. The majority of these worked in office occupations; the most populous was secretary.

Maintenance, construction, repair, material handling, and powerplant workers accounted for 4 percent of employment in hospitals. The largest occupation in this major group was maintenance repairer, general utility, numbering 23,630.

The remaining occupational employment was distributed as follows: Managers and officers, 129,660 or 3 percent; and sales workers, 2,150 or less than 1 percent.



**Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1980**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	3,831,740	100.00	--	--
Managers and officers .....	129,660	3.38	n.a.	n.a.
Professional occupations .....	1,127,430	29.42	n.a.	n.a.
Engineers, total .....	4,440	.12	n.a.	n.a.
Civil engineer .....	500	.01	18	2
Electrical and electronic engineers .....	910	.02	10	5
Industrial engineer .....	840	.02	5	7
Mechanical engineer .....	1,190	.03	6	7
All other engineers .....	1,000	.03	n.a.	n.a.
Physical scientists, total .....	1,160	.03	n.a.	n.a.
Chemist .....	600	.02	13	2
All other physical scientists .....	560	.01	n.a.	n.a.
Life scientists, total .....	7,000	.18	n.a.	n.a.
Biological scientist .....	3,580	.09	23	4
Medical scientist .....	3,030	.08	8	13
All other life scientists .....	390	.01	n.a.	n.a.
Social scientists, total .....	11,650	.30	n.a.	n.a.
Psychologist .....	8,660	.23	4	16
Sociologist .....	970	.03	19	2
All other social scientists .....	2,020	.05	n.a.	n.a.
Therapists, total .....	82,520	2.15	n.a.	n.a.
Physical therapist .....	17,040	.44	2	57
Respiratory therapist .....	38,080	.99	2	58
Occupational therapist .....	9,510	.25	3	28
Manual arts, music, and/or recreational therapist .....	7,810	.20	5	19
All other therapists .....	10,080	.26	n.a.	n.a.
Statistician .....	430	.01	11	2
Systems analyst, electronic data processing .....	4,140	.11	5	16
Podiatrist .....	710	.02	10	3
Speech pathologist and/or audiologist .....	3,460	.09	3	15
Purchasing agent and/or buyer .....	7,880	.21	2	67
Accountants and auditors .....	11,320	.30	2	54
Caseworker .....	33,890	.88	3	56
Clergy .....	3,900	.10	3	21
Dentist .....	2,750	.07	6	9
Dietitian and/or nutritionist .....	15,240	.40	3	69
Librarian, professional .....	6,610	.17	2	40
Nurse, professional .....	780,630	20.37	( <sup>3</sup> )	98
Personnel and labor relations specialists .....	8,160	.21	3	45
Pharmacist .....	27,670	.72	2	73
Physician and/or surgeon .....	92,470	2.41	( <sup>3</sup> )	36
All other professional workers .....	21,400	.56	n.a.	n.a.
Technical occupations .....	681,840	17.79	n.a.	n.a.
Computer programmer .....	3,350	.09	n.a.	15
Engineering technicians, total .....	2,540	.07	n.a.	n.a.
Electrical and electronic technicians .....	1,430	.04	7	6
All other engineering technicians .....	1,110	.03	n.a.	n.a.
Science technicians, total .....	4,190	.11	n.a.	n.a.
Biological science technician .....	3,610	.09	15	2
All other science technicians .....	580	.02	n.a.	n.a.
Dental assistant .....	1,970	.05	8	7
Licensed practical nurse .....	306,270	7.99	( <sup>3</sup> )	94
Physician's assistant .....	3,950	.10	12	9
Surgical technician .....	31,360	.82	3	62
Radiologic technician .....	43,330	1.13	1	74
Pharmacy helper .....	24,430	.64	2	57
Medical record librarian .....	12,470	.33	2	82
Dental hygienist .....	820	.02	11	5
Medical laboratory technologist .....	63,350	1.65	3	74
Biochemistry technologist .....	9,940	.26	4	17
Microbiology technologist .....	7,020	.18	3	22
Cytotechnologist .....	2,600	.07	3	16
Histologic technologist .....	5,080	.13	3	27
Medical laboratory technician .....	32,790	.86	2	65
Electrocardiograph technician .....	15,060	.39	2	49
Electroencephalograph technician .....	4,420	.12	2	28
Dietetic technician .....	6,290	.16	3	31
Blood bank technology specialist .....	12,020	.31	3	27

See footnotes at end of table.

**Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1980—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Technical occupations—Continued</b>				
Physical therapy assistant .....	17,020	0.44	2	53
Radiologic technologist and/or nuclear medical technologist .....	27,910	.73	4	52
All other medical and dental technologists and technicians .....	30,910	.81	n.a.	n.a.
All other technicians .....	12,750	.33	n.a.	n.a.
<b>Service occupations</b>				
Maid .....	1,112,410	29.03	n.a.	n.a.
All other janitors, porters, and cleaners .....	144,570	3.77	( <sup>3</sup> )	82
Guards and doorkeepers .....	53,300	1.39	n.a.	n.a.
Food service workers, total .....	28,150	.73	2	36
Baker, bread and/or pastry .....	229,370	5.99	n.a.	n.a.
Dining room attendant, bartender helper, or cafeteria attendant .....	2,410	.06	2	19
Butcher and/or meat cutter .....	19,700	.51	4	17
Kitchen helper .....	390	.01	5	3
Waiter/waitress .....	74,050	1.93	1	70
Counter attendant, lunchroom, coffee shop, or cafeteria .....	6,960	.18	6	6
Cook, short order and/or specialty fast foods ....	19,070	.50	3	27
Pantry, sandwich and/or coffee maker .....	3,080	.08	4	11
Cook, institution or cafeteria .....	5,830	.15	4	17
All other food service workers .....	36,680	.96	2	89
Supervisor, nonworking—service only .....	61,200	1.60	n.a.	n.a.
Housekeeper .....	17,510	.46	2	49
Nurse aide and/or orderly .....	22,950	.60	3	70
Psychiatric aid .....	452,210	11.80	( <sup>3</sup> )	91
Orthopedic—cast specialist .....	116,980	3.05	( <sup>3</sup> )	16
Child—care worker .....	1,270	.03	5	7
Social service aide .....	6,150	.16	12	5
Medical assistant .....	5,080	.13	5	18
Occupational therapy assistant .....	4,920	.13	6	12
All other service workers .....	4,670	.12	4	16
	25,280	.66	n.a.	n.a.
<b>Production, maintenance, construction, repair, material handling and powerplant occupations</b>				
Mechanics and repairers, total .....	165,880	4.33	n.a.	n.a.
Mechanic, automotive .....	12,450	.32	n.a.	n.a.
Electromedical equipment repairer .....	800	.02	6	5
Mechanic, maintenance .....	3,270	.09	3	16
All other mechanics and repairers .....	6,470	.17	3	16
Washer, machine and/or starcher .....	1,910	.05	n.a.	n.a.
Presser, machine .....	12,520	.33	3	33
Laundry presser, machine .....	1,100	.03	7	3
Truck driver .....	20,610	.54	2	31
Carpenter .....	3,310	.09	4	11
Delivery and/or route worker .....	6,500	.17	2	30
Electrician .....	1,320	.03	7	6
Supervisor, nonworking .....	6,120	.16	3	30
Machinist .....	6,750	.18	4	26
Maintenance repairer, general utility .....	1,060	.03	6	5
Helper, trades .....	23,630	.62	3	67
Order filler .....	5,520	.14	3	19
Painter, maintenance .....	1,440	.04	8	5
Plumber and/or pipefitter .....	7,120	.19	2	35
Custom sewer .....	4,140	.11	3	20
Stationary boiler firer .....	2,240	.06	3	16
Stationary engineer .....	5,000	.13	2	14
Welder and/or flamecutter .....	8,520	.22	3	20
Gardeners and groundskeepers .....	440	.01	10	4
Ambulance driver and/or attendant .....	7,160	.19	3	38
All other skilled craft and kindred workers .....	6,810	.18	11	11
All other operatives and semiskilled workers .....	4,480	.12	n.a.	n.a.
All other laborers and unskilled workers .....	6,560	.17	n.a.	n.a.
	11,080	.29	n.a.	n.a.
<b>Clerical occupations</b>				
Office clerical workers, total .....	612,370	15.98	n.a.	n.a.
Bookkeeping and/or billing machine operator ..	578,130	15.09	n.a.	n.a.
	5,050	.13	3	22

See footnotes at end of table.



**Table B-1. Hospitals: Employment, relative error, and percent of establishments reporting selected occupations, April 1980—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
<b>Office clerical workers,—Continued</b>				
Computer operator .....	7,160	0.19	4	30
Keypunch operator .....	11,810	.31	2	36
Peripheral EDP equipment operator .....	1,430	.04	5	6
All other office machine operators .....	2,470	.06	n.a.	n.a.
Stenographer .....	25,410	.66	3	41
Accounting clerk .....	17,500	.46	2	53
Bookkeeper, hand .....	5,210	.14	3	37
Cashier .....	17,560	.46	2	56
File clerk .....	35,880	.94	4	53
General office clerk .....	59,420	1.55	3	46
Library assistant .....	2,590	.07	4	14
Insurance clerk, medical .....	41,190	1.07	2	82
Order clerk .....	4,170	.11	4	16
Payroll and/or timekeeping clerk .....	8,310	.22	2	58
Personnel clerk .....	6,950	.18	2	47
Procurement clerk .....	5,110	.13	2	38
Receptionist .....	35,600	.93	3	47
Secretary .....	84,060	2.19	3	76
Statistical clerk .....	10,930	.29	3	26
Switchboard operator .....	25,130	.66	1	49
Switchboard operator/receptionist .....	12,900	.34	4	40
Typist .....	50,140	1.31	3	47
Clerical supervisor, office or plant .....	20,450	.53	3	42
All other office clerical workers .....	81,700	2.13	n.a.	n.a.
<b>Plant clerical workers, total .....</b>	<b>34,240</b>	<b>.89</b>	<b>n.a.</b>	<b>n.a.</b>
Production clerk and/or coordinator .....	1,340	.03	8	4
Shipping packer .....	1,230	.03	9	4
Shipping and/or receiving clerk .....	4,400	.11	2	23
Stock clerk, stockroom, warehouse or storage yard .....	16,680	.44	3	45
Dispatcher, police, fire and ambulance .....	1,280	.03	8	3
All other plant clerical workers .....	9,310	.24	n.a.	n.a.
<b>Sales occupations .....</b>	<b>2,150</b>	<b>.06</b>	<b>n.a.</b>	<b>n.a.</b>
Sales agent, associate, and/or representative .....	430	.01	24	1
Sales clerk .....	1,720	.04	6	5

<sup>1</sup> 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.

<sup>2</sup> The 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.

<sup>3</sup> Less than 0.5 percent.

n.a. = not available.

# Appendix C. 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 C-1. OES survey data available by State and year**

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



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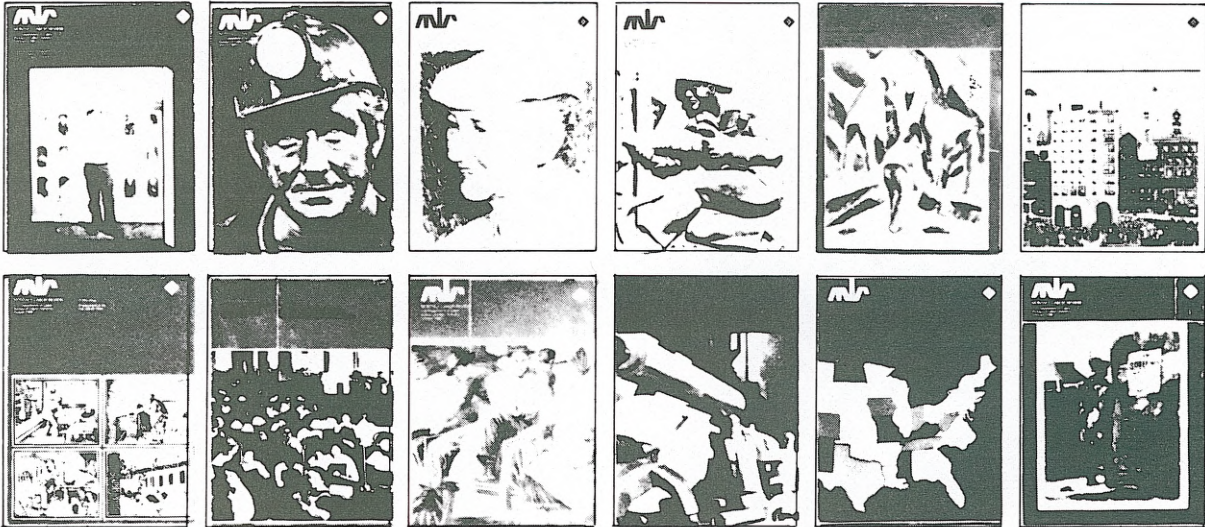
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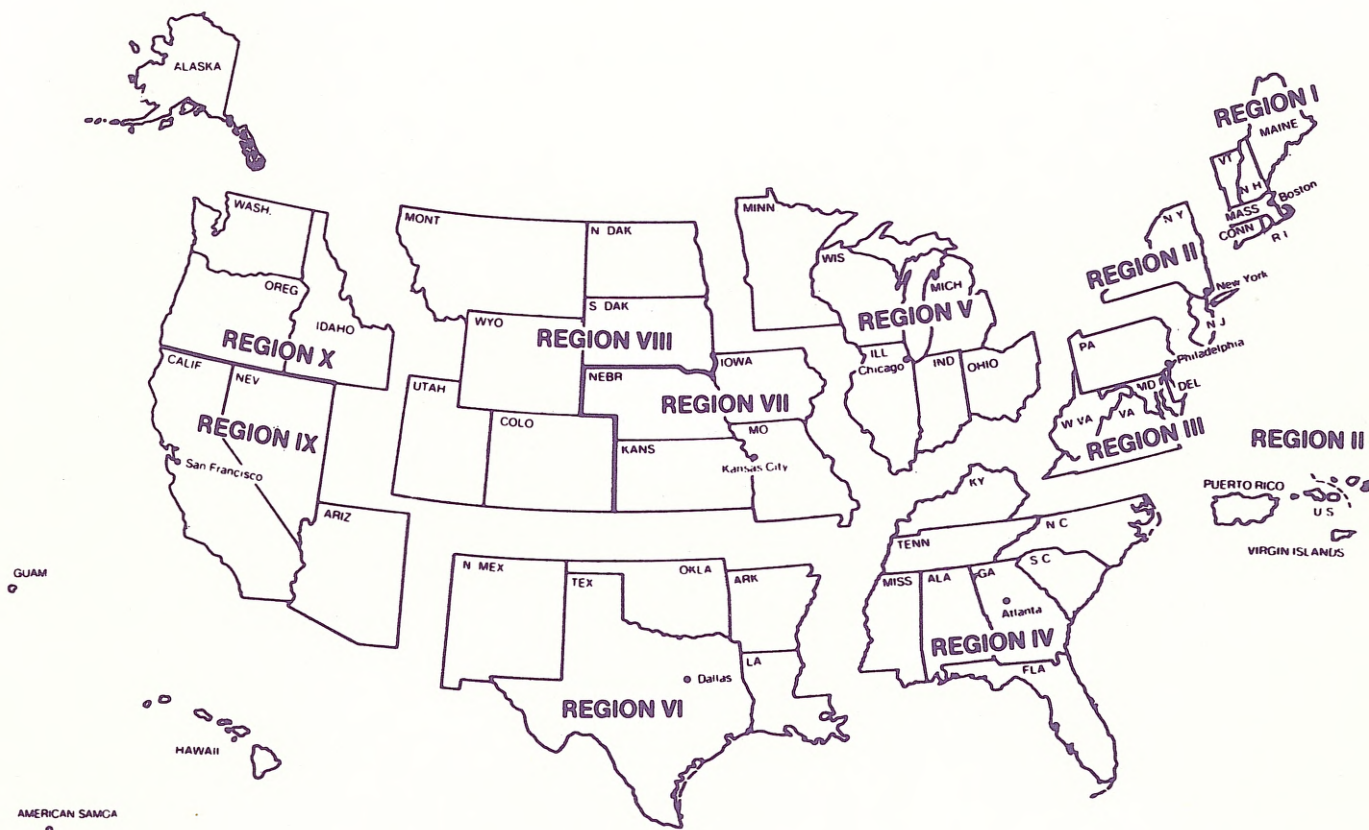
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