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# Occupational Employment in Selected Nonmanufacturing Industries



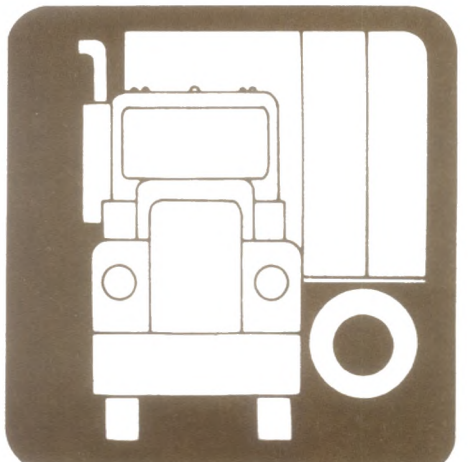
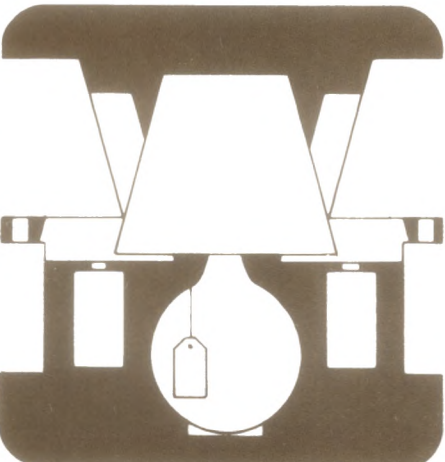
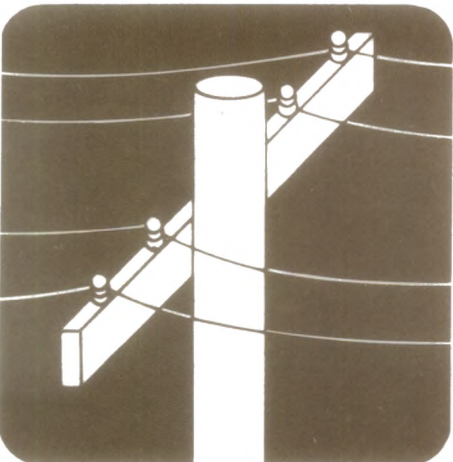
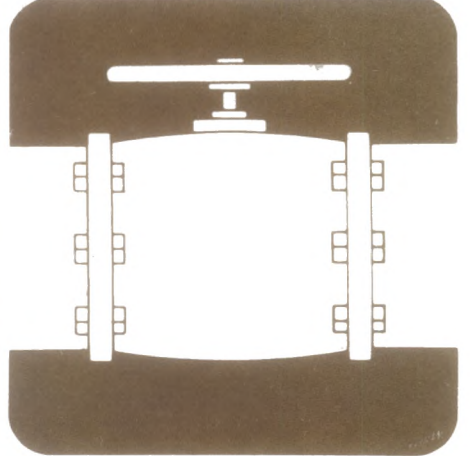
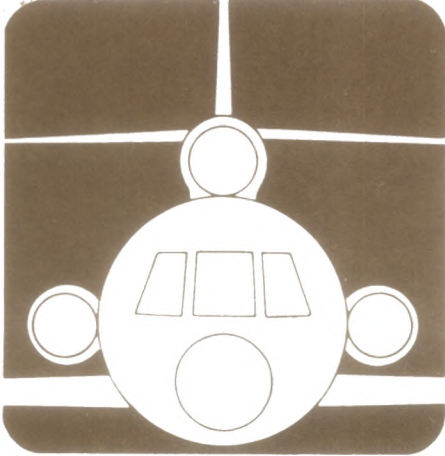
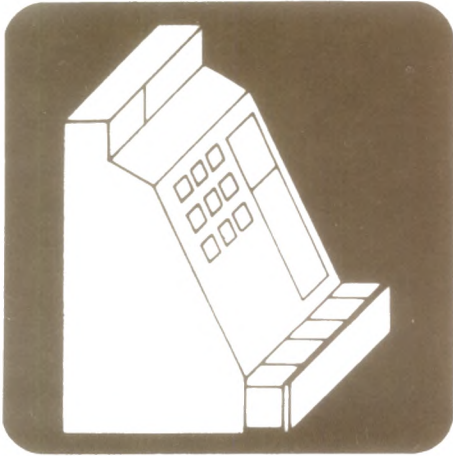
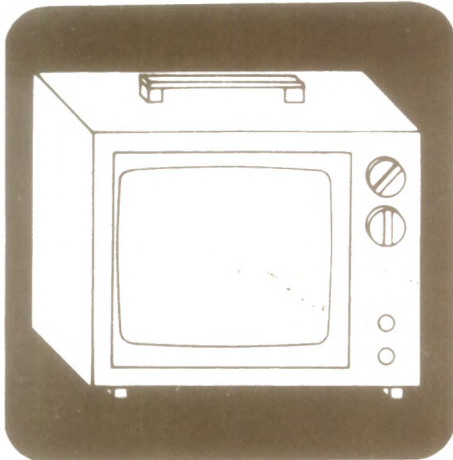
Transportation, Communications, Utilities,  
Trade, Educational Services, State and Local Government

U.S. Department of Labor  
Bureau of Labor Statistics  
December 1987

S.M.S.O. STAN  
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Transportation, Communications, Utilities,  
Trade, Educational Services, State and Local Government

U.S. Department of Labor  
Ann McLaughlin, Secretary

Bureau of Labor Statistics  
Janet L. Norwood, Commissioner  
December 1987

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# Preface

This bulletin provides data from a 1985 survey of occupational employment in transportation, communications, utilities, wholesale and retail trade, educational services, and State and local government. Earlier surveys of transportation, communications, utilities, and trade were conducted in 1976, 1979, and 1982. Results of the 1982 survey were published in Bulletin 2220, *Occupational Employment in Transportation, Communications, Utilities, and Trade*. State and local government services were included in the 1979 and 1982 surveys. Educational services were surveyed for the first time in 1985.

Other nonmanufacturing industries were surveyed in 1984 and results were published in Bulletin 2264, *Occupational Employment in Mining, Construction, Finance, and Services*.

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

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

This bulletin was prepared in the Office of Employment and Unemployment Statistics, Division of Occupational and Administrative Statistics, by Janet Owens and Barbara Keitt under the direction of Glyn Finley. Minnie Dickerson and Florence Moore provided word processing assistance.

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# Introduction

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

In 1985, 50 States and the District of Columbia participated in the survey, compared with 48 States in 1982.

This bulletin presents national data only. Data on occupational employment in each participating State are available from the State employment security agencies listed on the last page of this bulletin.

This bulletin presents national data on occupational employment for 2-digit SIC industries.<sup>1</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 data.

<sup>1</sup> Occupational employment data at the more detailed 3-digit level are available upon request from the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics. Definitions for all occupations surveyed are also available upon request.



# Summary

In 1985, 42.7 million, or 44 percent of all nonagricultural wage and salary workers in the Nation were employed in the transportation, communications, utilities, trade, and educational services industries and in State and local government. Wholesale and retail trade industries employed more than half; educational services employed one-fifth. The third largest industry group in the survey, transportation, employed 7 percent, with the motor freight and warehousing component accounting for almost one-half of this share. (See table 1.)

For comparative purposes, data from the 1982 and 1985 surveys of occupational employment in these industries appear in the following tabulation. In the industries surveyed in both years, employment increased by a total of 12 percent. The tabulation excludes employment in railroads and educational services since they were surveyed for the first time in 1985.

	Employment		Percent change, 1982-85
	1982	1985	
Transportation, excluding railroads . . . . .	2,368,240	2,630,740	11.1
Communications . . . . .	1,421,120	1,322,070	-7.0
Utilities . . . . .	866,770	904,390	4.3
Wholesale and retail . . . . .	20,571,860	23,291,650	13.2

Of the major industry groups surveyed, only communications experienced a decline in employment, with 7 percent fewer workers than in 1982. Divestiture of the telephone industry was implemented during January 1984, which may explain much of the employment change that has occurred in the industry.

Employment increases in transportation, utilities, and wholesale and retail trade reflect a period of general sustained economic growth which began at the end of 1982. Between 1982 and 1985, employment in the nonagricultural sector of the economy increased by 9 percent. The employment gains in transportation and wholesale and retail trade were higher than average, with increases of 11 percent and 13 percent, respectively.

## Major occupational groups

This is the first survey of these industries to use the OES occupational classification system, introduced in 1983. The OES classification emphasizes occupations of special interest to many data users, such as technology-related occupations and those which require substantial training. In addition, this system is both more concise and more compatible with the Standard Occupational Classification System than were older

classification schemes. A detailed explanation of the OES classification system is given in appendix B.

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

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

*Managerial and administrative workers.* Persons holding positions as managerial and administrative workers are primarily concerned with policymaking, planning, organizing, staffing, directing, and controlling activities common to many types of organizations. Occupations included in this group are plant, office, and sales managers and corporate officers such as president and treasurer. First-line supervisors, such as production and clerical supervisors, however, are included in the same occupational division as the workers they supervise. The new classification system contains a new occupation: First-line supervisor—sales. These supervisory workers are now included in the sales category rather than in the managers/administrators group (appendix B).

In 1985, managerial and administrative workers numbered 2.8 million, or 7 percent of total employment in the industries surveyed. The highest concentrations of these workers were in retail trade, specifically in the home furnishing and building materials industries. In these industries 12 and 11 percent, respectively, of the work force were in managerial positions. This high proportion of managers may be explained by the fact that approximately 50 percent of the units in these groups are small establishments that employed fewer than 50 workers.

*Professional, paraprofessional, and technical workers.* Persons employed in professional positions usually deal with theoretical or practical aspects of such fields as science, engineering, art, education, medicine, law, and business

relations. Most of these occupations require substantial educational preparation, usually at the university level. Paraprofessionals work under the direction of professionals. These occupations usually require some postsecondary education or, in some instances, a baccalaureate degree. Technical occupations require knowledge of fundamental scientific, engineering, mathematical, computer programming, or draft design principles. This knowledge is acquired through study at technical schools and junior colleges, through other formal postsecondary training less extensive than a 4-year college education, or through equivalent on-the-job training or experience.

In 1985, professional, paraprofessional, and technical workers numbered 7.9 million, or 19 percent of employment in the surveyed industries. Approximately 66 percent of this occupational group were employed in educational services.

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

In 1985, the number of sales workers was 8.4 million, or 20 percent of surveyed employment. The highest proportions of sales workers were employed in food stores (20 percent) and general merchandise stores (17 percent).

*Clerical and administrative support workers.* Persons employed in this occupational group are concentrated in five categories: First-line supervisors—clerical; selected secretarial and general office occupations; electronic data processing and other office machine occupations; selected communication, mail, and message distributing occupations;

and material recording, scheduling, dispatching, and distributing occupations. The last group consists of plant clerical workers who plan, coordinate, or expedite production and the flow of work. They are also involved in the clerical aspects of receiving, storing, issuing, or shipping of materials, merchandise, supplies, or equipment. The other nonsupervisory groups are primarily office clerical workers who prepare, systematize, transcribe, transfer, or preserve written communication and records, as well as collect accounts and distribute information.

There were 6.9 million clerical and administrative support workers employed in the surveyed industries in 1985. The greatest number were employed in educational services.

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

In 1985, service workers numbered 8.6 million, or 20 percent of surveyed employment. Service workers constituted the largest occupational group in the industries surveyed. Eating and drinking establishments accounted for more than half of total employment in this category.

*Agriculture, forestry, fishing, and related workers.* Agricultural workers include persons in occupations such as graders and sorters of agricultural products; gardeners and groundskeepers, except farm; and farm equipment operators. The occupational group also includes forestry workers such as choke setters, log-handling equipment operators, nursery workers, and conservation workers.

In 1985, the surveyed industries employed only 209,380 workers in this occupational group, less than 1 percent of total employment.

*Production, construction, operating, maintenance, and material handling occupations.* This occupational group, referred to hereafter in the text as production and related workers, includes all skilled, semiskilled, and unskilled workers performing machine and manual tasks. In 1985, this group numbered 7.8 million, or 18 percent of the work force surveyed. The largest concentration of production workers was employed in motor freight transportation.

**Table 1. Employment in transportation, communications, utilities, trade, educational services, and State and local government, 1985**

Industry	Employment	Percent distribution
Total .....	42,689,560	100.0
Transportation, total .....	2,997,840	7.0
Railroad transportation .....	367,110	.9
Local and suburban transit and interurban highway .....	291,460	.7
Motor freight transportation and warehousing .....	1,347,920	3.2
Water transportation .....	180,940	.4
Air transportation .....	520,480	1.2
Pipelines, except natural gas .....	19,190	.0
Transportation services .....	270,750	.6
Communications .....	1,322,070	3.1
Utilities .....	904,390	2.1
Wholesale and retail trade .....	23,291,650	54.6
Wholesale trade .....	5,767,230	13.5
Durable goods .....	3,428,870	8.0
Nondurable goods .....	2,338,360	5.5
Retail trade .....	17,524,420	41.1
Building materials, hardware, garden supply, and mobile home dealers .....	710,950	1.7
General merchandise stores .....	2,275,450	5.3
Food stores .....	2,785,160	6.5
Automotive dealers and gasoline service stations .....	1,915,410	4.5
Apparel and accessory stores .....	1,030,940	2.4
Furniture, home furnishings, and equipment stores .....	726,440	1.7
Eating and drinking places .....	5,923,060	5.1
Miscellaneous retail .....	2,157,010	5.1
Educational services .....	8,569,280	20.1
State government .....	1,843,480	4.3
Local government .....	3,760,850	8.8

**Table 2. Employment in transportation, communications, utilities, trade, educational services, and State and local government by major occupational group, 1985**

Industry	Managerial and administrative workers	Professional, paraprofessional, and technical workers	Sales and related workers	Clerical and administrative workers	Agriculture, forestry, fishing, and related workers	Production, construction, operating, maintenance, and material handling workers	Service workers
Total .....	2,815,930	7,939,900	8,352,870	6,928,770	209,380	7,819,160	8,623,550
Railroad transportation .....	17,950	13,860	4,400	52,860	100	267,690	10,240
Local and suburban transit and interurban highway .....	10,830	26,580	1,900	34,270	0	205,910	11,970
Motor freight transportation and warehousing .....	67,040	13,050	30,580	220,930	1,700	1,003,970	10,650
Water transportation .....	10,180	6,750	4,950	24,100	120	126,800	8,040
Air transportation .....	20,430	27,700	13,430	162,460	30	202,630	93,800
Pipelines, except natural gas .....	1,580	3,190	40	2,350	0	11,960	70
Transportation services .....	19,090	7,500	111,740	93,790	150	33,420	5,060
Communications .....	115,180	255,950	71,250	496,830	90	370,770	12,000
Electric, gas, steam, water, and sanitary services .....	57,120	153,770	12,860	223,320	2,080	439,650	15,590
Wholesale trade--durable goods .....	321,870	259,590	904,390	983,580	1,230	933,260	24,950
Wholesale trade--nondurable goods ..	186,020	102,760	609,510	620,200	33,980	733,620	52,270
Building materials, hardware, garden supply, and mobile home dealers ..	80,040	24,370	301,780	120,790	18,600	158,080	7,290
General merchandise stores .....	124,760	68,660	1,441,540	375,390	220	135,110	129,770
Food stores .....	188,310	41,940	1,690,850	165,140	1,050	241,450	456,420
Automotive dealers and gasoline service stations .....	161,680	15,880	575,850	244,660	280	870,970	46,090
Apparel and accessory stores .....	97,490	27,920	764,190	83,720	120	44,600	12,900
Furniture, home furnishings, and equipment stores .....	85,820	37,620	296,370	133,420	50	164,370	8,790
Eating and drinking places .....	338,350	37,630	306,670	105,600	790	70,010	5,064,010
Miscellaneous retail .....	178,110	196,160	1,134,580	280,680	7,630	262,730	97,120
Educational services .....	431,120	5,243,390	23,970	1,249,180	48,560	499,520	1,073,540
State government .....	106,870	668,720	23,060	469,470	21,710	203,530	350,120
Local government .....	196,090	706,910	28,960	786,030	70,890	839,110	1,132,860

**Table 3. Percent distribution of employment in transportation, communications, utilities, trade, educational services, and State and local government by major occupational group, 1985**

Industry	All occupations	Managerial and administrative workers	Professional, paraprofessional, and technical workers	Sales and related workers	Clerical and administrative support workers	Agriculture, forestry, fishing, and related workers	Production, construction, operating, maintenance, and material handling workers	Service workers
Total .....	100.0	6.6	18.6	19.6	16.2	0.5	18.3	20.2
Railroad transportation .....	100.0	4.9	3.8	1.2	14.4	.0	72.9	2.8
Local and suburban transit and interurban highway .....	100.0	3.7	9.1	.7	11.8	.0	70.6	4.1
Motor freight transportation and warehousing .....	100.0	5.0	1.0	2.3	16.4	.1	74.5	.8
Water transportation .....	100.0	5.6	3.7	2.7	13.3	.1	70.1	4.4
Air transportation .....	100.0	3.9	5.3	2.6	31.2	.0	38.9	18.0
Pipelines, except natural gas .....	100.0	8.2	16.6	.2	12.2	.0	62.3	.4
Transportation services .....	100.0	7.1	2.8	41.3	34.6	.1	12.3	1.9
Communications .....	100.0	8.7	19.4	5.4	37.6	.0	28.0	.9
Electric, gas, steam, water, and sanitary services .....	100.0	6.3	17.0	1.4	24.7	.2	48.6	1.7
Wholesale trade--durable goods .....	100.0	9.4	7.6	26.4	28.7	.0	27.2	.7
Wholesale trade--nondurable goods ..	100.0	8.0	4.4	26.1	26.5	1.5	31.4	2.2
Building materials, hardware, garden supply, and mobile home dealers .....	100.0	11.3	3.4	42.4	17.0	2.6	22.2	1.0
General merchandise stores .....	100.0	5.5	3.0	63.4	16.5	.0	5.9	5.7
Food stores .....	100.0	6.8	1.5	60.7	5.9	.0	8.7	16.4
Automotive dealers and gasoline service stations .....	100.0	8.4	.8	30.1	12.8	.0	45.5	2.4
Apparel and accessory stores .....	100.0	9.5	2.7	74.1	8.1	.0	4.3	1.3
Furniture, home furnishings, and equipment stores .....	100.0	11.8	5.2	40.8	18.4	.0	22.6	1.2
Eating and drinking places .....	100.0	5.7	.6	5.2	1.8	.0	1.2	85.5
Miscellaneous retail .....	100.0	8.3	9.1	52.6	13.0	.4	12.2	4.5
Educational services .....	100.0	5.0	61.2	.3	14.6	.6	5.8	12.5
State government .....	100.0	5.8	36.3	1.3	25.5	1.2	11.0	19.0
Local government .....	100.0	5.2	18.8	.8	20.9	1.9	22.3	30.1

# Transportation

In 1985, there were 3.0 million workers employed in transportation industries, accounting for 7 percent of total surveyed employment. The motor freight transportation and warehousing component was the largest employer, with approximately 45 percent of all transportation workers. Air transportation ranked second with 17 percent. Railroad transportation, which was included for the first time in the 1985 survey, employed 12 percent. Local and suburban transit and interurban highway passenger transportation and transportation services employed 10 and 9 percent, respectively. Water transportation employed 6 percent, and pipeline transportation (except natural gas) employed less than one-half of 1 percent.

Combined employment in transportation, excluding railroad transportation, increased by 11 percent from 1982. The following tabulation shows the change in employment for the transportation industries since 1982.

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Total .....	2,368,240	2,630,740	11.1
Local and suburban transit and interurban highway passenger transportation .....	268,890	291,460	8.4
Motor freight transportation and warehousing .....	1,207,840	1,347,920	11.6
Water transportation .....	212,600	180,940	-14.9
Air transportation .....	440,590	520,480	18.1
Pipelines, except natural gas .....	22,650	19,190	-15.3
Transportation services .....	215,670	270,750	25.5

Since 1982, the only transportation industries to experience declines in employment have been water transportation and pipelines, which each employed about 15 percent fewer workers. However, these large decreases did not significantly influence overall employment because these industries account for only a small percentage of total employment in transportation.

The high rates of employment growth that occurred throughout most of the other transportation industries stemmed from regulatory changes that were implemented in the late 1970's and early 1980's. Deregulation contributed to an increase in industrywide competition and cost efficiency. Concurrently, conditions of general economic prosperity increased the demand for travel, transportation, and related services.

## Railroad transportation

The railroad industry includes establishments furnishing transportation by line-haul railroad, (Class 1, Class 2, and

other), and terminal and switching establishments. This includes line-haul operating railroads and interurban railroads, whether diesel, electric, or steam.

In 1985, 367,110 persons were employed in the railroad industry. Most of these workers (93 percent) were employed by Class 1 railroads. Total national employment in the railroad industry declined steadily from 445,400 in 1982 to 384,000 in 1983, 381,600 in 1984, to the 1985 level of 367,110.

A universe of establishments was collected for the 1985 OES survey of the railroad industry. This represents the first year in which occupational employment estimates have been published for this industry.

Workers employed in production and related occupations accounted for 73 percent of railroad employment. Clerical and administrative support workers ranked second with 14 percent. The remaining employment was distributed throughout the other major groups as follows: Managerial and administrative workers, 5 percent; professional, paraprofessional, and technical workers, 4 percent; service occupations, 3 percent; sales and related occupations, 1 percent; and agriculture, forestry, fishing, and related occupations, less than 1 percent. (See table 4.)

The five most populous occupations in the railroad industry, all of which are found in the production and related workers group, are listed in the following tabulation. Together they constituted approximately 40 percent of total employment in the industry.

	<i>Employment, 1985</i>	<i>Percent of industry employment</i>
Railroad brake, signal, and switch operators .....	43,980	12.0
Railroad conductors and yard masters .....	32,340	8.8
Rail-track laying and maintenance equipment operators .....	31,790	8.7
Railcar repairers .....	19,680	5.4
Locomotive engineers .....	18,780	5.1

## Local and suburban transit and interurban highway passenger transportation

Establishments in this industry include firms which provide transportation of passengers by automobile, bus, taxi, rail, or subway within a single municipality, between neighboring municipalities, or between a municipality and its surrounding locale. Also included are establishments which supply sightseeing transportation. (Interurban rail service is not included.) Terminal and maintenance services are also part of this industry.

Local and suburban transit and interurban highway

passenger transportation employed 291,460 workers in 1985, or 10 percent of all workers employed in transportation. Production and related occupations accounted for 71 percent of all workers employed in this industry. Clerical and administrative support workers ranked second with 12 percent. The third largest group was professional, paraprofessional, and technical workers with 9 percent. Service workers and managerial and administrative workers ranked fourth and fifth, respectively. Sales and related workers constituted less than 1 percent of the industry's employment. (See table 5.)

Employment in all major occupational groups, except managers and administrators, increased between 1982 and 1985. The decline in employment among managers resulted from changes in the OES classification structure. First-line sales supervisors were reclassified to the sales and related workers group from managers and administrators. Cashiers were shifted to sales from the clerical and administrative workers group, which caused about a 20-percent increase in sales employment. The change, however, had little effect on the overall employment figure for clerical and administrative workers.

The five largest occupations are listed below:

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Busdrivers, school .....	69,260	80,810	16.7
Busdrivers .....	52,810	60,240	14.1
Taxi drivers and chauffeurs .....	35,490	33,270	-6.3
Emergency medical technicians .....	14,740	24,080	63.4
Dispatchers, except police, fire, and ambulance .....	9,060	8,840	-2.4

School busdrivers, busdrivers, and taxi drivers and chauffeurs were also the three most populous occupations in the industry in 1982. The number of taxi drivers and chauffeurs declined by 6 percent between 1982 and 1985. Employment of school busdrivers and busdrivers rose during that same period.

Between 1982 and 1985, the number of emergency medical technicians employed in local and suburban transit and interurban highway passenger transportation increased by 63 percent, outpacing the employment growth of all other occupations in the industry. Ambulance drivers declined by 49 percent during this period. One reason for the opposing trends in employment may be that ambulance drivers were trained and moved into the more skilled occupation.

Of all workers in local and suburban transit and interurban highway passenger transportation in 1985, the school bus industry employed 35 percent. Ranking second was local and suburban passenger transportation, with 32 percent. Employment in each of the remaining four industry segments did not exceed 15 percent of the total.

Between 1982 and 1985, employment in local and suburban transit and interurban highway passenger transportation increased by 8 percent (text table 1). The expansion of the

**Text table 1. Employment in local and suburban transit and interurban highway passenger transportation by industry, 1982 and 1985, and percent change**

Industry	SIC Code	Employment		Percent change, 1982-85
		1982	1985	
Total .....		268,890	291,460	8.4
Local and suburban transportation .....	411	85,520	92,210	7.8
Taxicabs .....	412	42,250	38,690	-8.4
Intercity and rural highway passenger transportation .....	413	38,680	36,290	-6.2
Passenger transportation charter service .....	414	16,890	20,980	24.2
School buses .....	415	82,720	100,790	21.8
Terminal and service facilities for motor vehicle passenger transportation .....	417	2,850	2,490	-12.6

charter service industry was due in part to the favorable conditions created by the Bus Reform Act of 1982, which allowed carriers to enter into charter service without providing a regular route service. The industry has benefited from the expansion of domestic leisure and vacation travel.

### Motor freight transportation and warehousing

This industry consists of establishments which furnish local or long-distance trucking, or those engaged in the storage of farm products, furniture or other household goods, or commercial goods of any nature. The operation of terminal facilities for handling freight, with or without maintenance facilities, is also included. (Establishments engaged in field warehousing or storing natural gas are excluded.)

The motor freight industry employed 1.3 million workers in 1985, with local and long-distance trucking establishments accounting for 93 percent. Public warehousing establishments employed 7 percent and terminal and maintenance facilities, less than 1 percent. There were no changes in these employment distributions from 1982.

Production and related workers accounted for the largest occupational group in the motor freight industry, with 75 percent of total industry employment (table 6). Ranking second, clerical and administrative workers comprised 16 percent. The remaining employment was distributed among the occupational groups as follows: Managerial and administrative workers, 5 percent; sales and related workers, 2 percent; professional, paraprofessional, and technical workers, 1 percent; service workers, 0.8 percent; and agriculture, forestry, fishing, and related workers, 0.1 percent.

Between 1982 and 1985, employment in the motor freight and warehousing industry grew by 12 percent. Four occupations that experienced substantial increases in employment are shown in the following tabulation:

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Heavy and tractor-trailer truck drivers .....	441,090	509,570	15.5
Bus and truck mechanics .....	41,410	51,220	23.7
Dispatchers .....	25,690	30,810	19.9
Sales agents .....	16,600	23,200	39.8

Economic conditions and regulatory reform of the industry, implemented through the Motor Carrier Act of 1980, have both contributed to fluctuations in the levels of motor carrier tonnage and revenue but it is difficult to separate the impact of each. During the previous survey in 1982, motor freight transportation employment had decreased by 11 percent from 1979. These reductions occurred at the same time that industrial production was declining. Since 1982, economic activity has increased, which has spurred the demand for motor freight transportation services.

### Water transportation

Included in this industry are establishments that transport freight and passengers on the open seas or inland waterways, and those which furnish incidental services such as lighterage, canal operation, and towing. Also included are excursion boats, sightseeing boats, and water taxis. Charter and party fishing boats are excluded.

In 1985, water transportation establishments employed 180,940 workers, accounting for 6 percent of all workers employed in transportation-related industries. Fifty-three percent of the workers were employed in services incidental to water transportation. Deep sea foreign transportation and local water transportation establishments each employed 15 percent. The remaining industry employment was distributed as follows: Transportation on rivers and canals, 9 percent; deep sea domestic transportation, 7 percent; and transportation services on the Great Lakes and St. Lawrence Seaway, 1 percent.

The 126,800 production and related workers accounted for 70 percent of total industry employment. Clerical and administrative support workers ranked second with 13 percent. The third largest group was managerial and administrative workers, with 6 percent. Service workers ranked fourth with 4 percent, followed by professional and sales workers, with 4 and 3 percent, respectively. (See table 7.)

From 1982 to 1985, employment in water transportation declined by 15 percent. The greatest decline, 18 percent, was in deep sea foreign transportation establishments. Thirty-nine percent of all able seamen were employed in this industry; their employment increased by 3 percent despite the sharp decline in deep sea transportation employment as a whole. Substantial declines did occur in employment of ordinary seamen and marine oilers, and water vessel captains, as shown in the following tabulation:

	<i>Employment</i>		<i>Percent change 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Ordinary seamen and marine oilers . . . . .	18,980	12,540	-33.9
Captains, water vessels . . . . .	13,780	10,490	-23.9
Able seamen . . . . .	8,780	9,060	3.2

### Air transportation

Included in this industry are establishments that provide domestic and international air transportation, operate airports

and flying fields, and provide terminal services.

The air transportation industry employed 520,480 workers in 1985. Certificated carriers who are licensed to transport revenue passengers, cargo, or freight accounted for 82 percent of the industry's employment. Establishments that operate and maintain airports, flying fields, hangars, and aircraft ranked second with 12 percent. Noncertificated carriers employed the remaining 6 percent.

Employment in the airline industry increased by 11 percent from 1982 to 1985. Over the period, airline deregulation stimulated growth and activity within the industry. The change in industry structure provided airline establishments with greater pricing flexibility, freedom to enter and abandon markets, and incentives for creating new marketing strategies. As a result, fare discounts, route concentrations, mergers and acquisitions, and the development of commuter and feeder networks shaped the business environment. Regional airlines increased air traffic through their agreements with the major airlines to route passengers from outlying areas into central networks; major airlines pursued international opportunities. Additionally, the high value of the dollar, in comparison with other currencies, encouraged U.S. residents to travel abroad. The combination of these factors provide, at least in part, an explanation for the increase in employment levels.

Production and related workers accounted for 39 percent of all workers employed in the airline transportation industry. Ranking second, clerical and administrative support workers made up 31 percent. The third largest group was service workers, with 18 percent. Remaining employment was distributed as follows: Professional, paraprofessional, and technical workers, 5 percent; managerial and administrative workers, 4 percent; and sales and related workers, 3 percent. (See table 8.)

Between 1982 and 1985, employment of production and related workers increased by 14 percent; clerical and administrative workers, 22 percent. The number of managerial and administrative workers and professional, paraprofessional, and technical workers declined by 19 and 62 percent, respectively. These apparent declines resulted from the change in the classification system. The new coding structure reclassified first-line supervisors from the managerial occupational group to their respective occupations. Flight engineers and airline pilots, who accounted for 69 percent of professional workers in 1982, were reclassified to the production and related occupational group. (In order to achieve comparability between 1982 and 1985 employment estimates for production and related workers, flight engineers and airline pilots were excluded from the 1985 estimates prior to calculation of percentage changes.)

### Pipelines, except natural gas

This industry is made up of firms that move petroleum and other products (except natural gas) through pipelines. Pipelines operated by petroleum producing or refining companies



and separately reported are also included.

There were 19,190 workers in this industry in 1985, a decline of 15 percent from 1982. This reflected a general slowdown in oil and gas activity due to an oversupply which led to price declines. Over 60 percent of the workers in the industry were employed in production and related occupations. (See table 9.) The next largest group was professional, paraprofessional, and technical workers with 17 percent. Over half of these workers were engineers or engineering technicians. Clerical and administrative support occupations accounted for 12 percent.

### Transportation services

This industry comprises firms that provide services incidental to transportation such as the arrangement of passenger and freight transportation, and forwarding and packing services.

In 1985, these firms employed 270,750 workers or 9 percent of the total employed in transportation. This was a 25-percent increase from 1982. The following tabulation shows employment changes within the industry:

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Freight forwarding . . . . .	52,980	59,890	13.1
Arrangement of transportation . . . .	140,570	193,400	37.6
Rental of railroad cars . . . . .	4,300	3,090	-28.1
Miscellaneous services incidental to transportation . . . . .	7,830	14,380	-19.3

Sales and related workers accounted for 41 percent of all workers employed in transportation services. Clerical and administrative support workers made up 35 percent. The remaining employment was distributed as follows: Production and related workers, 12 percent; managerial and administrative workers, 7 percent; professional, paraprofessional, and technical workers, 3 percent; and service workers, 2 percent. (See table 10.)

Since the last survey, cashiers have been reclassified from

the clerical to the sales and related workers group, and travel agents, formerly included among professional workers, also have been reclassified as sales workers. The reclassification of travel agents had a large impact on total employment for the sales and professional groups. The estimates for sales and related workers were also affected by the addition of 3,000 first-line supervisory workers, who were formerly classified as managerial and administrative workers.

Travel agents continued to be the leading occupation in terms of employment. This occupation accounted for 36 percent of total industry employment in 1985 and increased by 73 percent since 1982. Up to 1982, travel agents and travel accommodations appraisers were surveyed together as a single occupation.

In 1985, establishments arranging transportation employed 193,400, or 71 percent of all workers in transportation services. The travel industry has benefitted from the increase in leisure-time activities and the expansion of business-related travel. Almost all of the travel agents employed in 1985 were in arrangement-of-transportation industries, as were most bookkeeping, accounting, and auditing clerks; first-line supervisors; clerical and administrative support workers; and sales agents in selected business services. These workers constituted 78, 70, and 62 percent, respectively, of total employment in transportation services.

Freight forwarding establishments employed the second largest number of transportation service workers in 1985, or 22 percent. The occupation with the largest proportion of workers in the industry was truckdrivers, light (including delivery and route workers), 65 percent. General office clerks accounted for 45 percent. Communications, transportation, and utilities operations managers made up 42 percent.

Establishments engaged in the rental of railroad cars and miscellaneous services incidental to transportation made up the balance of transportation services employment, 6 percent in 1985.

**Table 4. Railroad transportation: Employment, relative error, and percent of establishments reporting selected occupations, May 1985**

(SIC 40)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	367,110	100.00	--	--
Managerial and administrative occupations .....	17,950	4.89	n.a.	n.a.
Financial managers .....	1,090	.30	11	28
Personnel, training, and labor relations managers .....	670	.18	10	17
Purchasing managers .....	210	.06	10	11
Marketing, advertising, and public relations managers .....	1,700	.46	9	30
Administrative services managers .....	930	.25	11	15
Construction managers .....	890	.24	11	14
Communications, transportation, and utilities operations managers .....	7,870	2.14	10	53
General managers and top executives .....	1,580	.43	14	54
All other managers and administrators .....	3,010	.82	13	25
Professional, paraprofessional, and technical occupations .....	13,870	3.78	n.a.	n.a.
Management support workers .....	6,670	1.82	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	2,000	.54	n.a.	n.a.
Accountants and auditors .....	1,390	.38	9	28
Budget analysts .....	210	.06	13	6
All other financial specialists .....	400	.11	12	7
Purchasing agents, except wholesale and retail trade, and farm products .....	320	.09	11	13
Personnel, training, and labor relations specialists .....	560	.15	9	14
Construction and building inspectors .....	240	.07	11	8
Compliance officers and enforcement inspectors, except construction .....	170	.05	17	8
All other management support workers .....	3,380	.92	17	17
Engineers .....	2,350	.64	n.a.	n.a.
Civil engineers, including traffic .....	1,390	.38	9	22
All other engineers .....	960	.26	14	11
Engineering and related technicians and technologists .....	650	.18	10	15
Physical scientists .....	140	.04	12	7
Computer scientists and related workers .....	1,660	.45	n.a.	n.a.
Systems analysts, electronic data processing .....	650	.18	13	8
Computer programmers .....	1,010	.28	15	8
Operations and systems researchers and analysts, except computer .....	450	.12	13	5
Health practitioners, technologists, technicians, and related health workers .....	100	.03	7	7
All other professional, paraprofessional, and technical workers .....	1,850	.50	n.a.	n.a.
Sales and related occupations .....	4,400	1.20	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	620	.17	7	16
Sales representatives and salespersons, services .....	2,990	.81	n.a.	n.a.
Appraisers, real estate .....	130	.04	17	3
Sales agents, selected business services .....	2,860	.78	12	31
Cashiers .....	210	.06	9	10
All other sales and related workers .....	580	.16	n.a.	n.a.
Clerical and administrative support occupations .....	52,860	14.40	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	5,960	1.62	9	46
Adjustment clerks .....	850	.23	10	18

See footnotes at end of table.

**Table 4. Railroad transportation: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

(SIC 40)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Reservation and transportation ticket agents .....	1,730	0.47	14	11
Secretaries .....	3,190	.87	10	40
Stenographers .....	1,310	.36	7	22
Receptionists and information clerks .....	120	.03	20	4
Typists .....	440	.12	10	14
Typists, word processing equipment .....	120	.03	15	3
Personnel clerks, except payroll and timekeeping .....	2,000	.54	14	15
Correspondence clerks .....	80	.02	16	4
File clerks .....	380	.10	14	8
Statistical clerks .....	690	.19	19	11
Bookkeeping, accounting, and auditing clerks .....	2,350	.64	10	26
Payroll and timekeeping clerks .....	620	.17	9	19
Billing, cost and rate clerks .....	5,260	1.43	9	36
General office clerks .....	11,380	3.10	6	49
Electronic data processing and other office machine operators .....	2,590	.71	n.a.	n.a.
Billing, posting, and calculating machine operators .....	260	.07	11	6
Computer operators, except peripheral equipment .....	500	.14	13	8
Peripheral EDP equipment operators .....	120	.03	20	3
Data entry keyers, except composing .....	1,200	.33	10	20
All other office machine operators .....	510	.14	21	8
Switchboard operators .....	290	.08	10	9
Telegraph and teletype operators .....	1,030	.28	9	14
All other communications equipment operators .....	770	.21	12	6
Messengers .....	1,290	.35	8	17
Material recording, scheduling, dispatching, and distributing workers .....	9,220	2.51	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	3,430	.93	6	28
Production, planning, and expediting clerks .....	280	.08	13	9
Stock clerks, stockroom, warehouse or storage yard .....	2,570	.70	11	27
Traffic, shipping, and receiving clerks .....	2,270	.62	13	18
All other material recording, scheduling, and distributing workers .....	670	.18	17	9
All other clerical and administrative support workers .....	1,190	.32	9	16
Service occupations .....	10,240	2.79	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	700	.19	12	14
Railroad and transit police and special agents .....	2,700	.74	7	26
Crossing guards .....	230	.06	14	6
Guards and watch guards .....	390	.11	18	6
Food and beverage preparation and service workers .....	2,260	.62	n.a.	n.a.
Cleaning and building service workers, except private households .....	1,990	.54	n.a.	n.a.
Baggage porters and bellhops .....	360	.10	14	7
Transportation attendants, except flight attendants and baggage porters .....	1,040	.28	15	6
All other service workers .....	570	.16	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	100	.03	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	267,690	72.92	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	20,580	5.61	n.a.	n.a.

See footnotes at end of table.

**Table 4. Railroad transportation: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

(SIC 40)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	6,940	1.89	8	41
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	7,250	1.97	11	33
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	4,140	1.13	8	26
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand .....	1,200	.33	8	15
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,050	.29	8	14
Transportation inspectors .....	3,220	.88	6	26
All other inspectors, testers and related occupations .....	720	.20	12	11
Mechanics, installers, and repairers .....	43,250	11.78	n.a.	n.a.
Maintenance repairers, general utility .....	1,040	.28	8	21
Automotive mechanics .....	70	.02	19	3
Bus and truck mechanics and diesel engine specialists .....	7,230	1.97	10	26
Rail car repairers .....	19,680	5.36	2	42
Signal or track switch maintainers .....	8,510	2.32	8	38
Radio mechanics .....	140	.04	14	6
Electrical installers and repairers, transportation equipment .....	4,730	1.29	10	20
All other mechanics, installers, and repairers .....	1,850	.50	8	16
Construction trades workers, except material moving .....	44,580	12.14	n.a.	n.a.
Carpenters .....	3,780	1.03	6	30
Electricians .....	4,880	1.33	7	22
Painters and paperhangers, construction and maintenance .....	630	.17	12	12
Plumbers, pipefitters, and steamfitters .....	1,650	.45	9	14
Rail-track laying and maintenance equipment operators .....	31,790	8.66	( <sup>3</sup> )	64
All other construction trades workers .....	1,850	.50	8	19
Precision metal workers .....	7,400	2.02	n.a.	n.a.
Machinists .....	4,500	1.23	10	18
Sheet-metal workers .....	2,900	.79	7	19
Precision workers, n.e.c. ....	800	.22	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	1,500	.41	n.a.	n.a.
Painters, transportation equipment .....	60	.02	22	2
All other machine setters and set-up operators, except metal and plastic .....	10	( <sup>3</sup> )	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	1,430	.39	11	7
Hand workers, including assemblers and fabricators .....	2,200	.60	n.a.	n.a.
Plant and system workers .....	220	.06	9	9
Motor vehicle operators .....	2,580	.70	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	190	.05	12	8
Truck drivers, light, include delivery and route workers .....	2,390	.65	9	15
Railroad conductors and yardmasters .....	32,340	8.81	( <sup>3</sup> )	70
Locomotive engineers .....	18,780	5.12	5	70
Rail yard engineers, dinkey operators, and hostlers .....	9,180	2.50	8	31
Locomotive firers .....	6,370	1.74	8	27
Railroad brake, signal, and switch operators .....	43,980	11.98	( <sup>3</sup> )	61
All other rail vehicle operatives and controllers .....	3,890	1.06	9	17
Bridge, lock, and lighthouse tenders .....	410	.11	11	10

See footnotes at end of table.

**Table 4. Railroad transportation: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

(SIC 40)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other transportation and motor vehicle operators .....	1,480	0.40	11	12
Material moving equipment operators .....	3,320	.90	n.a.	n.a.
Hoist and winch operators .....	890	.24	13	5
Crane and tower operators .....	390	.11	12	11
Industrial truck and tractor operators .....	920	.25	12	10
Operating engineers .....	910	.25	15	5
All other material moving equipment operators .....	210	.06	14	5
Helpers - mechanics and repairers .....	2,860	.78	15	18
Vehicle washers and equipment cleaners .....	1,830	.50	14	9
All other helpers, laborers, and material movers, hand .....	16,200	4.41	9	32

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 5. Local and suburban transit and interurban highway passenger transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 41)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	291,460	100.00	--	--
Managerial and administrative occupations .....	10,830	3.72	n.a.	n.a.
Financial managers .....	580	.20	4	8
Personnel, training, and labor relations managers .....	490	.17	6	6
Purchasing managers .....	160	.05	9	2
Marketing, advertising, and public relations managers .....	280	.10	7	4
Administrative services managers .....	330	.11	12	3
Communications, transportation, and utilities operations managers .....	5,990	2.06	4	38
General managers and top executives .....	2,380	.82	3	19
All other managers and administrators .....	620	.21	7	4
Professional, paraprofessional, and technical occupations .....	26,580	9.12	n.a.	n.a.
Management support workers .....	1,490	.51	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	930	.32	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products .....	90	.03	9	1
Personnel, training, and labor relations specialists .....	280	.10	6	3
All other management support workers .....	190	.07	7	1
Computer scientists and related workers .....	170	.06	n.a.	n.a.
Computer programmers .....	80	.03	7	1
Computer programmer aides .....	90	.03	13	1
Emergency medical technicians .....	24,080	8.26	2	18
All other health professionals, paraprofessional and technicians .....	280	.10	16	1
Public relations specialists and publicity writers .....	140	.05	30	1
All other professional, paraprofessional, and technical workers .....	420	.14	n.a.	n.a.
Sales and related occupations .....	1,900	.65	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	340	.12	8	2
Sales agents, selected business services .....	910	.31	8	6
Cashiers .....	370	.13	8	2
All other sales and related workers .....	280	.10	11	1
Clerical and administrative support occupations .....	34,270	11.76	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	900	.31	5	9
Reservation and transportation ticket agents .....	5,250	1.80	6	12
Secretaries .....	3,200	1.10	3	28
Stenographers .....	50	.02	15	( <sup>3</sup> )
Receptionists and information clerks .....	1,220	.42	5	10
Typists .....	220	.08	16	1
Typists, word processing equipment .....	60	.02	9	1
Personnel clerks, except payroll and timekeeping .....	120	.04	7	2
File clerks .....	120	.04	11	1
Bookkeeping, accounting, and auditing clerks .....	3,100	1.06	3	28
Payroll and timekeeping clerks .....	460	.16	4	6
Billing, cost and rate clerks .....	1,310	.45	5	9
General office clerks .....	4,420	1.52	3	24
Electronic data processing and other office machine operators .....	560	.19	n.a.	n.a.
Computer operators, except peripheral equipment .....	190	.07	10	2
Data entry keyers, except composing .....	200	.07	7	2

See footnotes at end of table.

**Table 5. Local and suburban transit and interurban highway passenger transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 41)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other office machine operators .....	170	0.06	n.a.	n.a.
Switchboard operators .....	900	.31	10	3
Material recording, scheduling, dispatching, and distributing workers .....	11,970	4.11	n.a.	n.a.
Dispatchers, police, fire, and ambulance .....	2,190	.75	4	10
Dispatchers, except police, fire, and ambulance .....	8,840	3.03	3	30
Stock clerks, stockroom, warehouse or storage yard .....	440	.15	8	3
Traffic, shipping, and receiving clerks .....	360	.12	14	1
All other material recording, scheduling, and distributing workers .....	140	.05	15	1
All other clerical and administrative support workers .....	410	.14	n.a.	n.a.
Service occupations .....	11,970	4.11	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	410	.14	7	2
Guards and watch guards .....	260	.09	24	1
Food and beverage preparation and service workers .....	80	.03	38	( <sup>3</sup> )
Ambulance drivers and attendants, except emergency medical technicians .....	5,090	1.75	6	7
Cleaning and building service workers, except private households .....	1,210	.42	5	9
Guides .....	810	.28	14	1
Baggage porters and bellhops .....	840	.29	10	2
Transportation attendants, except flight attendants and baggage porters .....	410	.14	18	1
All other service workers .....	2,860	.98	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	205,910	70.65	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	3,690	1.27	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	770	.26	3	6
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	2,820	.97	4	17
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	100	.03	8	1
Inspectors and related workers .....	100	.03	n.a.	n.a.
Mechanics, installers, and repairers .....	18,690	6.41	n.a.	n.a.
Maintenance repairers, general utility .....	990	.34	7	7
Automotive mechanics .....	3,130	1.07	4	15
Automotive body and related repairers .....	940	.32	6	4
Bus and truck mechanics and diesel engine specialists .....	12,430	4.26	3	30
All other mechanics, installers, and repairers .....	1,200	.41	n.a.	n.a.
Machine setters, set-up operators, operators and tenders .....	160	.05	n.a.	n.a.
Motor vehicle operators .....	175,800	60.32	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	770	.26	20	1
Truck drivers, light, include delivery and route workers .....	710	.24	16	2
Bus drivers .....	60,240	20.67	2	28
Bus drivers, school .....	80,810	27.73	2	24
Taxi drivers and chauffeurs .....	33,270	11.41	2	21
Service station attendants .....	540	.19	8	2

See footnotes at end of table.

**Table 5. Local and suburban transit and interurban highway passenger transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 41)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other transportation and material moving equipment operators .....	910	0.31	14	2
Vehicle washers and equipment cleaners .....	4,310	1.48	3	18
All other helpers, laborers, and material movers, hand .....	1,020	.35	9	3
All other production, construction, operating, maintenance, and material handling workers .....	690	.24	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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



**Table 6. Motor freight transportation and warehousing: Employment, relative error, and percent of establishment reporting selected occupations, May 1985**

(SIC 42)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,347,920	100.00	--	--
Managerial and administrative occupations .....	67,040	4.97	n.a.	n.a.
Financial managers .....	2,380	.18	6	8
Personnel, training, and labor relations managers .....	1,640	.12	6	6
Purchasing managers .....	480	.04	10	2
Marketing, advertising, and public relations managers .....	2,060	.15	8	6
Administrative services managers .....	930	.07	9	3
Communications, transportation, and utilities operations managers .....	40,940	3.04	3	48
General managers and top executives .....	14,210	1.05	4	21
All other managers and administrators .....	4,400	.33	9	4
Professional, paraprofessional, and technical occupations .....	13,050	.97	n.a.	n.a.
Management support workers .....	9,020	.67	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	6,050	.45	n.a.	n.a.
Accountants and auditors .....	5,670	.42	6	12
Budget analysts .....	200	.01	18	1
All other financial specialists .....	180	.01	18	( <sup>3</sup> )
Purchasing agents, except wholesale and retail trade, and farm products .....	310	.02	15	1
Personnel, training, and labor relations specialists .....	1,360	.10	8	3
Compliance officers and enforcement inspectors, except construction .....	530	.04	14	1
All other management support workers .....	770	.06	20	1
Engineers .....	700	.05	18	1
Engineering and related technicians and technologists .....	390	.03	15	( <sup>3</sup> )
Computer scientists and related workers .....	2,120	.16	n.a.	n.a.
Systems analysts, electronic data processing .....	660	.05	12	2
Computer programmers .....	1,080	.08	8	3
Computer programmer aides .....	380	.03	11	1
All other professional, paraprofessional, and technical workers .....	820	.06	n.a.	n.a.
Sales and related occupations .....	30,580	2.27	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	2,680	.20	8	4
Sales agents, selected business services .....	23,200	1.72	4	24
Cashiers .....	1,530	.11	13	2
All other sales and related workers .....	3,170	.24	14	3
Clerical and administrative support occupations .....	220,930	16.39	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	7,110	.53	5	12
Credit checkers .....	540	.04	12	1
Adjustment clerks .....	4,330	.32	7	5
Secretaries .....	23,910	1.77	4	33
Stenographers .....	220	.02	20	( <sup>3</sup> )
Receptionists and information clerks .....	1,680	.12	11	5
Typists .....	1,480	.11	12	2
Typists, word processing equipment .....	450	.03	11	1
Personnel clerks, except payroll and timekeeping .....	1,140	.08	7	4
Correspondence clerks .....	720	.05	14	1
File clerks .....	1,430	.11	8	3
Bookkeeping, accounting, and auditing clerks .....	25,580	1.90	3	35
Payroll and timekeeping clerks .....	2,670	.20	5	7

See footnotes at end of table.

**Table 6. Motor freight transportation and warehousing: Employment, relative error, and percent of establishment reporting selected occupations, May 1985—Continued**

(SIC 42)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Billing, cost and rate clerks .....	20,810	1.54	4	26
General office clerks .....	42,920	3.18	3	39
Electronic data processing and other office machine operators .....	10,820	.80	n.a.	n.a.
Billing, posting, and calculating machine operators .....	5,470	.41	7	7
Computer operators, except peripheral equipment .....	1,310	.10	7	3
Peripheral EDP equipment operators .....	310	.02	15	1
Data entry keyers, except composing .....	3,560	.26	7	4
All other office machine operators .....	170	.01	19	( <sup>3</sup> )
Switchboard operators .....	1,740	.13	12	5
Messengers .....	1,750	.13	26	2
Material recording, scheduling, dispatching, and distributing workers .....	68,380	5.07	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	30,810	2.29	3	36
Production, planning, and expediting clerks .....	1,320	.10	10	1
Stock clerks, stockroom, warehouse or storage yard .....	17,720	1.31	6	12
Traffic, shipping, and receiving clerks .....	16,310	1.21	7	11
All other material recording, scheduling, and distributing workers .....	2,220	.16	16	1
All other clerical and administrative support workers .....	3,250	.24	13	2
Service occupations .....	10,650	.79	n.a.	n.a.
Guards and watch guards .....	1,580	.12	11	3
Food and beverage preparation and service workers .....	180	.01	39	( <sup>3</sup> )
Cleaning and building service workers, except private households .....	6,960	.52	7	13
All other service workers .....	1,930	.14	35	1
Agriculture, forestry, fishing, and related occupations .....	1,700	.13	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	1,003,970	74.48	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	44,740	3.32	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	3,470	.26	5	8
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	25,170	1.87	4	23
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand .....	15,070	1.12	5	16
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,030	.08	14	2
Transportation inspectors .....	490	.04	15	1
All other inspectors, testers and related occupations .....	390	.03	17	1
Mechanics, installers, and repairers .....	81,230	6.03	n.a.	n.a.
Machinery maintenance mechanics .....	1,470	.11	14	1
Machinery maintenance workers .....	370	.03	21	1
Maintenance repairers, general utility .....	13,560	1.01	7	15
Automotive mechanics .....	8,270	.61	8	7
Automotive body and related repairers .....	2,460	.18	9	3

See footnotes at end of table.

**Table 6. Motor freight transportation and warehousing: Employment, relative error, and percent of establishment reporting selected occupations, May 1985—Continued**

(SIC 42)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Bus and truck mechanics and diesel engine specialists .....	51,220	3.80	3	34
Heating, air-conditioning, and refrigeration mechanics and installers .....	330	.02	15	1
Tire repairers and changers .....	2,140	.16	8	5
All other mechanics, installers, and repairers .....	1,410	.10	n.a.	n.a.
Construction trades workers, except material moving .....	1,230	.09	n.a.	n.a.
Carpenters .....	260	.02	26	1
Electricians .....	170	.01	25	( <sup>3</sup> )
All other construction trades workers .....	800	.06	36	( <sup>3</sup> )
Precision production workers .....	360	.03	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	1,340	.10	n.a.	n.a.
Painters, transportation equipment .....	200	.01	22	1
All other machine setters and set-up operators, except metal and plastic .....	240	.02	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	900	.07	22	1
Hand workers, n.e.c. ....	1,800	.13	n.a.	n.a.
Welders and cutters .....	760	.06	17	1
All other hand workers, n.e.c. ....	1,040	.08	21	1
Plant and system workers .....	670	.05	23	( <sup>3</sup> )
Motor vehicle operators .....	653,090	48.45	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	509,570	37.80	1	70
Truck drivers, light, include delivery and route workers .....	143,520	10.65	3	22
Service station attendants .....	990	.07	20	1
All other transportation and motor vehicle operators .....	10,980	.81	13	2
Material moving equipment operators .....	54,910	4.07	n.a.	n.a.
Hoist and winch operators .....	620	.05	31	( <sup>3</sup> )
Industrial truck and tractor operators .....	39,100	2.90	6	16
Conveyor operators and tenders .....	7,040	.52	29	1
All other material moving equipment operators .....	8,150	.60	12	2
Refuse collectors .....	22,410	1.66	10	4
Hand packers and packagers .....	24,230	1.80	8	8
Vehicle washers and equipment cleaners .....	3,320	.25	13	4
All other helpers, laborers, and material movers, hand .....	101,630	7.54	3	15
All other production, construction, operating, maintenance, and material handling workers .....	160	.01	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 7. Water transportation: Employment, relative error, and percent of establishments reporting selected occupations, April 1985**

(SIC 44)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	180,940	100.00	--	--
Managerial and administrative occupations .....	10,180	5.63	n.a.	n.a.
Financial managers .....	750	.41	8	11
Personnel, training, and labor relations managers .....	380	.21	7	8
Purchasing managers .....	200	.11	6	5
Marketing, advertising, and public relations managers .....	680	.38	10	7
Administrative services managers .....	350	.19	9	5
Communications, transportation, and utilities operations managers .....	3,330	1.84	5	36
General managers and top executives .....	2,800	1.55	5	27
All other managers and administrators .....	1,690	.93	8	10
Professional, paraprofessional, and technical occupations .....	6,750	3.73	n.a.	n.a.
Management support workers .....	3,220	1.78	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	1,810	1.00	n.a.	n.a.
Accountants and auditors .....	1,400	.77	5	17
Budget analysts .....	180	.10	16	2
All other financial specialists .....	230	.13	18	2
Purchasing agents, except wholesale and retail trade, and farm products .....	560	.31	8	10
Personnel, training, and labor relations specialists .....	280	.15	7	5
All other management support workers .....	570	.32	15	3
Engineers .....	1,250	.69	n.a.	n.a.
Mechanical engineers .....	140	.08	15	2
Marine engineers .....	900	.50	10	8
All other engineers .....	210	.12	27	1
Engineering and related technicians and technologists .....	190	.11	16	2
Computer scientists and related workers .....	870	.48	n.a.	n.a.
Systems analysts, electronic data processing .....	430	.24	20	3
Computer programmers .....	340	.19	11	4
Computer programmer aides .....	100	.06	21	1
Radio operators .....	480	.27	11	3
All other professional, paraprofessional, and technical workers .....	740	.41	n.a.	n.a.
Sales and related occupations .....	4,950	2.74	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	400	.22	11	5
Sales agents, selected business services .....	2,000	1.11	8	13
Cashiers .....	1,780	.98	9	13
All other sales and related workers .....	770	.43	11	6
Clerical and administrative support occupations .....	24,100	13.32	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	1,230	.68	6	12
Reservation and transportation ticket agents .....	1,400	.77	20	4
Secretaries .....	4,260	2.35	4	40
Stenographers .....	110	.06	17	1
Receptionists and information clerks .....	240	.13	8	6
Typists .....	320	.18	9	4
Typists, word processing equipment .....	130	.07	18	2
Personnel clerks, except payroll and timekeeping .....	180	.10	14	3
File clerks .....	130	.07	15	2
Bookkeeping, accounting, and auditing clerks .....	3,710	2.05	4	41
Payroll and timekeeping clerks .....	540	.30	5	10

See footnotes at end of table.

**Table 7. Water transportation: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 44)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Billing, cost and rate clerks .....	1,780	0.98	7	16
General office clerks .....	3,500	1.93	5	29
Electronic data processing and other office machine operators .....	970	.54	n.a.	n.a.
Billing, posting, and calculating machine operators .....	140	.08	15	2
Computer operators, except peripheral equipment .....	310	.17	11	3
Peripheral EDP equipment operators .....	60	.03	21	1
Data entry keyers, except composing .....	350	.19	13	3
All other office machine operators .....	110	.06	24	1
Switchboard operators .....	270	.15	7	6
Material recording, scheduling, dispatching, and distributing workers .....	4,240	2.34	n.a.	n.a.
Production, planning, and expediting clerks .....	460	.25	11	4
Stock clerks, stockroom, warehouse or storage yard .....	660	.36	13	5
Traffic, shipping, and receiving clerks .....	2,540	1.40	11	11
All other material recording, scheduling, and distributing workers .....	580	.32	14	3
All other clerical and administrative support workers .....	1,090	.60	n.a.	n.a.
Service occupations .....	8,040	4.44	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	300	.17	12	3
Guards and watch guards .....	750	.41	12	5
Food and beverage preparation and service workers .....	4,510	2.49	7	13
Cleaning and building service workers, except private households .....	1,330	.74	10	11
Guides .....	160	.09	37	1
Baggage porters and bellhops .....	160	.09	38	( <sup>3</sup> )
Transportation attendants, except flight attendants and baggage porters .....	230	.13	28	1
All other service workers .....	600	.33	20	2
Agriculture, forestry, fishing, and related occupations .....	120	.07	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	126,800	70.08	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	5,770	3.19	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	1,760	.97	5	23
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	3,610	2.00	15	19
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	400	.22	10	4
Transportation inspectors .....	210	.12	26	1
All other inspectors, testers and related occupations .....	110	.06	28	1
Mechanics, installers, and repairers .....	12,140	6.71	n.a.	n.a.
Machinery maintenance mechanics .....	3,390	1.87	n.a.	n.a.
Machinery maintenance mechanics, marine equipment .....	3,120	1.72	7	17
All other machinery maintenance mechanics .....	270	.15	18	2
Maintenance repairers, general utility .....	3,670	2.03	11	21
Automotive mechanics .....	130	.07	19	1

See footnotes at end of table.

**Table 7. Water transportation: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 44)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Bus and truck mechanics and diesel engine specialists .....	750	0.41	16	6
Mobile heavy equipment mechanics, except engines .....	410	.23	24	2
Small engine specialists .....	1,900	1.05	8	13
Radio mechanics .....	80	.04	28	1
Riggers .....	1,080	.60	18	6
All other mechanics, installers, and repairers .....	730	.40	15	3
Construction trades workers, except material moving .....	2,740	1.51	n.a.	n.a.
Carpenters .....	1,220	.67	10	10
Electricians .....	300	.17	13	3
Painters and paperhangers, construction and maintenance .....	770	.43	12	7
Plumbers, pipefitters, and steamfitters .....	290	.16	22	1
All other construction trades workers .....	160	.09	49	1
Precision production workers .....	50	.03	42	( <sup>3</sup> )
Machine setters, set-up operators, and tenders, except metal and plastic .....	580	.32	n.a.	n.a.
Boiler operators and tenders, low pressure .....	130	.07	25	1
Painters, transportation equipment .....	250	.14	25	1
All other machine setters and set-up operators, except metal and plastic .....	10	.01	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	190	.11	27	1
Hand workers, n.e.c. ....	1,710	.95	n.a.	n.a.
Welders and cutters .....	1,650	.91	9	9
All other hand workers, n.e.c. ....	60	.03	43	( <sup>3</sup> )
Plant and system workers .....	70	.04	n.a.	n.a.
Motor vehicle operators .....	2,350	1.30	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	1,970	1.09	14	5
Truck drivers, light, include delivery and route workers .....	380	.21	18	4
Captains, water vessel .....	10,490	5.80	4	33
Mates, ship, boat, and barge .....	5,510	3.05	5	18
Pilots, ship .....	1,800	.99	9	8
Motorboat operators .....	500	.28	22	3
Able seamen .....	9,060	5.01	10	13
Ordinary seamen and marine oilers .....	12,540	6.93	6	20
Ship engineers .....	6,470	3.58	5	15
Service station attendants .....	1,060	.59	13	7
All other transportation and motor vehicle operators .....	2,120	1.17	11	5
Material moving equipment operators .....	14,210	7.85	n.a.	n.a.
Longshore equipment operators .....	8,500	4.70	8	9
Hoist and winch operators .....	610	.34	11	4
Crane and tower operators .....	1,880	1.04	14	9
Industrial truck and tractor operators .....	2,790	1.54	8	10
All other material moving equipment operators .....	430	.24	29	2
Stevedores, except equipment operators .....	29,050	16.06	4	14
All other helpers, laborers, and material movers, hand .....	8,260	4.57	7	14

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 8. Air transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 45)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	520,480	100.00	--	--
Managerial and administrative occupations .....	20,430	3.93	n.a.	n.a.
Financial managers .....	960	.18	6	10
Personnel, training, and labor relations managers .....	790	.15	7	6
Purchasing managers .....	530	.10	9	6
Marketing, advertising, and public relations managers .....	1,700	.33	6	11
Administrative services managers .....	750	.14	10	5
Communications, transportation, and utilities operations managers .....	8,600	1.65	4	53
General managers and top executives .....	3,780	.73	5	22
All other managers and administrators .....	3,320	.64	10	8
Professional, paraprofessional, and technical occupations .....	27,700	5.32	n.a.	n.a.
Management support workers .....	9,240	1.78	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	3,460	.66	n.a.	n.a.
Accountants and auditors .....	2,370	.46	14	13
Budget analysts .....	370	.07	11	2
All other financial specialists .....	720	.14	16	2
Purchasing agents, except wholesale and retail trade, and farm products .....	960	.18	8	6
Personnel, training, and labor relations specialists .....	1,200	.23	11	5
All other management support workers .....	3,620	.70	14	3
Engineers .....	1,710	.33	n.a.	n.a.
Aeronautical and astronautical engineers .....	520	.10	17	2
Electrical and electronic engineers .....	450	.09	20	1
Industrial engineers, except safety .....	380	.07	20	1
All other engineers .....	360	.07	19	1
Engineering and related technicians and technologists .....	1,820	.35	n.a.	n.a.
Electrical and electronic engineering technicians and technologists .....	920	.18	11	3
All other engineering and related technicians and technologists .....	900	.17	16	2
Physical scientists .....	80	.02	n.a.	n.a.
Computer scientists and related workers .....	4,240	.81	n.a.	n.a.
Systems analysts, electronic data processing .....	2,340	.45	17	2
Computer programmers .....	1,740	.33	15	3
Computer programmer aides .....	160	.03	14	1
Operations and systems researchers and analysts, except computer .....	670	.13	17	1
Teachers and instructors, vocational education and training .....	3,330	.64	7	13
Health practitioners, technologists, technicians, and related health workers .....	220	.04	17	1
Public relations specialists and publicity writers .....	1,880	.36	32	3
Airplane dispatchers and air traffic controllers .....	2,220	.43	7	8
Radio operators .....	420	.08	13	3
All other professional, paraprofessional, and technical workers .....	1,870	.36	n.a.	n.a.
Sales and related occupations .....	13,430	2.58	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	2,180	.42	6	11
Sales agents, selected business services .....	5,530	1.06	7	19

See footnotes at end of table.

**Table 8. Air transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 45)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Travel agents .....	2,030	0.39	16	5
Cashiers .....	650	.12	13	3
All other sales and related workers .....	3,040	.58	9	9
Clerical and administrative support occupations .....	162,460	31.21	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	5,200	1.00	4	17
Adjustment clerks .....	1,340	.26	10	5
Reservation and transportation ticket agents .....	81,640	15.69	1	35
Secretaries .....	8,140	1.56	4	47
Stenographers .....	260	.05	14	1
Receptionists and information clerks .....	860	.17	12	6
Typists .....	990	.19	15	3
Typists, word processing equipment .....	520	.10	18	2
Personnel clerks, except payroll and timekeeping .....	610	.12	10	4
Correspondence clerks .....	300	.06	24	1
File clerks .....	270	.05	12	2
Bookkeeping, accounting, and auditing clerks .....	7,110	1.37	6	31
Payroll and timekeeping clerks .....	500	.10	6	6
Billing, cost and rate clerks .....	1,880	.36	7	11
General office clerks .....	6,580	1.26	5	29
Electronic data processing and other office machine operators .....	3,630	.70	n.a.	n.a.
Billing, posting, and calculating machine operators .....	260	.05	22	1
Computer operators, except peripheral equipment .....	1,090	.21	17	2
Peripheral EDP equipment operators .....	500	.10	12	1
Data entry keyers, except composing .....	1,660	.32	11	4
All other office machine operators .....	120	.02	19	1
Switchboard operators .....	240	.05	9	4
Material recording, scheduling, dispatching, and distributing workers .....	38,470	7.39	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	2,340	.45	17	8
Production, planning, and expediting clerks .....	1,920	.37	8	5
Transportation agents .....	25,840	4.96	5	15
Stock clerks, stockroom, warehouse or storage yard .....	5,230	1.00	7	12
Traffic, shipping, and receiving clerks .....	1,810	.35	12	4
All other material recording, scheduling, and distributing workers .....	1,330	.26	29	2
All other clerical and administrative support workers .....	3,920	.75	14	4
Service occupations .....	93,800	18.02	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	3,030	.58	6	9
Guards and watch guards .....	1,160	.22	13	2
Food and beverage preparation and service workers .....	3,710	.71	12	3
Cleaning and building service workers, except private households .....	3,140	.60	6	14
Baggage porters and bellhops .....	5,840	1.12	8	7
Flight attendants .....	72,440	13.92	( <sup>3</sup> )	7
All other service workers .....	4,480	.86	10	5
Agriculture, forestry, fishing, and related occupations .....	30	.01	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	202,630	38.93	n.a.	n.a.

See footnotes at end of table.



**Table 8. Air transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 45)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	9,690	1.86	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	5,710	1.10	5	26
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	2,220	.43	5	14
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,760	.34	12	4
Transportation inspectors .....	2,390	.46	13	5
All other inspectors, testers and related occupations .....	730	.14	19	2
Mechanics, installers, and repairers .....	71,880	13.81	n.a.	n.a.
Machinery maintenance mechanics .....	510	.10	12	2
Maintenance repairers, general utility .....	3,840	.74	8	12
Automotive mechanics .....	1,430	.27	8	5
Bus and truck mechanics and diesel engine specialists .....	1,040	.20	13	3
Mobile heavy equipment mechanics, except engines .....	150	.03	26	( <sup>3</sup> )
Aircraft mechanics .....	54,230	10.42	2	51
Aircraft engine specialists .....	6,480	1.25	11	10
Radio mechanics .....	950	.18	14	3
Electronics repairers, commercial and industrial equipment .....	850	.16	10	4
Electrical installers and repairers, transportation equipment .....	1,730	.33	10	6
All other mechanics, installers, and repairers .....	670	.13	14	2
Construction trades workers, except material moving .....	350	.07	n.a.	n.a.
Carpenters .....	160	.03	21	1
Electricians .....	100	.02	26	1
All other construction trades workers .....	90	.02	39	( <sup>3</sup> )
Machinists .....	900	.17	22	1
Precision workers, n.e.c. ....	330	.06	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	780	.15	n.a.	n.a.
Painters, transportation equipment .....	480	.09	13	2
All other machine setters and set-up operators, except metal and plastic .....	150	.03	25	( <sup>3</sup> )
All other machine operators and tenders, except metal and plastic .....	150	.03	24	( <sup>3</sup> )
Hand workers, n.e.c. ....	880	.17	n.a.	n.a.
Welders and cutters .....	370	.07	19	1
All other hand workers, n.e.c. ....	510	.10	22	1
Motor vehicle operators .....	8,520	1.64	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	1,960	.38	12	4
Truck drivers, light, include delivery and route workers .....	6,560	1.26	10	9
Aircraft pilots and flight engineers .....	58,620	11.26	1	38
All other transportation and motor vehicle operators .....	2,130	.41	11	5
Material moving equipment operators .....	1,380	.27	n.a.	n.a.
Industrial truck and tractor operators .....	700	.13	20	1
All other material moving equipment operators .....	680	.13	26	1
Vehicle washers and equipment cleaners .....	6,580	1.26	6	13
All other helpers, laborers, and material movers, hand .....	37,340	7.17	4	23
All other production, construction, operating, maintenance, and material handling workers .....	130	.02	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.

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

**Table 9. Pipelines, except natural gas: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 46)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	19,190	100.00	--	--
Managerial and administrative occupations .....	1,580	8.23	n.a.	n.a.
Financial managers .....	110	.57	16	9
Personnel, training, and labor relations managers .....	70	.36	17	7
Administrative services managers .....	60	.31	14	7
Communications, transportation, and utilities operations managers .....	460	2.40	7	34
General managers and top executives .....	540	2.81	7	36
All other managers and administrators .....	340	1.77	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	3,180	16.57	n.a.	n.a.
Management support workers .....	690	3.60	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	330	1.72	n.a.	n.a.
Purchasing agents, except wholesale and retail trade, and farm products .....	70	.36	14	8
Personnel, training, and labor relations specialists .....	80	.42	11	8
All other management support workers .....	210	1.09	15	9
Engineers .....	950	4.95	n.a.	n.a.
Civil engineers, including traffic .....	230	1.20	13	14
Electrical and electronic engineers .....	150	.78	13	13
Mechanical engineers .....	340	1.77	10	16
All other engineers .....	230	1.20	16	10
Engineering and related technicians and technologists .....	1,130	5.89	n.a.	n.a.
Civil engineering technicians and technologists .....	60	.31	16	4
Electrical and electronic engineering technicians and technologists .....	440	2.29	9	25
Mechanical engineering technicians and technologists .....	210	1.09	12	13
Drafters .....	190	.99	8	14
All other engineering and related technicians and technologists .....	230	1.20	12	14
Computer scientists and related workers .....	210	1.09	n.a.	n.a.
Systems analysts, electronic data processing .....	160	.83	22	6
All other computer systems analysts, programmers, and programmer aides .....	50	.26	n.a.	n.a.
All other professional, paraprofessional, and technical workers .....	200	1.04	n.a.	n.a.
Sales and related occupations .....	40	.21	n.a.	n.a.
Clerical and administrative support occupations .....	2,350	12.25	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	190	.99	11	20
Secretaries .....	460	2.40	7	26
Typists, word processing equipment .....	60	.31	18	5
Bookkeeping, accounting, and auditing clerks .....	300	1.56	11	13
General office clerks .....	440	2.29	7	35
Electronic data processing and other office machine operators .....	120	.63	n.a.	n.a.
Material recording, scheduling, dispatching, and distributing workers .....	490	2.55	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	310	1.62	14	9
All other material recording, scheduling, and distributing workers .....	180	.94	n.a.	n.a.
All other clerical and administrative support workers .....	290	1.51	n.a.	n.a.

See footnotes at end of table.

**Table 9. Pipelines, except natural gas: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 46)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Service occupations .....	80	0.42	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	11,960	62.32	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	1,400	7.30	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	410	2.14	8	33
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	290	1.51	10	20
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	240	1.25	10	17
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	460	2.40	8	29
Inspectors and related workers .....	160	.83	n.a.	n.a.
Mechanics, installers, and repairers .....	1,650	8.60	n.a.	n.a.
Machinery maintenance mechanics .....	500	2.61	9	27
Maintenance repairers, general utility .....	540	2.81	12	23
Bus and truck mechanics and diesel engine specialists .....	50	.26	39	1
Precision instrument repairers .....	360	1.88	11	18
Mechanical control and valve installers and repairers .....	110	.57	17	7
All other mechanics, installers, and repairers .....	90	.47	n.a.	n.a.
Construction trades workers, except material moving .....	1,550	8.08	n.a.	n.a.
Electricians .....	280	1.46	11	16
Plumbers, pipefitters, and steamfitters .....	160	.83	23	5
Pipelayers .....	720	3.75	11	16
All other construction trades workers .....	390	2.03	14	11
Machine setters, set-up operators, operators and tenders .....	110	.57	20	4
Hand workers, n.e.c. .....	550	2.87	n.a.	n.a.
Welders and cutters .....	340	1.77	7	30
All other hand workers, n.e.c. .....	210	1.09	18	4
Plant and system workers .....	2,260	11.78	n.a.	n.a.
Gaugers .....	2,060	10.73	5	46
All other plant and system operators .....	200	1.04	n.a.	n.a.
Motor vehicle operators .....	720	3.75	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	620	3.23	14	15
Truck drivers, light, include delivery and route workers .....	100	.52	16	9
All other transportation and motor vehicle operators .....	100	.52	26	4
Material moving equipment operators .....	2,460	12.82	n.a.	n.a.
Main line station engineers .....	2,320	12.09	10	43
All other material moving equipment operators .....	140	.73	23	6
Helpers - plumbers, pipefitters, and steamfitters .....	240	1.25	18	7
All other helpers, laborers, and material movers, hand .....	700	3.65	11	20
All other production, construction, operating, maintenance, and material handling workers .....	60	.31	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.

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

**Table 10. Transportation services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985**

(SIC 47)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	270,750	100.00	--	--
Managerial and administrative occupations .....	19,090	7.05	n.a.	n.a.
Financial managers .....	700	.26	5	4
Personnel, training, and labor relations managers .....	320	.12	6	2
Purchasing managers .....	200	.07	18	1
Marketing, advertising, and public relations managers .....	1,620	.60	6	5
Administrative services managers .....	480	.18	12	2
Communications, transportation, and utilities operations managers .....	10,480	3.87	3	27
General managers and top executives .....	3,990	1.47	4	12
All other managers and administrators .....	1,300	.48	7	3
Professional, paraprofessional, and technical occupations .....	7,500	2.77	n.a.	n.a.
Management support workers .....	4,980	1.84	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	4,230	1.56	n.a.	n.a.
Accountants and auditors .....	3,930	1.45	4	14
Budget analysts .....	60	.02	15	( <sup>3</sup> )
All other financial specialists .....	240	.09	24	( <sup>3</sup> )
Purchasing agents, except wholesale and retail trade, and farm products .....	110	.04	19	1
Personnel, training, and labor relations specialists .....	170	.06	17	1
All other management support workers .....	470	.17	14	1
Engineers .....	260	.10	17	( <sup>3</sup> )
Physical and life science technicians and technologists .....	60	.02	42	( <sup>3</sup> )
Computer scientists and related workers .....	1,160	.43	n.a.	n.a.
Systems analysts, electronic data processing .....	260	.10	10	1
Computer programmers .....	600	.22	9	2
Computer programmer aides .....	300	.11	16	1
All other professional, paraprofessional, and technical workers .....	1,040	.38	n.a.	n.a.
Sales and related occupations .....	111,740	41.27	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	3,260	1.20	5	8
Sales agents, selected business services .....	10,860	4.01	4	20
Travel agents .....	96,150	35.51	1	64
Cashiers .....	460	.17	16	1
All other sales and related workers .....	1,010	.37	13	2
Clerical and administrative support occupations .....	93,790	34.64	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	15,470	5.71	2	41
Adjustment clerks .....	1,700	.63	9	2
Travel clerks .....	1,800	.66	13	2
Reservation and transportation ticket agents .....	2,800	1.03	10	2
Secretaries .....	8,140	3.01	3	26
Stenographers .....	80	.03	19	( <sup>3</sup> )
Receptionists and information clerks .....	3,730	1.38	5	16
Typists .....	2,580	.95	7	7
Typists, word processing equipment .....	1,120	.41	9	4
Personnel clerks, except payroll and timekeeping .....	120	.04	10	1
File clerks .....	360	.13	10	2
Order clerks, materials, merchandise, and service .....	2,890	1.07	8	5
Bookkeeping, accounting, and auditing clerks .....	13,970	5.16	2	43

See footnotes at end of table.

**Table 10. Transportation services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 47)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Payroll and timekeeping clerks .....	230	0.08	7	2
Billing, cost and rate clerks .....	6,510	2.40	5	11
General office clerks .....	12,530	4.63	4	20
Electronic data processing and other office machine operators .....	5,010	1.85	n.a.	n.a.
Billing, posting, and calculating machine operators .....	1,200	.44	9	3
Computer operators, except peripheral equipment .....	1,610	.59	7	6
Peripheral EDP equipment operators .....	140	.05	25	( <sup>3</sup> )
Data entry keyers, except composing .....	1,830	.68	10	3
All other office machine operators .....	230	.08	42	( <sup>3</sup> )
Switchboard operators .....	960	.35	5	6
Messengers .....	2,070	.76	7	5
Material recording, scheduling, dispatching, and distributing workers .....	10,260	3.79	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	2,200	.81	7	6
Stock clerks, stockroom, warehouse or storage yard .....	1,660	.61	9	4
Traffic, shipping, and receiving clerks .....	5,730	2.12	6	8
All other material recording, scheduling, and distributing workers .....	670	.25	19	1
All other clerical and administrative support workers .....	1,460	.54	11	2
Service occupations .....	5,060	1.87	n.a.	n.a.
Guards and watch guards .....	380	.14	27	( <sup>3</sup> )
Food and beverage preparation and service workers .....	130	.05	36	( <sup>3</sup> )
Cleaning and building service workers, except private households .....	970	.36	8	4
Guides .....	3,300	1.22	10	4
All other service workers .....	280	.10	26	1
Agriculture, forestry, fishing, and related occupations .....	150	.06	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	33,420	12.34	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	980	.36	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	210	.08	15	1
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	340	.13	13	1
First-line supervisors and manager/supervisors - helpers, laborers, and material movers, hand .....	280	.10	11	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	150	.06	20	( <sup>3</sup> )
Transportation inspectors .....	940	.35	13	2
All other inspectors, testers and related occupations .....	240	.09	28	( <sup>3</sup> )
Mechanics, installers, and repairers .....	1,960	.72	n.a.	n.a.
Maintenance repairers, general utility .....	920	.34	11	2
Automotive mechanics .....	220	.08	16	1
Bus and truck mechanics and diesel engine specialists .....	440	.16	12	2
All other mechanics, installers, and repairers .....	380	.14	24	( <sup>3</sup> )

See footnotes at end of table.

**Table 10. Transportation services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 47)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Construction trades workers, except material moving .....	380	0.14	n.a.	n.a.
Carpenters .....	100	.04	39	( <sup>3</sup> )
Painters and paperhangers, construction and maintenance .....	140	.05	25	( <sup>3</sup> )
All other construction trades workers .....	140	.05	42	( <sup>3</sup> )
Machine setters, set-up operators, operators and tenders .....	70	.03	31	( <sup>3</sup> )
Hand workers, n.e.c. ....	1,750	.65	n.a.	n.a.
Welders and cutters .....	1,430	.53	15	1
All other hand workers, n.e.c. ....	320	.12	22	( <sup>3</sup> )
Motor vehicle operators .....	12,950	4.78	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	6,070	2.24	7	5
Truck drivers, light, include delivery and route workers .....	6,590	2.43	6	7
Taxi drivers and chauffeurs .....	290	.11	31	( <sup>3</sup> )
All other transportation and motor vehicle operators .....	2,100	.78	14	1
Material moving equipment operators .....	3,380	1.25	n.a.	n.a.
Longshore equipment operators .....	80	.03	39	( <sup>3</sup> )
Industrial truck and tractor operators .....	1,810	.67	10	2
All other material moving equipment operators .....	1,490	.55	37	( <sup>3</sup> )
Stevedores, except equipment operators .....	500	.18	36	( <sup>3</sup> )
Hand packers and packagers .....	3,320	1.23	9	2
All other helpers, laborers, and material movers, hand .....	4,640	1.71	8	3
All other production, construction, operating, maintenance, and material handling workers .....	210	.08	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# Communications

The communications industry includes establishments that furnish communication services between two or more parties, whether by wire or radio, and whether intended to be received visually or aurally. These services can be domestic, international, marine, or aeronautical. Radio and television broadcasting is a small group of the industry. The industry also includes the rapidly expanding cable television service, transradio press service, operation of radio stations, and services for the exchange or recording of messages.

In 1985, 1.3 million persons were employed in the communications industry. Telephone communications employed 69 percent of the total. Radio and television broadcasting employed 18 percent; communications services 11 percent; and telegraph communication 1 percent.

Between 1982 and 1985, total employment in communications declined 7 percent. Employment changes in the component industry groups are shown in the following tabulation:

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Telephone . . . . .	1,077,460	920,290	-14.6
Radio and television . . . . .	218,970	239,710	9.5
Communication services . . . . .	105,120	146,690	39.5
Telegraph . . . . .	19,510	15,400	-21.1

Employment in the telephone and telegraph components declined sharply as deregulation and divestiture took place in the telephone industry. The communication services component grew dramatically. This was due, in large part, to the continued expansion of the cable television industry.

Clerical and administrative support workers constituted the largest occupational group in communications, with 38 percent (table 11). Ranking second, production and related workers accounted for 28 percent. The remaining occupational employment was distributed as follows: Professional, paraprofessional, and technical workers, 19 percent; managerial and administrative workers, 9 percent; sales and related workers, 5 percent; and service workers, 1 percent.

Some of the apparent changes in occupational employment are the result of changes in classification. First-line supervisors were reclassified from managerial and administrative occupations to their respective occupations, affecting primarily sales supervisors; cashiers were shifted from clerical and administrative support occupations to sales occupations.

Much of the change, however, is explained by industry changes that occurred as the result of deregulation and divestiture. The 12-percent increase of professional, paraprofessional, and technical workers may have been caused by an increase in financial and market planning in the industry, and by the technological advances that have been made in telecommunications.

**Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 48)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,322,070	100.00	--	--
Managerial and administrative occupations .....	115,180	8.71	n.a.	n.a.
Financial managers .....	9,450	.71	4	34
Personnel, training, and labor relations managers .....	2,390	.18	5	8
Purchasing managers .....	1,000	.08	7	4
Marketing, advertising, and public relations managers .....	18,320	1.39	2	50
Administrative services managers .....	3,200	.24	7	7
Engineering, mathematical, and natural sciences managers .....	5,650	.43	4	17
Communications, transportation, and utilities operations managers .....	24,470	1.85	4	44
General managers and top executives .....	23,120	1.75	2	35
All other managers and administrators .....	27,580	2.09	6	13
Professional, paraprofessional, and technical occupations .....	255,950	19.36	n.a.	n.a.
Management support workers .....	34,090	2.58	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	12,210	.92	n.a.	n.a.
Accountants and auditors .....	8,240	.62	5	17
Budget analysts .....	1,380	.10	7	3
All other financial specialists .....	2,590	.20	10	3
Purchasing agents, except wholesale and retail trade, and farm products .....	1,390	.11	11	4
Personnel, training, and labor relations specialists .....	5,060	.38	9	6
All other management support workers .....	15,430	1.17	9	7
Engineers .....	32,900	2.49	n.a.	n.a.
Civil engineers, including traffic .....	2,070	.16	10	2
Electrical and electronic engineers .....	20,360	1.54	5	19
Industrial engineers, except safety .....	1,540	.12	15	1
Mechanical engineers .....	710	.05	12	1
All other engineers .....	8,220	.62	16	4
Engineering and related technicians and technologists .....	33,110	2.50	n.a.	n.a.
Civil engineering technicians and technologists .....	590	.04	15	1
Electrical and electronic engineering technicians and technologists .....	15,800	1.20	6	15
Mechanical engineering technicians and technologists .....	490	.04	27	1
Drafters .....	6,080	.46	7	7
All other engineering and related technicians and technologists .....	10,150	.77	12	4
Physical scientists .....	160	.01	37	( <sup>3</sup> )
Computer scientists and related workers .....	19,350	1.46	n.a.	n.a.
Systems analysts, electronic data processing .....	7,040	.53	6	5
Computer programmers .....	10,380	.79	9	6
All other computer systems analysts, programmers, and programmer aides .....	1,930	.15	n.a.	n.a.
Social scientists, including urban and regional planners .....	810	.06	20	1
Lawyers .....	1,150	.09	9	2
Teachers and instructors, vocational education and training .....	1,010	.08	19	1
Health practitioners, technologists, technicians, and related health workers .....	400	.03	12	1
Writers and editors .....	7,750	.59	5	22
Public relations specialists and publicity writers .....	2,990	.23	6	9
Reporters and correspondents .....	10,140	.77	3	17

See footnotes at end of table.



**Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 48)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Broadcast news analysts .....	7,300	0.55	3	18
Announcers, radio and television .....	44,910	3.40	2	40
Photographers .....	3,800	.29	5	6
Camera operators, television and motion picture .....	6,560	.50	6	10
Broadcast technicians .....	26,960	2.04	5	28
Film editors .....	1,350	.10	6	5
Artists and related workers .....	1,540	.12	6	6
Designers, except interior designers .....	610	.05	8	2
Producers, directors, actors, and other entertainers .....	8,230	.62	7	10
Radio operators .....	1,620	.12	15	2
All other professional, paraprofessional, and technical workers .....	9,210	.70	n.a.	n.a.
<b>Sales and related occupations .....</b>	<b>71,250</b>	<b>5.39</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, sales and related workers .....	7,380	.56	5	14
Sales agents, selected business services .....	24,360	1.84	5	20
Sales agents, advertising .....	19,740	1.49	3	25
Cashiers .....	5,000	.38	6	10
All other sales and related workers .....	14,770	1.12	5	12
<b>Clerical and administrative support occupations .....</b>	<b>496,830</b>	<b>37.58</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	38,590	2.92	1	22
Credit authorizers .....	190	.01	15	1
Credit checkers .....	470	.04	16	1
Adjustment clerks .....	22,960	1.74	2	7
Bill and account collectors .....	4,550	.34	12	6
Secretaries .....	28,830	2.18	5	50
Stenographers .....	3,480	.26	9	3
Receptionists and information clerks .....	5,540	.42	3	26
Typists .....	8,240	.62	10	8
Typists, word processing equipment .....	2,380	.18	8	5
Personnel clerks, except payroll and timekeeping .....	2,680	.20	14	5
Correspondence clerks .....	520	.04	14	1
File clerks .....	4,830	.37	15	3
Order clerks, materials, merchandise, and service .....	11,040	.84	10	6
Statistical clerks .....	4,340	.33	8	3
Customer service representatives, utilities .....	68,920	5.21	1	22
Bookkeeping, accounting, and auditing clerks .....	20,400	1.54	4	42
Payroll and timekeeping clerks .....	1,540	.12	6	6
Billing, cost and rate clerks .....	5,230	.40	8	11
General office clerks .....	70,660	5.34	1	35
<b>Electronic data processing and other office machine operators .....</b>	<b>18,640</b>	<b>1.41</b>	<b>n.a.</b>	<b>n.a.</b>
Billing, posting, and calculating machine operators .....	2,850	.22	8	7
Computer operators, except peripheral equipment .....	7,920	.60	6	15
Peripheral EDP equipment operators .....	1,510	.11	12	1
Data entry keyers, except composing .....	4,980	.38	7	7
All other office machine operators .....	1,380	.10	11	1
Switchboard operators .....	9,860	.75	15	10
Directory assistance operators .....	33,710	2.55	2	3
Central office operators .....	43,840	3.32	3	7
Telegraph and teletype operators .....	3,250	.25	24	2
All other communications equipment operators .....	2,900	.22	28	2
Mail clerks, except mail machine operators and postal service .....	2,170	.16	9	5
Messengers .....	1,300	.10	9	4
Material recording, scheduling, dispatching, and distributing workers .....	53,770	4.07	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	12,710	.96	8	13

See footnotes at end of table.

**Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 48)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Production, planning, and expediting clerks .....	26,740	2.02	1	8
Stock clerks, stockroom, warehouse or storage yard .....	7,490	.57	5	12
Traffic, shipping, and receiving clerks .....	2,260	.17	6	6
All other material recording, scheduling, and distributing workers .....	4,570	.35	17	2
All other clerical and administrative support workers .....	22,000	1.66	7	9
Service occupations .....	12,000	.91	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	1,550	.12	8	4
Guards and watch guards .....	800	.06	23	2
Food and beverage preparation and service workers .....	220	.02	16	( <sup>3</sup> )
Cleaning and building service workers, except private households .....	8,000	.61	6	21
All other service workers .....	1,430	.11	36	1
Agriculture, forestry, fishing, and related occupations .....	90	.01	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	370,770	28.04	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	53,210	4.02	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	47,280	3.58	1	34
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	5,930	.45	13	5
Precision inspectors, testers, and graders .....	6,630	.50	13	4
All other inspectors, testers and related occupations .....	630	.05	14	1
Mechanics, installers, and repairers .....	298,120	22.55	n.a.	n.a.
Maintenance repairers, general utility .....	6,020	.46	6	11
Automotive mechanics .....	2,920	.22	8	5
Bus and truck mechanics and diesel engine specialists .....	270	.02	11	1
Central office and PBX installers and repairers .....	75,830	5.74	1	21
Frame wirers, central office .....	13,360	1.01	9	9
Telegraph and teletype installers and maintainers .....	1,110	.08	15	1
Radio mechanics .....	2,250	.17	12	2
All other communications equipment mechanics, installers, and repairers .....	4,660	.35	10	4
Telephone and cable TV line installers and repairers .....	94,280	7.13	1	36
Electronics repairers, commercial and industrial equipment .....	5,200	.39	9	5
Electrical powerline installers and repairers .....	16,980	1.28	8	6
Station installers and repairers, telephone .....	57,550	4.35	1	15
All other electrical and electronic equipment mechanics, installers, and repairers .....	12,350	.93	10	2
All other mechanics, installers, and repairers .....	5,340	.40	n.a.	n.a.
Construction trades workers, except material moving .....	1,670	.13	n.a.	n.a.
Carpenters .....	380	.03	26	1
Electricians .....	350	.03	24	1
Painters and paperhangers, construction and maintenance .....	180	.01	35	( <sup>3</sup> )
All other construction trades workers .....	760	.06	12	1

See footnotes at end of table.

**Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 48)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Precision production workers .....	1,440	0.11	n.a.	n.a.
Machine setters, set-up operators, operators and tenders .....	340	.03	19	1
Plant and system workers .....	660	.05	n.a.	n.a.
Motor vehicle operators .....	1,520	.11	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	570	.04	25	1
Truck drivers, light, include delivery and route workers .....	950	.07	12	2
All other transportation and material moving equipment operators .....	650	.05	13	1
Helpers - mechanics and repairers .....	1,420	.11	15	2
All other helpers, laborers, and material movers, hand .....	3,930	.30	10	3
All other production, construction, operating, maintenance, and material handling workers .....	550	.04	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# Utilities

The utilities industry includes establishments which generate, transmit, or distribute electricity, gas, or steam and may also provide related transportation, communication, and refrigeration services. Other types of services include water supply and irrigation systems, and sanitation systems which collect and dispose of garbage, sewage, and other wastes.

In 1985, employment in utilities totaled 904,390, an increase of 4 percent from 1982. Forty-nine percent of the jobholders worked in electric services. Establishments providing combination electric, gas, and other utility services, and firms that produce and distribute gas accounted for 22 percent. The balance was in gas production/distribution (19 percent), sanitary services (7 percent), water supply and irrigation systems (3 percent), and the steam supply industry (less than 1 percent).

About one-half of the workers in the utilities industry held production and related jobs. (See table 12.) Clerical occupations, primarily general office clerks and meter readers, accounted for about one-fourth of industry employment. Professional, paraprofessional, and technical occupations accounted for 17 percent. The largest occupation in the

professional category was electrical and electronic engineer, which accounted for nearly three-fourths of the employment in electric services. Managers and administrators ranked fourth among the occupational groups; nearly one-half were employed in electric services. Service workers accounted for 2 percent of the industry employment—more than half of these workers were cleaners and building service workers. The smallest occupational group, sales workers, accounted for less than 2 percent of utilities employment.

The following tabulation compares employment in the utilities components between 1982 and 1985:

	<i>Employment</i>		<i>Percent change, 1982-85</i>
	<i>1982</i>	<i>1985</i>	
Electric services . . . . .	417,200	445,700	6.8
Combined electric, gas, and other utilities . . . . .	199,890	199,800	( <sup>1</sup> )
Gas production/distribution . . . . .	174,860	171,500	-1.9
Sanitary services . . . . .	50,290	62,000	23.3
Water supply . . . . .	20,700	21,800	5.3
Irrigation systems . . . . .	2,560	2,400	-6.3
Steam supply . . . . .	1,240	1,200	-3.2

<sup>1</sup> Less than 0.5 percent.

**Table 12. Electric, gas, steam, water, and sanitary services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985**

(SIC 49)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	904,390	100.00	--	--
Managerial and administrative occupations .....	57,120	6.32	n.a.	n.a.
Financial managers .....	3,340	.37	4	13
Personnel, training, and labor relations managers .....	2,450	.27	4	11
Purchasing managers .....	980	.11	5	7
Marketing, advertising, and public relations managers .....	4,050	.45	4	21
Administrative services managers .....	2,080	.23	5	7
Engineering, mathematical, and natural sciences managers .....	6,630	.73	6	17
Communications, transportation, and utilities operations managers .....	13,980	1.55	3	47
General managers and top executives .....	11,580	1.28	4	34
All other managers and administrators .....	12,030	1.33	5	18
Professional, paraprofessional, and technical occupations .....	153,770	17.00	n.a.	n.a.
Management support workers .....	34,020	3.76	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	15,550	1.72	n.a.	n.a.
Accountants and auditors .....	11,090	1.23	4	24
Budget analysts .....	2,040	.23	6	6
All other financial specialists .....	2,420	.27	7	4
Purchasing agents, except wholesale and retail trade, and farm products .....	2,550	.28	5	9
Personnel, training, and labor relations specialists .....	5,880	.65	5	11
All other management support workers .....	10,040	1.11	5	11
Engineers .....	39,300	4.35	n.a.	n.a.
Chemical engineers .....	930	.10	9	3
Nuclear engineers .....	2,530	.28	9	2
Civil engineers, including traffic .....	4,200	.46	7	11
Electrical and electronic engineers .....	17,860	1.97	5	18
Industrial engineers, except safety .....	2,760	.31	9	5
Safety engineers, except mining .....	1,110	.12	10	5
Mechanical engineers .....	4,810	.53	5	7
All other engineers .....	5,100	.56	11	6
Surveying and mapping scientists .....	720	.08	6	4
Engineering and related technicians and technologists .....	39,910	4.41	n.a.	n.a.
Civil engineering technicians and technologists .....	1,490	.16	7	6
Electrical and electronic engineering technicians and technologists .....	11,880	1.31	5	15
Mechanical engineering technicians and technologists .....	1,540	.17	8	3
Drafters .....	6,200	.69	7	11
Estimators and drafters, utilities .....	5,690	.63	4	13
Surveying and mapping technicians and technologists .....	2,350	.26	9	6
All other engineering and related technicians and technologists .....	10,760	1.19	6	11
Physical scientists .....	1,640	.18	n.a.	n.a.
Geologists, geophysicists, and oceanographers .....	260	.03	8	1
All other physical scientists .....	1,380	.15	7	5
Life scientists .....	740	.08	15	2
Physical and life science technicians and technologists .....	2,090	.23	9	4
Computer scientists and related workers .....	12,720	1.41	n.a.	n.a.
Systems analysts, electronic data processing .....	6,320	.70	6	7
Computer programmers .....	5,050	.56	6	8
Computer programmer aides .....	1,210	.13	10	3

See footnotes at end of table.

**Table 12. Electric, gas, steam, water, and sanitary services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 49)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Programmers - numerical, tool, and process control .....	140	0.02	19	( <sup>3</sup> )
Mathematical scientists .....	1,720	.19	33	2
Social scientists, including urban and regional planners .....	680	.08	27	1
Lawyers .....	1,260	.14	7	4
Farm and home management advisors .....	1,510	.17	6	6
Health practitioners, technologists, technicians, and related health workers .....	730	.08	13	3
Writers and editors .....	560	.06	6	3
Public relations specialists and publicity writers .....	1,990	.22	5	8
All other professional, paraprofessional, and technical workers .....	14,180	1.57	10	9
Sales and related occupations .....	12,860	1.42	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	1,130	.12	6	6
Sales agents, selected business services .....	3,120	.34	6	9
Salespersons, retail .....	760	.08	8	3
Cashiers .....	6,030	.67	3	25
All other sales and related workers .....	1,820	.20	6	5
Clerical and administrative support occupations .....	223,320	24.69	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	16,220	1.79	4	29
Adjustment clerks .....	3,710	.41	6	8
Bill and account collectors .....	6,560	.73	4	23
Secretaries .....	18,730	2.07	3	48
Stenographers .....	6,090	.67	7	9
Receptionists and information clerks .....	1,270	.14	6	9
Typists .....	4,360	.48	8	8
Typists, word processing equipment .....	1,930	.21	7	5
Personnel clerks, except payroll and timekeeping .....	2,880	.32	7	8
Correspondence clerks .....	440	.05	10	2
File clerks .....	2,360	.26	6	7
Order clerks, materials, merchandise, and service .....	2,650	.29	16	7
Customer service representatives, utilities .....	27,900	3.08	4	31
Bookkeeping, accounting, and auditing clerks .....	14,960	1.65	4	39
Payroll and timekeeping clerks .....	1,940	.21	5	11
Billing, cost and rate clerks .....	3,890	.43	5	15
General office clerks .....	37,100	4.10	5	51
Electronic data processing and other office machine operators .....	10,200	1.13	n.a.	n.a.
Billing, posting, and calculating machine operators .....	1,820	.20	6	10
Computer operators, except peripheral equipment .....	2,560	.28	5	8
Peripheral EDP equipment operators .....	700	.08	12	2
Data entry keyers, except composing .....	3,630	.40	5	9
All other office machine operators .....	1,490	.16	8	3
Switchboard operators .....	1,510	.17	3	13
Material recording, scheduling, dispatching, and distributing workers .....	51,260	5.67	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	5,980	.66	3	22
Meter readers, utilities .....	29,300	3.24	3	43
Stock clerks, stockroom, warehouse or storage yard .....	12,210	1.35	4	34
Traffic, shipping, and receiving clerks .....	930	.10	11	3
All other material recording, scheduling, and distributing workers .....	2,840	.31	9	5

See footnotes at end of table.

**Table 12. Electric, gas, steam, water, and sanitary services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 49)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other clerical and administrative support workers .....	7,360	0.81	6	10
Service occupations .....	15,590	1.72	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	2,470	.27	6	8
Detectives and investigators, except public .....	500	.06	17	1
Guards and watch guards .....	3,120	.34	8	5
Food and beverage preparation and service workers .....	230	.03	12	1
Cleaning and building service workers, except private households .....	7,840	.87	4	26
All other service workers .....	1,430	.16	9	3
Agriculture, forestry, fishing, and related occupations .....	2,080	.23	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	439,650	48.61	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	49,350	5.46	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	27,290	3.02	4	49
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	8,280	.92	5	22
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	13,780	1.52	6	16
Precision inspectors, testers, and graders .....	5,070	.56	8	8
All other inspectors, testers and related occupations .....	3,170	.35	7	6
Mechanics, installers, and repairers .....	198,790	21.98	n.a.	n.a.
Machinery maintenance mechanics .....	28,170	3.11	n.a.	n.a.
Machinery maintenance mechanics, water or power generation plant .....	25,960	2.87	4	20
All other machinery maintenance mechanics .....	2,210	.24	10	2
Machinery maintenance workers .....	1,090	.12	11	2
Maintenance repairers, general utility .....	15,910	1.76	4	27
Automotive mechanics .....	7,290	.81	4	19
Bus and truck mechanics and diesel engine specialists .....	3,300	.36	5	9
Mobile heavy equipment mechanics, except engines .....	1,400	.15	15	3
Electric motor, transformer, and related repairers .....	1,990	.22	11	3
Powerhouse, substation, and relay electricians .....	14,580	1.61	6	12
Electrical powerline installers and repairers .....	70,530	7.80	3	31
All other electrical and electronic equipment mechanics, installers, and repairers .....	4,460	.49	9	5
Heating, air-conditioning, and refrigeration mechanics and installers .....	1,350	.15	11	3
Precision instrument repairers .....	6,650	.74	4	12
Electric meter installers and repairers .....	14,420	1.59	6	17
Mechanical control and valve installers and repairers .....	9,890	1.09	5	16
Riggers .....	320	.04	14	1
Gas appliance repairers .....	10,790	1.19	12	10
All other mechanics, installers, and repairers .....	6,650	.74	15	5
Construction trades workers, except material moving .....	28,150	3.11	n.a.	n.a.
Carpenters .....	760	.08	11	2
Electricians .....	8,110	.90	6	10

See footnotes at end of table.

**Table 12. Electric, gas, steam, water, and sanitary services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 49)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Painters and paperhangers, construction and maintenance .....	1,380	0.15	12	3
Plumbers, pipefitters, and steamfitters .....	10,080	1.11	5	12
Pipelaying fitters .....	350	.04	16	1
Pipelayers .....	3,840	.42	8	3
Insulation workers .....	220	.02	23	1
All other construction trades workers .....	3,410	.38	10	4
Extractive and related workers, including				
blasters .....	1,540	.17	18	1
Machinists .....	2,500	.28	8	4
Precision workers, n.e.c. ....	1,030	.11	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	2,880	.32	n.a.	n.a.
Boiler operators and tenders, low pressure .....	1,200	.13	10	1
All other machine setters and set-up operators, except metal and plastic .....	340	.04	19	( <sup>3</sup> )
All other machine operators and tenders, except metal and plastic .....	1,340	.15	13	2
Hand workers, n.e.c. ....	7,420	.82	n.a.	n.a.
Welders and cutters .....	6,500	.72	5	20
All other hand workers, n.e.c. ....	920	.10	21	1
Plant and system workers .....	50,210	5.55	n.a.	n.a.
Water and liquid waste treatment plant and system operators .....	4,390	.49	6	9
Gas plant operators .....	5,210	.58	7	6
Power generating plant operators, except auxiliary equipment operators .....	15,720	1.74	6	9
Auxiliary equipment operators, power .....	8,380	.93	5	7
Power reactor operators .....	2,550	.28	10	1
Power distributors and dispatchers .....	8,750	.97	4	8
Stationary engineers .....	1,780	.20	20	2
All other plant and system operators .....	3,430	.38	11	3
Motor vehicle operators .....	14,490	1.60	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	10,770	1.19	5	17
Truck drivers, light, include delivery and route workers .....	3,720	.41	12	9
All other transportation and motor vehicle operators .....	1,100	.12	12	3
Material moving equipment operators .....	16,960	1.88	n.a.	n.a.
Gas pumping station operators .....	1,240	.14	11	2
Gas compressor operators .....	3,060	.34	7	5
Hoist and winch operators .....	570	.06	14	1
Crane and tower operators .....	670	.07	8	2
Industrial truck and tractor operators .....	2,120	.23	10	4
Operating engineers .....	5,880	.65	5	14
All other material moving equipment operators .....	3,420	.38	6	5
Helpers - mechanics and repairers .....	5,600	.62	5	8
Helpers - electricians and powerline transmission installers .....	10,780	1.19	5	14
Helpers - all other construction trades .....	4,600	.51	6	6
Refuse collectors .....	22,790	2.52	3	12
All other helpers, laborers, and material movers, hand .....	13,220	1.46	7	14

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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



# Wholesale Trade

The wholesale trade industry group is primarily engaged in selling large quantities of goods to retailers; to industrial, commercial, institutional, farm, or professional business users; and to other wholesalers. The industry group also includes agents or brokers who buy and sell merchandise to other wholesalers or agents. In addition to selling, wholesale establishments are involved in maintaining inventories of goods; extending credit; physically assembling, sorting, and grading goods in large lots; delivery; refrigeration; and various types of promotion.

The durable goods sector of wholesale trade includes establishments primarily engaged in the wholesale distribution of the following kinds of merchandise: Motor vehicles and automotive parts and supplies; furniture and home furnishings; lumber and other construction materials; sporting, recreational, photographic, hobby goods, and toys and supplies; metals and minerals except petroleum; electrical goods; hardware, plumbing, and heating equipment and supplies; machinery, equipment, and supplies; and miscellaneous durable goods.

Firms in the nondurable goods sector are primarily engaged in the wholesale distribution of the following kinds of merchandise: Paper and paper products; drugs, drug proprietaries, and druggists' sundries; apparel, piece goods, and notions; groceries and related products; farm-product raw materials; chemicals and allied products; petroleum and petroleum products; beer, wine, and distilled alcoholic beverages; and miscellaneous nondurable goods.

There were approximately 5.8 million persons employed in wholesale trade in 1985. As shown in text table 2, the durable goods sector, with 3.4 million workers, accounted for 59 percent of the employment in the industry. Nondurable goods establishments employed 2.3 million workers.

Employment in wholesale trade increased by 8 percent between 1982 and 1985; the durable goods and nondurable goods sectors increased by 10 and 6 percent, respectively. Industries which declined in employment were metals and minerals except petroleum, 1 percent; farm-product raw materials, 4 percent; and petroleum and petroleum products, 9 percent. Contributing to these declines were the lingering effects of the 1981-82 recession on the agricultural, mining, and manufacturing industries.

Between 1982 and 1985, there were relatively strong employment gains in the following industries: Lumber and other construction materials, 21 percent; paper and paper products, 17 percent; electrical goods, 16 percent; and furniture and home furnishings, 15 percent. The employment increase in lumber and other construction materials corresponded to the

recovery in housing starts. Employment increases in the other three industries may have been influenced by the relatively large increase in the rate of growth of consumer installment credit between 1982 and 1985, which itself was partially due to deregulation (for example, the Depository Institutions Deregulation and Monetary Control Act of 1980).

## Durable goods

There were 3.4 million persons employed in the wholesale durable goods sector in 1985. The three largest industries, accounting for 70 percent of durable goods employment were: Machinery, equipment, and supplies, with 1.5 million workers; electrical goods, with over 500,000; and

**Text table 2. Employment in wholesale trade by industry, 1982 and 1985, and percent change**

Industry	SIC Code	Employment		Percent change, 1982-85
		1982	1985	
Wholesale trade, total . . . . .	50,51	5,325,230	5,767,230	8.3
Durable goods . . . . .	50	3,117,870	3,428,870	10.0
Motor vehicles and auto- motive parts and supplies . . . . .	501	407,710	435,300	6.8
Furniture and home furnishings . . . . .	502	113,180	130,290	15.1
Lumber and other con- struction materials . . . . .	503	179,540	217,800	21.3
Sporting and other recreational goods . . . . .	504	72,750	80,800	11.1
Metals and minerals except petroleum . . . . .	505	142,190	141,100	-8
Electrical goods . . . . .	506	432,300	501,900	16.1
Hardware, plumbing, and heating equipment and supplies . . . . .	507	236,340	256,400	8.5
Machinery, equipment, and supplies . . . . .	508	1,351,400	1,466,700	8.5
Miscellaneous durable goods . . . . .	509	182,400	198,620	8.9
Nondurable goods . . . . .	51	2,208,000	2,338,360	5.9
Paper and paper products . . . . .	511	157,070	184,410	17.4
Drugs, drug proprietaries, etc. . . . .	512	154,710	166,390	7.5
Apparel, piece goods, etc. . . . .	513	171,320	187,390	9.4
Groceries and related products . . . . .	514	685,800	738,900	7.7
Farm-product raw materials . . . . .	515	136,080	130,290	-4.2
Chemicals and allied products . . . . .	516	134,990	134,990	0.0
Petroleum and petroleum products . . . . .	517	227,510	207,900	-8.6
Beer, wine, etc. . . . .	518	146,920	153,600	4.5
Miscellaneous nondurable goods . . . . .	519	393,590	434,500	10.4

motor vehicles and automotive parts and supplies, with 435,000.

Among the occupational groups, clerical occupations ranked highest, with 29 percent of wholesale durable goods employment. (See table 13.) Production and related workers accounted for 29 percent. The next largest group, sales workers, accounted for 26 percent. Managerial and administrative workers constituted 9 percent; professional, paraprofessional, and technical workers, 8 percent; and service workers, less than 1 percent.

The five occupations with the highest concentrations of workers in the wholesale trade durable goods sector, accounting for 29 percent of employment, are given in the tabulation below:

	<i>Employment, 1985</i>	<i>Percent of industry employment, 1985</i>
Sales representatives, except scientific and related products or services and retail .....	333,100	9.7
General managers and top executives .....	227,710	6.6
Sales representatives, scientific and related products or services, except retail .....	182,640	5.3
Secretaries .....	136,640	4.0
General office clerks .....	130,190	3.8

### **Nondurable goods**

In 1985, 2.3 million persons were employed in the wholesale trade nondurable goods sector. The three largest indus-

tries, which accounted for 59 percent of total employment in this sector were: Groceries and related products, with 738,900 workers; miscellaneous nondurable goods, with 434,500 workers; and petroleum and petroleum products, with 207,900 workers.

Among the occupational groups, the largest number of workers were in production and related occupations, with 31 percent of employment (table 14). Clerical and administrative support occupations ranked second with 27 percent. Sales occupations accounted for 26 percent. Managerial and administrative workers accounted for 8 percent, and professional, paraprofessional, and technical workers made up 4 percent.

The highest concentrations of workers in the wholesale trade nondurable goods industry were in the following occupations:

	<i>Employment, 1985</i>	<i>Percent of industry employment, 1985</i>
Sales representatives, except scientific and related products or services and retail .....	300,360	12.8
Truckdrivers, light .....	151,570	6.5
Truckdrivers, heavy .....	131,810	5.6
General managers and top executives .....	127,650	5.4
Freight, stock, and material movers, hand .....	97,170	4.1

**Table 13. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 50)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	3,428,870	100.00	--	--
Managerial and administrative occupations .....	321,870	9.39	n.a.	n.a.
Financial managers .....	6,510	.19	5	4
Personnel, training, and labor relations managers .....	2,660	.08	6	2
Purchasing managers .....	38,980	1.14	3	20
Marketing, advertising, and public relations managers .....	12,750	.37	6	4
Administrative services managers .....	4,240	.12	8	2
Communications, transportation, and utilities operations managers .....	6,350	.19	6	3
General managers and top executives .....	227,710	6.64	1	69
All other managers and administrators .....	22,670	.66	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	259,590	7.57	n.a.	n.a.
Management support workers .....	95,450	2.78	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	36,720	1.07	n.a.	n.a.
Accountants and auditors .....	33,540	.98	3	18
Budget analysts .....	800	.02	13	1
All other financial specialists .....	2,380	.07	14	1
Buyers, wholesale and retail trade, except farm products .....	40,730	1.19	3	16
Purchasing agents and buyers, farm products .....	3,920	.11	10	2
Purchasing agents, except wholesale and retail trade, and farm products .....	2,200	.06	11	1
Personnel, training, and labor relations specialists .....	3,120	.09	15	1
Cost estimators .....	1,370	.04	11	1
All other management support workers .....	7,390	.22	20	1
Engineers .....	21,460	.63	n.a.	n.a.
Electrical and electronic engineers .....	12,330	.36	12	1
Mechanical engineers .....	5,040	.15	16	1
All other engineers .....	4,090	.12	16	1
Engineering and related technicians and technologists .....	69,740	2.03	n.a.	n.a.
Electrical and electronic engineering technicians and technologists .....	58,420	1.70	6	6
Mechanical engineering technicians and technologists .....	1,980	.06	26	( <sup>3</sup> )
Drafters .....	3,980	.12	10	2
All other engineering and related technicians and technologists .....	5,360	.16	16	1
Computer scientists and related workers .....	47,910	1.40	n.a.	n.a.
Systems analysts, electronic data processing .....	20,940	.61	12	2
Computer programmers .....	25,360	.74	8	7
Computer programmer aides .....	1,610	.05	9	1
Health practitioners, technologists, technicians, and related health workers .....	3,090	.09	n.a.	n.a.
Writers and editors .....	700	.02	16	( <sup>3</sup> )
Artists and related workers .....	1,450	.04	19	1
Designers, except interior designers .....	1,070	.03	15	( <sup>3</sup> )
Interior designers .....	1,230	.04	14	( <sup>3</sup> )
All other professional, paraprofessional, and technical workers .....	17,490	.51	n.a.	n.a.
Sales and related occupations .....	904,390	26.38	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	100,400	2.93	2	35
Sales engineers .....	11,500	.34	13	1

See footnotes at end of table.

**Table 13. Wholesale trade—durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 50)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Sales representatives, scientific and related products and services, except retail .....	182,640	5.33	3	16
Sales representatives, except scientific and related products or services and retail .....	333,100	9.71	2	46
Salespersons, retail .....	85,300	2.49	4	16
Salespersons, parts .....	129,210	3.77	2	25
Counter and rental clerks .....	2,600	.08	17	1
Stock clerks, sales floor .....	40,240	1.17	4	11
Cashiers .....	9,100	.27	8	4
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	2,320	.07	27	( <sup>3</sup> )
Demonstrators, promoters, and models .....	900	.03	26	( <sup>3</sup> )
All other sales and related workers .....	7,080	.21	22	1
<b>Clerical and administrative support occupations .....</b>	<b>983,580</b>	<b>28.69</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	72,760	2.12	2	31
Credit authorizers .....	1,810	.05	8	1
Credit checkers .....	1,840	.05	11	1
Adjustment clerks .....	9,200	.27	10	2
Bill and account collectors .....	4,100	.12	7	2
Secretaries .....	136,640	3.98	2	40
Stenographers .....	1,100	.03	13	( <sup>3</sup> )
Receptionists and information clerks .....	27,910	.81	3	16
Typists .....	17,150	.50	4	6
Typists, word processing equipment .....	6,880	.20	6	3
Personnel clerks, except payroll and timekeeping .....	1,340	.04	7	1
Correspondence clerks .....	980	.03	20	( <sup>3</sup> )
File clerks .....	2,730	.08	9	2
Order clerks, materials, merchandise, and service .....	68,460	2.00	3	18
Bookkeeping, accounting, and auditing clerks .....	128,730	3.75	2	45
Payroll and timekeeping clerks .....	2,210	.06	5	2
Billing, cost and rate clerks .....	25,660	.75	4	12
General office clerks .....	130,190	3.80	3	33
<b>Electronic data processing and other office machine operators .....</b>	<b>62,380</b>	<b>1.82</b>	<b>n.a.</b>	<b>n.a.</b>
Billing, posting, and calculating machine operators .....	16,020	.47	5	7
Computer operators, except peripheral equipment .....	19,090	.56	4	10
Peripheral EDP equipment operators .....	2,790	.08	29	( <sup>3</sup> )
Data entry keyers, except composing .....	23,430	.68	4	10
All other office machine operators .....	1,050	.03	30	( <sup>3</sup> )
Switchboard operators .....	12,260	.36	5	9
Mail clerks, except mail machine operators and postal service .....	1,920	.06	6	1
<b>Material recording, scheduling, dispatching, and distributing workers .....</b>	<b>261,050</b>	<b>7.61</b>	<b>n.a.</b>	<b>n.a.</b>
Dispatchers, except police, fire, and ambulance .....	3,350	.10	10	2
Weighers, measurers, checkers, and samplers, recordkeeping .....	2,630	.08	16	1
Marking clerks .....	630	.02	20	( <sup>3</sup> )
Stock clerks, stockroom, warehouse or storage yard .....	91,250	2.66	3	20
Order fillers, wholesale and retail trade .....	76,420	2.23	3	15
Traffic, shipping, and receiving clerks .....	82,930	2.42	3	25
All other material recording, scheduling, and distributing workers .....	3,840	.11	14	1
All other clerical and administrative support workers .....	6,280	.18	12	1
<b>Service occupations .....</b>	<b>24,950</b>	<b>.73</b>	<b>n.a.</b>	<b>n.a.</b>

See footnotes at end of table.

**Table 13. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985--Continued**

(SIC 50)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, service .....	1,820	0.05	12	1
Guards and watch guards .....	1,770	.05	16	1
Cleaning and building service workers, except private households .....	18,930	.55	n.a.	n.a.
All other service workers .....	2,430	.07	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	1,230	.04	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	933,260	27.22	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	54,480	1.59	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	43,900	1.28	3	18
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	10,580	.31	5	4
Production inspectors, testers, graders, sorters, samplers, and weighers .....	7,170	.21	10	1
All other inspectors, testers and related occupations .....	4,020	.12	21	( <sup>3</sup> )
Mechanics, installers, and repairers .....	352,050	10.27	n.a.	n.a.
Machinery maintenance mechanics .....	8,160	.24	20	1
Maintenance repairers, general utility .....	51,390	1.50	5	11
Automotive mechanics .....	21,710	.63	6	5
Automotive body and related repairers .....	3,200	.09	16	1
Bus and truck mechanics and diesel engine specialists .....	42,440	1.24	6	5
Mobile heavy equipment mechanics, except engines .....	30,700	.90	8	3
Farm equipment mechanics .....	37,880	1.10	8	4
Aircraft mechanics .....	1,330	.04	43	( <sup>3</sup> )
Small engine specialists .....	1,470	.04	30	( <sup>3</sup> )
Data processing equipment repairers .....	35,580	1.04	10	1
Electronic home entertainment equipment repairers .....	1,980	.06	27	( <sup>3</sup> )
Electric home appliance and power tool repairers .....	1,850	.05	28	( <sup>3</sup> )
Electrical installers and repairers, transportation equipment .....	2,100	.06	27	( <sup>3</sup> )
Heating, air-conditioning, and refrigeration mechanics and installers .....	14,650	.43	9	2
Camera and photographic equipment repairers .....	790	.02	44	( <sup>3</sup> )
Watchmakers .....	1,100	.03	35	( <sup>3</sup> )
Office machine and cash register servicers .....	42,210	1.23	7	3
Tire repairers and changers .....	7,350	.21	10	1
All other mechanics, installers, and repairers .....	46,160	1.35	n.a.	n.a.
Construction trades workers, except material moving .....	17,990	.52	n.a.	n.a.
Carpenters .....	2,410	.07	16	( <sup>3</sup> )
Electricians .....	1,530	.04	33	( <sup>3</sup> )
Painters and paperhangers, construction and maintenance .....	620	.02	22	( <sup>3</sup> )
Plumbers, pipefitters, and steamfitters .....	2,200	.06	23	( <sup>3</sup> )
Carpet installers .....	640	.02	31	( <sup>3</sup> )
Glaziers .....	4,400	.13	12	1
All other construction trades workers .....	6,190	.18	20	1
Precision metal workers .....	38,690	1.13	n.a.	n.a.
Machinists .....	33,930	.99	6	6
Jewelers and silversmiths .....	1,870	.05	26	( <sup>3</sup> )
Sheet-metal workers .....	2,890	.08	21	( <sup>3</sup> )
Precision woodworkers .....	4,140	.12	n.a.	n.a.

See footnotes at end of table.

**Table 13. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985--Continued**

(SIC 50)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Wood machinists .....	1,840	0.05	15	( <sup>3</sup> )
Cabinetmakers and bench carpenters .....	1,780	.05	23	( <sup>3</sup> )
Furniture finishers .....	520	.02	38	( <sup>3</sup> )
Upholsterers .....	470	.01	22	( <sup>3</sup> )
Precision workers, n.e.c. ....	8,860	.26	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	24,050	.70	n.a.	n.a.
Sewing machine operators, garment .....	670	.02	33	( <sup>3</sup> )
Sewing machine operators, nongarment .....	1,080	.03	23	( <sup>3</sup> )
Painters, transportation equipment .....	350	.01	20	( <sup>3</sup> )
Packaging and filling machine operators and tenders .....	1,680	.05	16	( <sup>3</sup> )
All other machine setters and set-up operators, except metal and plastic .....	5,710	.17	13	1
All other machine operators and tenders, except metal and plastic .....	14,560	.42	9	2
Hand workers, n.e.c. ....	61,070	1.78	n.a.	n.a.
Welders and cutters .....	24,880	.73	5	6
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	24,430	.71	7	2
All other hand workers, n.e.c. ....	11,760	.34	n.a.	n.a.
Plant and system workers .....	400	.01	34	( <sup>3</sup> )
Motor vehicle operators .....	156,150	4.55	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	58,610	1.71	3	17
Truck drivers, light, include delivery and route workers .....	94,080	2.74	2	26
Driver/sales workers .....	3,460	.10	16	1
Service station attendants .....	1,350	.04	23	( <sup>3</sup> )
All other transportation and motor vehicle operators .....	5,560	.16	13	1
Material moving equipment operators .....	41,380	1.21	n.a.	n.a.
Hoist and winch operators .....	1,350	.04	18	1
Crane and tower operators .....	7,960	.23	6	3
Industrial truck and tractor operators .....	24,670	.72	5	7
Conveyor operators and tenders .....	4,060	.12	10	1
All other material moving equipment operators .....	3,340	.10	24	( <sup>3</sup> )
Helpers - mechanics and repairers .....	2,510	.07	17	1
Freight, stock, and material movers, hand .....	79,460	2.32	3	13
Hand packers and packagers .....	30,640	.89	5	4
Vehicle washers and equipment cleaners .....	1,610	.05	16	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	40,840	1.19	5	5
All other production, construction, operating, maintenance, and material handling workers .....	370	.01	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 14. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 51)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,338,360	100.00	--	--
Managerial and administrative occupations .....	186,020	7.96	n.a.	n.a.
Financial managers .....	4,300	.18	4	5
Personnel, training, and labor relations managers .....	1,840	.08	4	3
Purchasing managers .....	25,330	1.08	3	18
Marketing, advertising, and public relations managers .....	7,560	.32	5	5
Administrative services managers .....	2,000	.09	7	2
Communications, transportation, and utilities operations managers .....	5,300	.23	4	5
Food service and lodging managers .....	870	.04	43	( <sup>3</sup> )
General managers and top executives .....	127,650	5.46	1	63
All other managers and administrators .....	11,170	.48	5	4
Professional, paraprofessional, and technical occupations .....	102,760	4.39	n.a.	n.a.
Management support workers .....	65,110	2.78	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	23,820	1.02	n.a.	n.a.
Accountants and auditors .....	22,470	.96	3	17
Budget analysts .....	530	.02	9	1
All other financial specialists .....	820	.04	9	1
Buyers, wholesale and retail trade, except farm products .....	25,280	1.08	3	14
Purchasing agents and buyers, farm products .....	11,420	.49	5	6
Purchasing agents, except wholesale and retail trade, and farm products .....	620	.03	10	1
Personnel, training, and labor relations specialists .....	1,140	.05	7	1
Cost estimators .....	340	.01	13	( <sup>3</sup> )
All other management support workers .....	2,490	.11	10	1
Engineers .....	2,220	.09	n.a.	n.a.
Electrical and electronic engineers .....	300	.01	21	( <sup>3</sup> )
Mechanical engineers .....	670	.03	10	1
All other engineers .....	1,250	.05	14	1
Engineering and related technicians and technologists .....	2,800	.12	n.a.	n.a.
Electrical and electronic engineering technicians and technologists .....	1,410	.06	13	1
Drafters .....	410	.02	12	( <sup>3</sup> )
All other engineering and related technicians and technologists .....	980	.04	n.a.	n.a.
Physical scientists .....	1,840	.08	11	1
Life scientists .....	1,700	.07	19	( <sup>3</sup> )
Physical and life science technicians and technologists .....	2,520	.11	12	1
Computer scientists and related workers .....	11,380	.49	n.a.	n.a.
Systems analysts, electronic data processing .....	2,340	.10	7	2
Computer programmers .....	7,860	.34	4	7
Computer programmer aides .....	1,180	.05	6	1
Pharmacists .....	610	.03	22	( <sup>3</sup> )
All other health professionals, paraprofessional and technicians .....	1,720	.07	n.a.	n.a.
Writers and editors .....	620	.03	37	( <sup>3</sup> )
Artists and related workers .....	2,030	.09	11	1
Designers, except interior designers .....	4,110	.18	12	1
Merchandise displays and window trimmers .....	1,240	.05	14	1
All other professional, paraprofessional, and technical workers .....	4,860	.21	n.a.	n.a.
Sales and related occupations .....	609,510	26.07	n.a.	n.a.

See footnotes at end of table.

**Table 14. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 51)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
First-line supervisors and manager/supervisors, sales and related workers .....	78,250	3.35	2	35
Sales engineers .....	760	.03	27	( <sup>3</sup> )
Sales representatives, scientific and related products and services, except retail .....	70,170	3.00	3	10
Sales representatives, except scientific and related products or services and retail .....	300,360	12.84	1	42
Salespersons, retail .....	65,860	2.82	4	13
Salespersons, parts .....	3,540	.15	11	2
Stock clerks, sales floor .....	45,240	1.93	4	9
Cashiers .....	38,050	1.63	4	9
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	2,310	.10	21	( <sup>3</sup> )
Demonstrators, promoters, and models .....	940	.04	24	( <sup>3</sup> )
All other sales and related workers .....	4,030	.17	n.a.	n.a.
Clerical and administrative support occupations .....	620,200	26.52	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	44,720	1.91	2	30
Credit authorizers .....	1,080	.05	10	1
Credit checkers .....	1,000	.04	7	1
Adjustment clerks .....	3,970	.17	6	2
Bill and account collectors .....	1,880	.08	6	2
Secretaries .....	70,120	3.00	2	35
Stenographers .....	480	.02	13	( <sup>3</sup> )
Receptionists and information clerks .....	14,070	.60	3	13
Typists .....	7,050	.30	5	5
Typists, word processing equipment .....	3,130	.13	6	3
Personnel clerks, except payroll and timekeeping .....	1,120	.05	5	2
Correspondence clerks .....	580	.02	12	( <sup>3</sup> )
File clerks .....	2,020	.09	6	2
Order clerks, materials, merchandise, and service .....	34,750	1.49	3	14
Bookkeeping, accounting, and auditing clerks .....	82,280	3.52	1	44
Payroll and timekeeping clerks .....	1,980	.08	4	3
Billing, cost and rate clerks .....	14,000	.60	4	9
General office clerks .....	80,150	3.43	2	33
Electronic data processing and other office machine operators .....	41,020	1.75	n.a.	n.a.
Billing, posting, and calculating machine operators .....	10,140	.43	4	6
Computer operators, except peripheral equipment .....	12,880	.55	3	11
Peripheral EDP equipment operators .....	700	.03	8	1
Data entry keyers, except composing .....	16,520	.71	3	10
All other office machine operators .....	780	.03	15	( <sup>3</sup> )
Switchboard operators .....	5,190	.22	3	7
Mail clerks, except mail machine operators and postal service .....	1,390	.06	10	2
Material recording, scheduling, dispatching, and distributing workers .....	203,730	8.71	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	1,900	.08	6	2
Weighers, measurers, checkers, and samplers, recordkeeping .....	1,910	.08	10	1
Marking clerks .....	1,550	.07	17	( <sup>3</sup> )
Stock clerks, stockroom, warehouse or storage yard .....	55,170	2.36	3	15
Order fillers, wholesale and retail trade .....	81,520	3.49	3	16
Traffic, shipping, and receiving clerks .....	56,740	2.43	3	20
All other material recording, scheduling, and distributing workers .....	4,940	.21	10	1

See footnotes at end of table.



**Table 14. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 51)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other clerical and administrative support workers .....	4,490	0.19	9	1
Service occupations .....	52,270	2.24	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	1,700	.07	8	1
Guards and watch guards .....	1,780	.08	8	1
Food and beverage preparation and service workers .....	31,950	1.37	n.a.	n.a.
Waiters and waitresses .....	1,150	.05	21	( <sup>3</sup> )
Counter attendants, lunchroom, coffee shop, or cafeteria .....	700	.03	33	( <sup>3</sup> )
Bakers, bread and pastry .....	1,810	.08	23	( <sup>3</sup> )
Butchers and meat cutters .....	20,000	.86	7	2
Cooks, restaurant .....	300	.01	28	( <sup>3</sup> )
Food preparation workers .....	2,980	.13	20	( <sup>3</sup> )
Combined food preparation and service workers .....	1,230	.05	29	( <sup>3</sup> )
All other food service workers .....	3,780	.16	n.a.	n.a.
Pharmacy assistants .....	240	.01	48	( <sup>3</sup> )
Cleaning and building service workers, except private households .....	16,090	.69	n.a.	n.a.
Maids and housekeeping cleaners .....	280	.01	29	( <sup>3</sup> )
Janitors and cleaners, except maids and housekeeping cleaners .....	15,420	.66	3	12
All other cleaning and building service workers, except private households .....	390	.02	19	( <sup>3</sup> )
All other service workers .....	510	.02	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	33,980	1.45	n.a.	n.a.
Nursery workers .....	4,130	.18	19	( <sup>3</sup> )
Graders and sorters, agricultural products .....	6,500	.28	13	1
Gardeners and groundskeepers, except farm .....	1,110	.05	28	( <sup>3</sup> )
All other agriculture, forestry, fishing, and related workers .....	22,240	.95	7	3
Production, construction, operating, maintenance, and material handling occupations .....	733,620	31.37	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	23,150	.99	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	11,640	.50	4	9
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	11,510	.49	4	6
Production inspectors, testers, graders, sorters, samplers, and weighers .....	3,900	.17	13	1
All other inspectors, testers and related occupations .....	1,080	.05	14	( <sup>3</sup> )
Mechanics, installers, and repairers .....	48,840	2.09	n.a.	n.a.
Machinery maintenance mechanics .....	1,840	.08	9	1
Maintenance repairers, general utility .....	22,070	.94	3	14
Automotive mechanics .....	5,130	.22	5	4
Automotive body and related repairers .....	250	.01	16	( <sup>3</sup> )
Bus and truck mechanics and diesel engine specialists .....	8,090	.35	4	5
Mobile heavy equipment mechanics, except engines .....	360	.02	35	( <sup>3</sup> )
Farm equipment mechanics .....	1,280	.05	16	1
Heating, air-conditioning, and refrigeration mechanics and installers .....	3,160	.14	10	2
Office machine and cash register servicers .....	670	.03	21	( <sup>3</sup> )
Coin and vending machine servicers and repairers .....	760	.03	24	( <sup>3</sup> )
Tire repairers and changers .....	2,600	.11	9	2

See footnotes at end of table.

**Table 14. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 51)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other mechanics, installers, and repairers .....	2,630	0.11	n.a.	n.a.
Carpenters .....	490	.02	21	( <sup>3</sup> )
Machinists .....	3,150	.13	16	1
Custom tailors and sewers .....	640	.03	35	( <sup>3</sup> )
Precision workers, n.e.c. ....	4,050	.17	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	27,530	1.18	n.a.	n.a.
Sewing machine operators, garment .....	3,030	.13	20	( <sup>3</sup> )
Sewing machine operators, nongarment .....	730	.03	33	( <sup>3</sup> )
Packaging and filling machine operators and tenders .....	7,600	.33	9	1
All other machine setters and set-up operators, except metal and plastic .....	3,310	.14	14	1
All other machine operators and tenders, except metal and plastic .....	12,860	.55	n.a.	n.a.
Hand workers, n.e.c. ....	11,440	.49	n.a.	n.a.
Welders and cutters .....	1,090	.05	15	1
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	4,010	.17	15	( <sup>3</sup> )
All other hand workers, n.e.c. ....	6,340	.27	n.a.	n.a.
Plant and system workers .....	1,600	.07	16	( <sup>3</sup> )
Motor vehicle operators .....	325,260	13.91	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	131,810	5.64	2	30
Truck drivers, light, include delivery and route workers .....	151,570	6.48	2	34
Driver/sales workers .....	41,880	1.79	6	4
Service station attendants .....	23,570	1.01	6	5
All other transportation and motor vehicle operators .....	2,440	.10	14	1
Material moving equipment operators .....	40,580	1.74	n.a.	n.a.
Hoist and winch operators .....	330	.01	36	( <sup>3</sup> )
Crane and tower operators .....	320	.01	27	( <sup>3</sup> )
Industrial truck and tractor operators .....	29,390	1.26	3	8
Conveyor operators and tenders .....	7,620	.33	8	2
All other material moving equipment operators .....	2,920	.12	15	1
Helpers - mechanics and repairers .....	1,170	.05	11	1
Freight, stock, and material movers, hand .....	97,170	4.16	2	17
Hand packers and packagers .....	70,660	3.02	4	8
Vehicle washers and equipment cleaners .....	940	.04	16	1
All other helpers, laborers, and material movers, hand .....	44,860	1.92	5	5
All other production, construction, operating, maintenance, and material handling workers .....	1,100	.05	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# Retail Trade

Retail trade industries include those establishments or businesses which sell merchandise for personal or household consumption and also render services incidental to the sale of those goods.

In 1985, there were 17.5 million workers employed in retail trade, a 15-percent increase from 1982 (text table 3). Factors which may have contributed to this employment growth include the increase in both consumer installment debt and housing starts; a stable economy that encouraged consumer expenditures; and an increase in two-income households. The consequent strong demand for retail goods, combined with consumer willingness to use debt as a means to obtain these items, led to employment gains in all sectors of the retail trade industry from 1982 to 1985.

With 5.9 million workers or one-third of industry employment, eating and drinking places constituted the largest employer in retail trade (table 15). Food stores were next with 2.8 million workers or 16 percent. Ranking third were general merchandise stores, with 2.3 million or 13 percent, followed closely by miscellaneous retail stores, with 2.2 million or 12 percent, and automotive dealers and gasoline service stations, employing 1.9 million or 11 percent. Apparel and accessory stores employed 1 million or 6 percent, while furniture dealers (726,000) and building material dealers (711,000) each accounted for 4 percent of industry employment.

**Text table 3. Employment in retail trade by industry, 1982 and 1985, and percent change**

Industry	SIC Code	Employment		Percent change, 1982-85
		1982	1985	
Retail trade, total . . . . .	52-59	15,246,080	17,524,420	14.9
Building materials, hardware, garden supply stores, and mobile home dealers . . . . .	52	599,580	710,950	18.6
General merchandise stores . . . . .	53	2,150,570	2,275,450	5.8
Food stores . . . . .	54	2,466,270	2,785,160	12.9
Automotive dealers and gasoline service stations . . . . .	55	1,637,690	1,915,410	17.0
Apparel and accessory stores . . . . .	56	933,620	1,030,940	10.4
Furniture, home furnishings, and equipment stores . . . . .	57	573,880	726,440	26.6
Eating and drinking places . . . . .	58	4,985,150	5,923,060	18.8
Miscellaneous retail . . . . .	59	1,899,320	2,157,010	13.6

Sales and related workers constituted the largest occupational group in retail trade, numbering 6.5 million or 37 percent of total industry employment. Nearly three-fourths of these workers were employed as salespersons and cashiers. General merchandise stores accounted for 22 percent of all sales employment.

Service workers (5.8 million) accounted for 33 percent of industry employment. Of these workers, 24 percent or 1.4 million were waiters and waitresses. Eating and drinking establishments employed the largest number of service workers in retail trade, with 5.1 million workers or 87 percent.

Production and related occupations ranked third with 1.9 million workers or 11 percent. The largest occupation in this group was automotive mechanic; 45 percent of the auto mechanics in retail trade were employed at automotive dealerships and gasoline service stations.

Clerical occupations made up 1.5 million or 9 percent of industry employment, ranking fourth among the occupational groups. Approximately one-quarter of these workers were employed in general merchandise stores. Bookkeeping, accounting, and auditing clerks made up the largest occupation in this group, with 338,000 workers or 22 percent.

Managerial and administrative occupations accounted for 1.3 million workers or 7 percent of retail trade employment. Of these, 27 percent were employed in eating and drinking places. Professional, paraprofessional, and technical occupations made up 3 percent of total employment in retail trade; buyers and pharmacists were the two largest occupations in this major group. The smallest major group was agriculture, forestry, fishing, and related workers, which constituted less than 1 percent of industry employment.

## Building materials, hardware, garden supply stores, and mobile home dealers

This industry consists of establishments that sell lumber and other building materials; paint, glass, and wallpaper; hardware; nursery stock; lawn and garden supplies; and mobile homes.

Employment in this industry totaled 710,950 in 1985, a 19-percent increase from 1982. The largest industry within this group was lumber and other building materials dealers, with 373,000 workers or 52 percent. Hardware stores employed 164,000 or 23 percent. Retail nurseries, lawn and

garden supply stores (74,000), and paint, glass, and wall-paper stores (68,000) each employed 10 percent of the industry's workers. The smallest group was mobile home dealers, with 32,000 or 5 percent.

Sales workers made up the largest occupational group, with 43 percent (table 16). Production and related occupations accounted for 22 percent. Ranking third were clerical and administrative support workers, with 120,790 or 17 percent of total employment. Managerial and administrative occupations accounted for 80,040 or 11 percent. Of the remaining 7 percent of industry employment, professional, paraprofessional, and technical workers totaled 24,370; agriculture, forestry, fishing, and related workers, 18,600; and service workers, 7,290.

### **General merchandise stores**

This industry includes establishments which sell several lines of merchandise, such as dry goods, apparel and accessories, furniture and home furnishings, small wares, hardware, and food.

In 1985, employment in these stores totaled 2.3 million, a 6-percent increase over 1982. Department stores, with 1.9 million workers or 84 percent of industry employment, were the largest employer in this industry. Variety stores accounted for 223,000 jobs or 10 percent. Miscellaneous general merchandise stores accounted for 142,000 or 6 percent.

The largest occupational group in this industry was sales and related workers, with 1.4 million persons or 63 percent of total industry employment (table 17). Almost two-thirds of these workers were retail salespersons. Clerical and administrative workers ranked second with 375,000 or 17 percent. The majority of these workers were employed in office clerical positions. Production and related occupations and service occupations each accounted for about 6 percent of industry employment or 135,000 and 130,000, respectively. Managerial and administrative occupations numbered 125,000 or 5 percent, while professional, paraprofessional, and technical workers numbered 69,000 or 3 percent. Agriculture, forestry, fishing, and related occupations accounted for less than 1 percent of employment in these stores.

### **Food stores**

This industry consists of establishments selling food for home preparation and consumption.

Employment in food stores in 1985 totaled 2.8 million, a 13-percent increase from 1982. With 2.4 million workers or 87 percent of food store employment, grocery stores were the largest employer in this industry. Retail bakeries accounted for 158,000 or 6 percent. Meat and seafood markets, including freezer provisioners (60,000) and stores selling dairy products (40,000), each made up 2 percent of industry employment. The remaining 3 percent was dis-

tributed among fruit stores and vegetable markets, 22,000; candy, nut, and confectionery stores, 31,000; and miscellaneous food stores (those engaged in the retail sale of specialized foods such as coffee, tea, spices, etc.), 39,000.

Sales and related occupations accounted for 1.7 million or 61 percent of employment in food store (table 18). Nearly half of these workers were cashiers. Service workers constituted 456,000 or 16 percent, almost one-third of whom were butchers or meat-cutters. With 241,000 or 9 percent of industry employment, production and related workers were the third largest occupational group. Managers and administrative occupations constituted 188,000 or 7 percent of industry employment, followed closely by clerical and administrative support workers with 165,000 or 6 percent. Professional, paraprofessional, and technical occupations employed 42,000 or 1 percent, while agriculture, forestry, fishing, and related workers made up less than 1 percent of total industry employment.

### **Automotive dealers and gasoline service stations**

This industry comprises establishments engaged in the retail sale of new and used automobiles, boats, recreational and utility trailers, and motorcycles; other automotive vehicles such as dune buggies, snowmobiles, and go-carts; and new automobile parts and accessories. Gasoline service stations are also included.

In 1985, this industry employed 1.9 million workers, a 17-percent increase from 1982. Persons working in dealerships selling new and used motor vehicles numbered 856,000 or 45 percent of industry employment. Gasoline service stations accounted for 598,000 or 31 percent. Sixteen percent held jobs in auto and home supply stores, selling products such as tires, batteries, radios, and television sets. The remaining 8 percent were in establishments selling used motor vehicles, with 54,000 workers; boat dealers, 34,000 workers; motorcycle dealers, 33,000 workers; recreational and utility trailer dealers, 21,000 workers; and miscellaneous automotive dealers, 9,000 workers.

Unlike any other industry in retail trade, almost half of the workers, or 871,000, were employed in production and related occupations (table 19). One-third of these workers were automotive mechanics. Sales and related workers ranked second with 576,000 or 30 percent of total employment. Clerical and administrative support occupations accounted for 245,000 workers or 13 percent. Managerial and administrative workers made up 162,000 or 8 percent of total industry employment. The remaining 3 percent consisted primarily of 46,000 service workers and 16,000 professional, paraprofessional, and technical workers.

### **Apparel and accessory stores**

This industry includes establishments engaged in the retail sale of new clothing, shoes, hats, underwear, and

related articles for personal wear and adornment. Furriers and custom tailors carrying stocks of materials are also included.

Apparel and accessory stores employed 1 million workers in 1985, a 10-percent increase from 1982. Women's ready-to-wear stores, with 374,000 employees, accounted for 36 percent of industry employment. Family clothing stores ranked second with 217,000 or 21 percent, followed closely by shoe stores, with 21,000 or 20 percent. Men's and boys' clothing and furnishings stores accounted for 110,000 workers or 11 percent. Establishments selling miscellaneous apparel and accessories, such as bathing suits, sports apparel, and uniforms, employed 54,000 or 5 percent. The remaining 7 percent consisted of 34,000 employed at children's and infants' wear stores; 27,000 at women's accessory and specialty stores; and 6,900 at furriers and fur shops.

Sales and related workers, totaling 764,000, made up the largest occupational group, with 74 percent of industry employment (table 20). Managerial and administrative workers accounted for 97,000 workers or 10 percent. Clerical and administrative support occupations made up 84,000 or 8 percent. Ranking fourth were production and related workers with 45,000 or 4 percent. Professional, paraprofessional, and technical workers accounted for 28,000 or 3 percent of employment in this industry; service occupations, 13,000 or 1 percent; and agriculture, forestry, fishing, and related workers, less than 1 percent.

### **Furniture, home furnishings, and equipment stores**

Firms that sell furniture, floor coverings, draperies, housewares, stoves, refrigerators, and other household electrical and gas appliances comprise the furniture, home furnishings, and equipment industry.

In 1985, employment in this industry totaled 726,000, a 27-percent increase from 1982. Furniture, home furnishings, and equipment stores (except appliances) accounted for 416,000 workers or 57 percent of industry employment. With 225,000 or 31 percent, radio, television, and music stores were the second largest employer in this industry. Household appliance stores employed 85,000 workers or 12 percent.

Workers in sales and related occupations, numbering 296,000, constituted the largest occupational group, with 41 percent of industry employment (table 21). Over 75 percent of these workers were salespersons. Production and related workers ranked second in employment with 164,000 or 23 percent. Clerical and administrative workers, totaling 133,000, accounted for 18 percent. Managerial and administrative workers, with 86,000 or 12 percent, ranked fourth. Professional, paraprofessional, and technical occupations accounted for 38,000 or 5 percent, while service workers accounted for 9,000 or 1 percent. Agriculture, forestry, fishing and related workers constituted less than 1 percent.

### **Eating and drinking places**

This industry includes firms engaged in the sale of prepared foods and drinks for consumption on the premises, and lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption. Restaurants and lunch counters operated by hotels and department stores are excluded.

There were 5.9 million persons employed in eating and drinking places in 1985, a 19-percent increase from 1982. This industry, with over one-third of all workers, was the largest employer in retail trade.

The majority, 5.1 million or 85 percent of workers in this industry, were in service occupations (table 22). Almost all of these, 94 percent, were food service workers. Managerial and administrative occupations made up 338,000 or 6 percent of industry employment, followed closely by sales and related occupations with 307,000 or 5 percent, most of whom were cashiers. The remaining 4 percent consisted of 106,000 clerical and administrative support occupations; 70,000 production and related occupations; 38,000 professional, paraprofessional, and technical occupations; and 1,000 agriculture, forestry, fishing and related workers.

### **Miscellaneous retail stores**

This industry comprises establishments engaged in the retail sale of miscellaneous goods, other than those previously discussed. Among such firms are drug stores, liquor stores, used merchandise stores, nonstore retailers, fuel and ice dealers, miscellaneous shopping goods stores, and florists.

Employment in miscellaneous retail stores was 2.2 million in 1985, a 14-percent increase over 1982. Miscellaneous shopping stores (book stores; jewelry stores; hobby, toy, and game shops; sporting goods stores; etc.) accounted for 697,000 workers or 32 percent. Drug stores employed 541,000 or 25 percent. Other retail stores (florists, cosmetic stores, cigar stores and stands, etc.) accounted for 355,000 workers or 16 percent of industry employment.

Nonstore retailers, such as mail-order houses and automatic merchandising machine operators, employed 258,000 or 12 percent. Liquor stores totaled 128,000 workers or 6 percent; fuel and ice dealers, 103,000 or 5 percent; and used merchandise stores, 77,000 or 4 percent.

Sales workers constituted the largest occupational group in this industry, with 1.1 million workers, or over one-half of total industry employment (table 23). Clerical and administrative support occupations accounted for 281,000 or 13 percent, followed closely by production and related workers with 263,000 or 12 percent. Professional, paraprofessional, and technical workers made up 196,000 or 9 percent, while managerial and administrative workers totaled 178,000 or 8 percent. Service occupations accounted for 97,000 workers or 5 percent of industry employment. Agriculture, forestry, fishing, and related workers made up the smallest occupational group.

**Table 15. Retail trade: Percent distribution of employment in major occupational groups by industry, 1985**

Industry	Total	Managers and administrative workers	Professional, paraprofessional, and technical workers	Sales and related workers	Clerical and administrative workers	Agricultural, forestry, fishing, and related workers	Production, construction, operating, maintenance, and material handling workers	Service workers
Total .....	17,524,420	1,254,560	450,180	6,511,830	1,509,400	28,740	1,947,320	5,822,390
Percent .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Building materials, hardware, garden supply, and mobile home dealers .....	4.06	6.38	5.41	4.63	8.00	64.72	8.12	.13
General merchandise stores .....	12.98	9.94	15.25	22.14	24.87	.77	6.94	2.23
Food stores .....	15.89	15.01	9.32	25.97	10.94	3.65	12.40	7.84
Automotive dealers and gasoline service stations .....	10.93	12.89	3.53	8.84	16.21	.97	44.73	.79
Apparel and accessory stores .....	5.88	7.77	6.20	11.74	5.55	.42	2.29	.22
Furniture, home furnishings, and equipment stores .....	4.15	6.84	8.36	4.55	8.84	.17	8.44	.15
Eating and drinking places .....	33.80	26.97	8.36	4.71	7.00	2.75	3.60	86.97
Miscellaneous retail .....	12.31	14.20	43.57	17.42	18.60	26.55	13.49	1.67

**Table 16. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 52)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	710,950	100.00	--	--
Managerial and administrative occupations .....	80,040	11.26	n.a.	n.a.
Financial managers .....	600	.08	6	2
Personnel, training, and labor relations managers .....	210	.03	7	1
Purchasing managers .....	12,100	1.70	3	20
Marketing, advertising, and public relations managers .....	1,090	.15	12	2
Administrative services managers .....	360	.05	15	1
Communications, transportation, and utilities operations managers .....	670	.09	7	1
General managers and top executives .....	62,300	8.76	1	72
All other managers and administrators .....	2,710	.38	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	24,370	3.43	n.a.	n.a.
Management support workers .....	16,850	2.37	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	4,440	.62	n.a.	n.a.
Accountants and auditors .....	4,280	.60	4	9
All other financial specialists .....	160	.02	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	11,060	1.56	4	15
Purchasing agents and buyers, farm products .....	90	.01	36	( <sup>3</sup> )
Purchasing agents, except wholesale and retail trade, and farm products .....	180	.03	19	( <sup>3</sup> )
Personnel, training, and labor relations specialists .....	140	.02	12	( <sup>3</sup> )
Cost estimators .....	530	.07	16	1
All other management support workers .....	410	.06	16	( <sup>3</sup> )
Engineering and related technicians and technologists .....	2,020	.28	n.a.	n.a.
Drafters .....	1,880	.26	9	3
All other engineering and related technicians and technologists .....	140	.02	n.a.	n.a.
Computer scientists and related workers .....	570	.08	n.a.	n.a.
Systems analysts, electronic data processing .....	170	.02	17	( <sup>3</sup> )
Computer programmers .....	300	.04	13	1
Computer programmer aides .....	100	.01	12	( <sup>3</sup> )
Artists and related workers .....	170	.02	12	( <sup>3</sup> )
Designers, except interior designers .....	1,530	.22	8	2
Interior designers .....	2,690	.38	9	3
Merchandise displays and window trimmers .....	100	.01	14	( <sup>3</sup> )
All other professional, paraprofessional, and technical workers .....	440	.06	n.a.	n.a.
Sales and related occupations .....	301,780	42.45	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	10,040	1.41	4	8
Sales engineers .....	120	.02	35	( <sup>3</sup> )
Sales representatives, scientific and related products and services, except retail .....	150	.02	35	( <sup>3</sup> )
Sales representatives, except scientific and related products or services and retail .....	7,270	1.02	7	3
Salespersons, retail .....	189,110	26.60	1	75
Salespersons, parts .....	940	.13	23	( <sup>3</sup> )
Counter and rental clerks .....	8,020	1.13	5	7
Stock clerks, sales floor .....	37,390	5.26	3	29
Cashiers .....	46,790	6.58	2	25
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	800	.11	32	( <sup>3</sup> )

See footnotes at end of table.

**Table 16. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 52)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other sales and related workers .....	1,150	0.16	n.a.	n.a.
Clerical and administrative support occupations .....	120,790	16.99	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	1,870	.26	7	3
Credit authorizers .....	240	.03	13	1
Credit checkers .....	120	.02	16	( <sup>3</sup> )
Adjustment clerks .....	610	.09	13	1
Bill and account collectors .....	220	.03	12	1
Secretaries .....	13,730	1.93	3	22
Receptionists and information clerks .....	350	.05	12	1
Typists .....	100	.01	26	( <sup>3</sup> )
Personnel clerks, except payroll and timekeeping .....	160	.02	10	( <sup>3</sup> )
File clerks .....	110	.02	15	( <sup>3</sup> )
Order clerks, materials, merchandise, and service .....	550	.08	16	1
Bookkeeping, accounting, and auditing clerks .....	32,660	4.59	2	49
Payroll and timekeeping clerks .....	300	.04	9	1
Billing, cost and rate clerks .....	4,240	.60	5	8
General office clerks .....	19,410	2.73	3	24
Electronic data processing and other office machine operators .....	3,220	.45	n.a.	n.a.
Computer operators, except peripheral equipment .....	2,380	.33	6	5
Data entry keyers, except composing .....	560	.08	9	1
All other office machine operators .....	280	.04	n.a.	n.a.
Switchboard operators .....	320	.05	10	1
Mail clerks, except mail machine operators and postal service .....	130	.02	16	( <sup>3</sup> )
Material recording, scheduling, dispatching, and distributing workers .....	41,830	5.88	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	450	.06	11	1
Marking clerks .....	170	.02	24	( <sup>3</sup> )
Stock clerks, stockroom, warehouse or storage yard .....	29,750	4.18	3	18
Order fillers, wholesale and retail trade .....	820	.12	15	1
Traffic, shipping, and receiving clerks .....	10,170	1.43	4	13
All other material recording, scheduling, and distributing workers .....	470	.07	n.a.	n.a.
All other clerical and administrative support workers .....	620	.09	n.a.	n.a.
Service occupations .....	7,290	1.03	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	200	.03	15	( <sup>3</sup> )
Detectives and investigators, except public .....	140	.02	20	( <sup>3</sup> )
Guards and watch guards .....	1,500	.21	8	2
Cleaning and building service workers, except private households .....	5,250	.74	n.a.	n.a.
Maids and housekeeping cleaners .....	240	.03	18	( <sup>3</sup> )
Janitors and cleaners, except maids and housekeeping cleaners .....	4,930	.69	4	10
All other cleaning and building service workers, except private households .....	80	.01	41	( <sup>3</sup> )
All other service workers .....	200	.03	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	18,600	2.62	n.a.	n.a.
Nursery workers .....	9,650	1.36	4	6
Gardeners and groundskeepers, except farm .....	8,410	1.18	4	6
All other agriculture, forestry, fishing, and related workers .....	540	.08	n.a.	n.a.

See footnotes at end of table.



**Table 16. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 52)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Production, construction, operating, maintenance, and material handling occupations .....	158,080	22.24	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	7,360	1.04	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	5,600	.79	5	8
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,760	.25	8	3
Inspectors and related workers .....	160	.02	n.a.	n.a.
Mechanics, installers, and repairers .....	26,020	3.66	n.a.	n.a.
Maintenance repairers, general utility .....	5,040	.71	7	6
Automotive mechanics .....	1,360	.19	11	2
Automotive body and related repairers .....	350	.05	31	( <sup>3</sup> )
Bus and truck mechanics and diesel engine specialists .....	890	.13	11	2
Farm equipment mechanics .....	80	.01	44	( <sup>3</sup> )
Small engine specialists .....	6,360	.89	4	8
Electric home appliance and power tool repairers .....	350	.05	22	1
Heating, air-conditioning, and refrigeration mechanics and installers .....	230	.03	37	( <sup>3</sup> )
Installers and repairers, manufactured buildings, mobile homes, and travel trailers .....	8,000	1.13	5	4
Tire repairers and changers .....	150	.02	30	( <sup>3</sup> )
All other mechanics, installers, and repairers .....	3,210	.45	n.a.	n.a.
Construction trades workers, except material moving .....	23,170	3.26	n.a.	n.a.
Carpenters .....	7,150	1.01	8	4
Electricians .....	80	.01	50	( <sup>3</sup> )
Painters and paperhangers, construction and maintenance .....	950	.13	19	1
Plumbers, pipefitters, and steamfitters .....	420	.06	25	( <sup>3</sup> )
Carpet installers .....	140	.02	30	( <sup>3</sup> )
Floor layers, except carpet, wood, and hard tiles .....	230	.03	37	( <sup>3</sup> )
Glaziers .....	11,970	1.68	5	5
Fence erectors .....	880	.12	29	( <sup>3</sup> )
All other construction trades workers .....	1,350	.19	21	1
Precision production workers .....	500	.07	n.a.	n.a.
Precision woodworkers .....	8,640	1.22	n.a.	n.a.
Wood machinists .....	7,840	1.10	6	5
Cabinetmakers and bench carpenters .....	800	.11	23	( <sup>3</sup> )
Machine setters, set-up operators, operators and tenders .....	1,030	.14	n.a.	n.a.
Hand workers, n.e.c. .....	10,390	1.46	n.a.	n.a.
Welders and cutters .....	140	.02	44	( <sup>3</sup> )
Carpet cutters, diagrammers, and seamers .....	110	.02	47	( <sup>3</sup> )
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	9,600	1.35	7	5
All other hand workers, n.e.c. .....	540	.08	23	( <sup>3</sup> )
Motor vehicle operators .....	51,790	7.28	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	20,160	2.84	4	13
Truck drivers, light, include delivery and route workers .....	31,280	4.40	3	24
Driver/sales workers .....	350	.05	31	( <sup>3</sup> )
Material moving equipment operators .....	11,050	1.55	n.a.	n.a.
Industrial truck and tractor operators .....	10,660	1.50	5	8
All other material moving equipment operators .....	390	.05	26	( <sup>3</sup> )
Helpers - mechanics and repairers .....	110	.02	34	( <sup>3</sup> )

See footnotes at end of table.

**Table 16. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 52)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Freight, stock, and material movers, hand .....	6,860	0.96	7	3
Hand packers and packagers .....	350	.05	28	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	10,290	1.45	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	360	.05	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 17. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 53)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,275,450	100.00	--	--
Managerial and administrative occupations .....	124,760	5.48	n.a.	n.a.
Financial managers .....	3,130	.14	7	8
Personnel, training, and labor relations managers .....	4,180	.18	6	13
Purchasing managers .....	12,440	.55	5	17
Marketing, advertising, and public relations managers .....	15,340	.67	4	15
Administrative services managers .....	1,070	.05	8	3
Communications, transportation, and utilities operations managers .....	3,930	.17	6	12
Food service and lodging managers .....	1,450	.06	6	6
General managers and top executives .....	62,420	2.74	2	79
All other managers and administrators .....	20,800	.91	8	17
Professional, paraprofessional, and technical occupations .....	68,660	3.02	n.a.	n.a.
Management support workers .....	39,080	1.72	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	4,810	.21	n.a.	n.a.
Accountants and auditors .....	3,170	.14	12	6
Budget analysts .....	1,000	.04	24	2
All other financial specialists .....	640	.03	17	1
Buyers, wholesale and retail trade, except farm products .....	22,930	1.01	6	13
Purchasing agents and buyers, farm products .....	590	.03	31	( <sup>3</sup> )
Purchasing agents, except wholesale and retail trade, and farm products .....	1,400	.06	24	1
Personnel, training, and labor relations specialists .....	7,130	.31	4	17
All other management support workers .....	2,220	.10	n.a.	n.a.
Engineers .....	670	.03	n.a.	n.a.
Computer scientists and related workers .....	2,730	.12	n.a.	n.a.
Systems analysts, electronic data processing .....	930	.04	15	2
Computer programmers .....	1,400	.06	11	2
Computer programmer aides .....	400	.02	14	1
Opticians, dispensing and measuring .....	370	.02	22	1
Pharmacists .....	3,100	.14	7	4
All other health professionals, paraprofessional and technicians .....	420	.02	n.a.	n.a.
Writers and editors .....	1,180	.05	11	3
Photographers .....	290	.01	20	1
Artists and related workers .....	1,670	.07	9	3
Designers, except interior designers .....	930	.04	11	3
Interior designers .....	1,640	.07	17	3
Merchandise displays and window trimmers .....	12,760	.56	3	24
All other professional, paraprofessional, and technical workers .....	3,820	.17	n.a.	n.a.
Sales and related occupations .....	1,441,540	63.35	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	82,360	3.62	3	51
Sales engineers .....	360	.02	25	( <sup>3</sup> )
Sales representatives, scientific and related products and services, except retail .....	310	.01	29	( <sup>3</sup> )
Sales representatives, except scientific and related products or services and retail .....	7,980	.35	15	2
Salespersons, retail .....	905,040	39.77	( <sup>3</sup> )	77
Salespersons, parts .....	9,390	.41	13	4
Counter and rental clerks .....	6,580	.29	14	4
Stock clerks, sales floor .....	173,690	7.63	3	52
Cashiers .....	206,790	9.09	2	57

See footnotes at end of table.

**Table 17. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 53)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	18,200	0.80	6	7
Demonstrators, promoters, and models .....	5,160	.23	13	5
All other sales and related workers .....	25,680	1.13	4	15
Clerical and administrative support occupations .....	375,390	16.50	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	22,090	.97	3	34
Credit authorizers .....	7,200	.32	10	5
Credit checkers .....	3,050	.13	9	3
Adjustment clerks .....	40,760	1.79	3	23
Bill and account collectors .....	9,390	.41	9	5
Secretaries .....	11,490	.50	6	20
Stenographers .....	360	.02	19	1
Receptionists and information clerks .....	2,000	.09	15	4
Typists .....	2,380	.10	19	3
Typists, word processing equipment .....	300	.01	14	1
Personnel clerks, except payroll and timekeeping .....	4,450	.20	5	13
Correspondence clerks .....	870	.04	10	2
File clerks .....	2,470	.11	14	3
Order clerks, materials, merchandise, and service .....	20,630	.91	4	15
Bookkeeping, accounting, and auditing clerks .....	29,480	1.30	3	37
Payroll and timekeeping clerks .....	3,500	.15	4	10
Billing, cost and rate clerks .....	3,280	.14	7	5
General office clerks .....	43,230	1.90	4	34
Electronic data processing and other office machine operators .....	13,850	.61	n.a.	n.a.
Billing, posting, and calculating machine operators .....	1,270	.06	11	2
Computer operators, except peripheral equipment .....	2,160	.09	9	4
Peripheral EDP equipment operators .....	1,400	.06	12	2
Data entry keyers, except composing .....	8,190	.36	7	10
All other office machine operators .....	830	.04	19	1
Switchboard operators .....	13,080	.57	3	18
Mail clerks, except mail machine operators and postal service .....	1,400	.06	8	4
Material recording, scheduling, dispatching, and distributing workers .....	132,050	5.80	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	10,130	.45	7	6
Weighers, measurers, checkers, and samplers, recordkeeping .....	1,130	.05	17	1
Marking clerks .....	38,020	1.67	4	26
Stock clerks, stockroom, warehouse or storage yard .....	49,580	2.18	3	32
Order fillers, wholesale and retail trade .....	4,180	.18	15	2
Traffic, shipping, and receiving clerks .....	25,210	1.11	3	28
All other material recording, scheduling, and distributing workers .....	3,800	.17	19	2
All other clerical and administrative support workers .....	8,080	.36	7	8
Service occupations .....	129,770	5.70	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	4,410	.19	5	11
Detectives and investigators, except public .....	13,020	.57	4	16
Guards and watch guards .....	12,540	.55	3	15
Food and beverage preparation and service workers .....	45,100	1.98	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop .....	1,430	.06	7	3
Bartenders .....	230	.01	19	1

See footnotes at end of table.

**Table 17. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 53)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Waiters and waitresses .....	11,480	0.50	6	7
Dining room and cafeteria attendants, and bartender helpers .....	1,880	.08	10	3
Counter attendants, lunchroom, coffee shop, or cafeteria .....	10,870	.48	5	9
Bakers, bread and pastry .....	550	.02	14	1
Butchers and meat cutters .....	890	.04	17	2
Cooks, restaurant .....	2,610	.11	7	5
Cooks, institution or cafeteria .....	900	.04	20	1
Cooks, specialty fast food .....	1,850	.08	12	1
Cooks, short order .....	2,690	.12	9	4
Food preparation workers .....	4,690	.21	7	5
Combined food preparation and service workers .....	4,020	.18	8	4
All other food service workers .....	1,010	.04	11	2
Pharmacy assistants .....	960	.04	12	2
Cleaning and building service workers, except private households .....	31,810	1.40	n.a.	n.a.
Maids and housekeeping cleaners .....	1,460	.06	14	2
Janitors and cleaners, except maids and housekeeping cleaners .....	29,440	1.29	2	38
All other cleaning and building service workers, except private households .....	910	.04	14	1
Hairdressers, hairstylists, and cosmetologists .....	20,700	.91	6	7
All other service workers .....	1,230	.05	12	2
Agriculture, forestry, fishing, and related occupations .....	220	.01	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	135,110	5.94	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	4,650	.20	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	3,030	.13	5	9
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,620	.07	11	4
Inspectors and related workers .....	760	.03	n.a.	n.a.
Mechanics, installers, and repairers .....	67,760	2.98	n.a.	n.a.
Machinery maintenance mechanics .....	600	.03	13	1
Maintenance repairers, general utility .....	9,110	.40	5	13
Automotive mechanics .....	16,540	.73	4	12
Electronic home entertainment equipment repairers .....	660	.03	29	( <sup>3</sup> )
Electric home appliance and power tool repairers .....	22,260	.98	7	6
Heating, air-conditioning, and refrigeration mechanics and installers .....	400	.02	32	1
Bicycle repairers .....	620	.03	7	3
Tire repairers and changers .....	7,380	.32	7	6
All other mechanics, installers, and repairers .....	10,190	.45	n.a.	n.a.
Construction trades workers, except material moving .....	2,110	.09	n.a.	n.a.
Carpenters .....	770	.03	15	2
Electricians .....	500	.02	13	1
Painters and paperhangers, construction and maintenance .....	350	.02	17	1
All other construction trades workers .....	490	.02	42	( <sup>3</sup> )
Jewelers and silversmiths .....	250	.01	26	( <sup>3</sup> )
Furniture finishers .....	410	.02	12	2
Custom tailors and sewers .....	6,890	.30	4	13
Precision workers, n.e.c. .....	1,400	.06	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	3,690	.16	n.a.	n.a.
Sewing machine operators, garment .....	770	.03	15	1

See footnotes at end of table.

**Table 17. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 53)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Sewing machine operators, nongarment .....	820	0.04	33	( <sup>3</sup> )
All other machine setters and set-up operators, except metal and plastic .....	100	( <sup>3</sup> )	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	2,000	.09	n.a.	n.a.
Hand workers, n.e.c. ....	1,410	.06	n.a.	n.a.
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	320	.01	18	1
All other hand workers, n.e.c. ....	1,090	.05	n.a.	n.a.
Plant and system workers .....	620	.03	15	1
Motor vehicle operators .....	5,570	.24	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	2,680	.12	9	4
Truck drivers, light, include delivery and route workers .....	2,890	.13	9	6
Service station attendants .....	840	.04	28	1
All other transportation and motor vehicle operators .....	380	.02	19	( <sup>3</sup> )
Material moving equipment operators .....	2,640	.12	n.a.	n.a.
Industrial truck and tractor operators .....	2,200	.10	15	1
Conveyor operators and tenders .....	440	.02	45	( <sup>3</sup> )
Helpers - mechanics and repairers .....	1,930	.08	10	3
Freight, stock, and material movers, hand .....	19,160	.84	6	11
Hand packers and packagers .....	6,030	.27	7	4
All other helpers, laborers, and material movers, hand .....	8,060	.35	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	550	.02	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 18. Food stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 54)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,785,160	100.00	--	--
Managerial and administrative occupations .....	188,310	6.76	n.a.	n.a.
Financial managers .....	1,740	.06	9	3
Personnel, training, and labor relations managers .....	1,720	.06	11	3
Purchasing managers .....	25,380	.91	6	14
Marketing, advertising, and public relations managers .....	2,030	.07	15	2
Administrative services managers .....	1,390	.05	31	1
Communications, transportation, and utilities operations managers .....	1,160	.04	14	1
Food service and lodging managers .....	1,100	.04	20	1
General managers and top executives .....	135,030	4.85	2	59
All other managers and administrators .....	18,760	.67	7	6
Professional, paraprofessional, and technical occupations .....	41,940	1.51	n.a.	n.a.
Management support workers .....	32,060	1.15	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	7,390	.27	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	17,080	.61	7	9
Purchasing agents and buyers, farm products .....	4,480	.16	15	3
Personnel, training, and labor relations specialists .....	790	.03	13	1
All other management support workers .....	2,320	.08	n.a.	n.a.
Computer scientists and related workers .....	1,810	.06	n.a.	n.a.
Systems analysts, electronic data processing .....	540	.02	21	1
Computer programmers .....	910	.03	9	1
Computer programmer aides .....	360	.01	15	1
Health practitioners, technologists, technicians, and related health workers .....	6,050	.22	n.a.	n.a.
Designers, except interior designers .....	440	.02	25	( <sup>3</sup> )
All other professional, paraprofessional, and technical workers .....	1,180	.04	n.a.	n.a.
Sales and related occupations .....	1,690,850	60.71	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	72,320	2.60	4	16
Sales representatives, except scientific and related products or services and retail .....	1,900	.07	45	1
Salespersons, retail .....	257,170	9.23	3	34
Counter and rental clerks .....	13,550	.49	17	1
Stock clerks, sales floor .....	534,840	19.20	1	41
Cashiers .....	776,790	27.89	1	56
Demonstrators, promoters, and models .....	1,000	.04	20	1
All other sales and related workers .....	33,280	1.19	n.a.	n.a.
Clerical and administrative support occupations .....	165,140	5.93	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	4,240	.15	12	4
Adjustment clerks .....	1,040	.04	31	1
Bill and account collectors .....	350	.01	18	1
Secretaries .....	12,780	.46	8	10
Receptionists and information clerks .....	880	.03	12	2
Typists .....	670	.02	15	1
Personnel clerks, except payroll and timekeeping .....	900	.03	12	1
File clerks .....	670	.02	12	1

See footnotes at end of table.

**Table 18. Food stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 54)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Order clerks, materials, merchandise, and service .....	1,490	0.05	19	1
Bookkeeping, accounting, and auditing clerks .....	43,930	1.58	4	28
Payroll and timekeeping clerks .....	1,690	.06	10	3
Billing, cost and rate clerks .....	2,220	.08	13	2
General office clerks .....	26,830	.96	5	11
Electronic data processing and other office machine operators .....	3,550	.13	n.a.	n.a.
Billing, posting, and calculating machine operators .....	480	.02	32	( <sup>3</sup> )
Computer operators, except peripheral equipment .....	850	.03	10	1
Data entry keyers, except composing .....	1,610	.06	13	2
All other office machine operators .....	610	.02	n.a.	n.a.
Switchboard operators .....	360	.01	17	1
Mail clerks, except mail machine operators and postal service .....	420	.02	14	1
Material recording, scheduling, dispatching, and distributing workers .....	59,820	2.15	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	380	.01	12	1
Weighers, measurers, checkers, and samplers, recordkeeping .....	1,990	.07	40	( <sup>3</sup> )
Marking clerks .....	1,820	.07	19	1
Stock clerks, stockroom, warehouse or storage yard .....	43,200	1.55	8	7
Order fillers, wholesale and retail trade .....	5,320	.19	14	1
Traffic, shipping, and receiving clerks .....	5,960	.21	8	4
All other material recording, scheduling, and distributing workers .....	1,150	.04	38	( <sup>3</sup> )
All other clerical and administrative support workers .....	3,300	.12	n.a.	n.a.
<b>Service occupations .....</b>	<b>456,420</b>	<b>16.39</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, service .....	9,180	.33	9	5
Detectives and investigators, except public .....	1,430	.05	14	1
Guards and watch guards .....	2,470	.09	15	1
Food and beverage preparation and service workers .....	409,190	14.69	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop .....	620	.02	27	( <sup>3</sup> )
Waiters and waitresses .....	13,880	.50	11	4
Dining room and cafeteria attendants, and bartender helpers .....	2,120	.08	19	1
Counter attendants, lunchroom, coffee shop, or cafeteria .....	37,510	1.35	6	9
Bakers, bread and pastry .....	66,620	2.39	3	31
Butchers and meat cutters .....	142,230	5.11	2	36
Cooks, restaurant .....	1,550	.06	22	1
Cooks, institution or cafeteria .....	680	.02	27	( <sup>3</sup> )
Cooks, specialty fast food .....	460	.02	36	( <sup>3</sup> )
Cooks, short order .....	9,620	.35	14	4
Food preparation workers .....	74,620	2.68	5	16
Combined food preparation and service workers .....	43,140	1.55	7	9
All other food service workers .....	16,140	.58	n.a.	n.a.
Pharmacy assistants .....	1,550	.06	13	1
Cleaning and building service workers, except private households .....	30,090	1.08	n.a.	n.a.
Hairdressers, hairstylists, and cosmetologists .....	400	.01	16	1
All other service workers .....	2,110	.08	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	1,050	.04	n.a.	n.a.

See footnotes at end of table.



**Table 18. Food stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 54)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Production, construction, operating, maintenance, and material handling occupations .....	241,450	8.67	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	1,710	.06	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	460	.02	28	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,250	.04	15	1
Mechanics, installers, and repairers .....	8,260	.30	n.a.	n.a.
Machinery maintenance mechanics .....	880	.03	20	( <sup>3</sup> )
Maintenance repairers, general utility .....	4,550	.16	10	5
Automotive mechanics .....	300	.01	48	( <sup>3</sup> )
Bus and truck mechanics and diesel engine specialists .....	1,090	.04	15	( <sup>3</sup> )
Heating, air-conditioning, and refrigeration mechanics and installers .....	780	.03	15	1
All other mechanics, installers, and repairers .....	660	.02	n.a.	n.a.
Carpenters .....	410	.01	26	( <sup>3</sup> )
Precision production workers .....	2,980	.11	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	5,980	.21	n.a.	n.a.
Packaging and filling machine operators and tenders .....	4,930	.18	13	1
All other machine setters and set-up operators, except metal and plastic .....	120	( <sup>3</sup> )	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	930	.03	20	1
Hand workers, including assemblers and fabricators .....	830	.03	n.a.	n.a.
Motor vehicle operators .....	23,090	.83	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	12,360	.44	10	3
Truck drivers, light, include delivery and route workers .....	7,300	.26	9	7
Driver/sales workers .....	3,430	.12	16	3
Service station attendants .....	840	.03	41	( <sup>3</sup> )
Industrial truck and tractor operators .....	3,550	.13	31	( <sup>3</sup> )
Freight, stock, and material movers, hand .....	131,590	4.72	3	10
Hand packers and packagers .....	48,380	1.74	7	10
All other helpers, laborers, and material movers, hand .....	12,830	.46	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	1,000	.04	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 19. Automotive dealers and gasoline service stations: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 55)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,915,410	100.00	--	--
Managerial and administrative occupations .....	161,680	8.44	n.a.	n.a.
Financial managers .....	2,160	.11	7	3
Personnel, training, and labor relations managers .....	630	.03	19	1
Purchasing managers .....	710	.04	17	1
Marketing, advertising, and public relations managers .....	36,740	1.92	3	17
Administrative services managers .....	920	.05	15	1
Communications, transportation, and utilities operations managers .....	500	.03	17	( <sup>3</sup> )
Food service and lodging managers .....	320	.02	12	( <sup>3</sup> )
General managers and top executives .....	114,360	5.97	1	54
All other managers and administrators .....	5,340	.28	10	2
Professional, paraprofessional, and technical occupations .....	15,880	.83	n.a.	n.a.
Management support workers .....	14,560	.76	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	12,720	.66	n.a.	n.a.
Accountants and auditors .....	12,300	.64	5	10
All other financial specialists .....	420	.02	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	640	.03	17	1
Cost estimators .....	440	.02	29	( <sup>3</sup> )
All other management support workers .....	760	.04	n.a.	n.a.
Computer programmers .....	270	.01	31	( <sup>3</sup> )
All other professional, paraprofessional, and technical workers .....	1,050	.05	n.a.	n.a.
Sales and related occupations .....	575,850	30.06	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	20,230	1.06	4	8
Sales representatives, scientific and related products and services, except retail .....	490	.03	50	( <sup>3</sup> )
Sales representatives, except scientific and related products or services and retail .....	6,560	.34	17	1
Salespersons, retail .....	250,260	13.07	1	38
Salespersons, parts .....	128,910	6.73	2	34
Counter and rental clerks .....	1,800	.09	15	1
Stock clerks, sales floor .....	3,080	.16	13	1
Cashiers .....	162,310	8.47	2	30
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	270	.01	44	( <sup>3</sup> )
All other sales and related workers .....	1,940	.10	n.a.	n.a.
Clerical and administrative support occupations .....	244,660	12.77	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	39,990	2.09	3	23
Credit authorizers .....	410	.02	15	1
Credit checkers .....	480	.03	20	( <sup>3</sup> )
Adjustment clerks .....	740	.04	24	( <sup>3</sup> )
Bill and account collectors .....	620	.03	13	1
Secretaries .....	25,990	1.36	3	18
Receptionists and information clerks .....	1,630	.09	12	1
Typists .....	380	.02	21	( <sup>3</sup> )
Personnel clerks, except payroll and timekeeping .....	370	.02	20	( <sup>3</sup> )
File clerks .....	950	.05	10	1
Order clerks, materials, merchandise, and service .....	1,170	.06	15	1
Bookkeeping, accounting, and auditing clerks .....	77,620	4.05	2	42
Payroll and timekeeping clerks .....	1,140	.06	7	2

See footnotes at end of table.

**Table 19. Automotive dealers and gasoline service stations: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 55)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Billing, cost and rate clerks .....	14,440	0.75	4	8
General office clerks .....	43,050	2.25	3	20
Electronic data processing and other office machine operators .....	2,350	.12	n.a.	n.a.
Computer operators, except peripheral equipment .....	620	.03	14	1
Data entry keyers, except composing .....	1,190	.06	11	1
All other office machine operators .....	540	.03	n.a.	n.a.
Switchboard operators .....	1,910	.10	7	2
Mail clerks, except mail machine operators and postal service .....	190	.01	21	( <sup>3</sup> )
Material recording, scheduling, dispatching, and distributing workers .....	29,410	1.54	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	8,080	.42	6	4
Stock clerks, stockroom, warehouse or storage yard .....	18,810	.98	4	10
Order fillers, wholesale and retail trade .....	670	.03	19	( <sup>3</sup> )
Traffic, shipping, and receiving clerks .....	1,150	.06	15	1
All other material recording, scheduling, and distributing workers .....	700	.04	n.a.	n.a.
All other clerical and administrative support workers .....	1,820	.10	n.a.	n.a.
Service occupations .....	46,090	2.41	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	1,350	.07	14	1
Guards and watch guards .....	550	.03	28	( <sup>3</sup> )
Food and beverage preparation and service workers .....	23,080	1.20	n.a.	n.a.
Waiters and waitresses .....	11,340	.59	7	2
Dining room and cafeteria attendants, and bartender helpers .....	540	.03	22	( <sup>3</sup> )
Cooks, restaurant .....	1,350	.07	12	( <sup>3</sup> )
Cooks, short order .....	4,650	.24	10	2
Food preparation workers .....	3,760	.20	9	2
All other food service workers .....	1,440	.08	n.a.	n.a.
Cleaning and building service workers, except private households .....	19,170	1.00	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners .....	18,430	.96	4	11
All other cleaning and building service workers, except private households .....	740	.04	n.a.	n.a.
All other service workers .....	1,940	.10	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	280	.01	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	870,970	45.47	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	56,430	2.95	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	53,890	2.81	2	24
All other first-line supervisors and manager/ supervisors - production, construction, maintenance and related .....	2,540	.13	11	1
Production inspectors, testers, graders, sorters, samplers, and weighers .....	210	.01	41	( <sup>3</sup> )
All other inspectors, testers and related occupations .....	580	.03	24	( <sup>3</sup> )
Mechanics, installers, and repairers .....	434,280	22.67	n.a.	n.a.
Machinery maintenance mechanics .....	240	.01	47	( <sup>3</sup> )

See footnotes at end of table.

**Table 19. Automotive dealers and gasoline service stations: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 55)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Maintenance repairers, general utility .....	11,870	0.62	8	6
Automotive mechanics .....	282,140	14.73	1	48
Automotive body and related repairers .....	52,040	2.72	3	12
Motorcycle repairers .....	9,470	.49	3	4
Bus and truck mechanics and diesel engine specialists .....	7,710	.40	11	3
Aircraft mechanics .....	1,180	.06	6	1
Aircraft engine specialists .....	270	.01	14	( <sup>3</sup> )
Small engine specialists .....	8,520	.44	4	4
Electrical installers and repairers, transportation equipment .....	1,980	.10	17	1
Heating, air-conditioning, and refrigeration mechanics and installers .....	330	.02	41	( <sup>3</sup> )
Installers and repairers, manufactured buildings, mobile homes, and travel trailers .....	4,030	.21	7	2
Tire repairers and changers .....	50,960	2.66	4	13
All other mechanics, installers, and repairers .....	3,540	.18	n.a.	n.a.
Precision metal workers .....	4,660	.24	n.a.	n.a.
Machinists .....	4,430	.23	12	2
Sheet-metal workers .....	230	.01	42	( <sup>3</sup> )
Upholsterers .....	340	.02	33	( <sup>3</sup> )
Precision workers, n.e.c. ....	210	.01	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	4,880	.25	n.a.	n.a.
Painters, transportation equipment .....	4,030	.21	8	2
All other machine setters and set-up operators, except metal and plastic .....	130	.01	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	720	.04	n.a.	n.a.
Hand workers, n.e.c. ....	1,260	.07	n.a.	n.a.
Welders and cutters .....	230	.01	40	( <sup>3</sup> )
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	460	.02	23	( <sup>3</sup> )
All other hand workers, n.e.c. ....	570	.03	28	( <sup>3</sup> )
Motor vehicle operators .....	29,790	1.56	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	7,050	.37	8	4
Truck drivers, light, include delivery and route workers .....	21,810	1.14	5	10
Driver/sales workers .....	930	.05	22	1
Service station attendants .....	224,340	11.71	2	34
All other transportation and motor vehicle operators .....	4,770	.25	13	1
Material moving equipment operators .....	410	.02	n.a.	n.a.
Industrial truck and tractor operators .....	210	.01	25	( <sup>3</sup> )
All other material moving equipment operators .....	200	.01	45	( <sup>3</sup> )
Helpers - mechanics and repairers .....	41,750	2.18	4	16
Freight, stock, and material movers, hand .....	1,780	.09	18	1
Vehicle washers and equipment cleaners .....	58,050	3.03	2	18
All other helpers, laborers, and material movers, hand .....	6,850	.36	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	380	.02	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 20. Apparel and accessory stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 56)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,030,940	100.00	--	--
Managerial and administrative occupations .....	97,490	9.46	n.a.	n.a.
Financial managers .....	800	.08	19	2
Personnel, training, and labor relations managers .....	600	.06	19	1
Purchasing managers .....	8,900	.86	5	11
Administrative services managers .....	230	.02	36	( <sup>3</sup> )
Communications, transportation, and utilities operations managers .....	370	.04	39	1
General managers and top executives .....	83,320	8.08	2	59
All other managers and administrators .....	3,270	.32	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	27,920	2.71	n.a.	n.a.
Management support workers .....	20,460	1.98	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	4,240	.41	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	15,170	1.47	6	13
Purchasing agents, except wholesale and retail trade, and farm products .....	110	.01	30	( <sup>3</sup> )
All other management support workers .....	940	.09	n.a.	n.a.
Computer scientists and related workers .....	940	.09	n.a.	n.a.
Systems analysts, electronic data processing .....	210	.02	34	( <sup>3</sup> )
Computer programmers .....	550	.05	26	1
Computer programmer aides .....	180	.02	22	( <sup>3</sup> )
Writers and editors .....	120	.01	45	( <sup>3</sup> )
Artists and related workers .....	420	.04	26	1
Designers, except interior designers .....	180	.02	38	( <sup>3</sup> )
Merchandise displays and window trimmers .....	5,100	.49	6	8
All other professional, paraprofessional, and technical workers .....	700	.07	n.a.	n.a.
Sales and related occupations .....	764,190	74.13	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	57,380	5.57	5	34
Sales representatives, except scientific and related products or services and retail .....	1,320	.13	23	( <sup>3</sup> )
Salespersons, retail .....	600,570	58.25	1	92
Salespersons, parts .....	1,300	.13	25	( <sup>3</sup> )
Counter and rental clerks .....	3,650	.35	15	1
Stock clerks, sales floor .....	48,160	4.67	4	20
Cashiers .....	46,880	4.55	5	18
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	150	.01	43	( <sup>3</sup> )
Demonstrators, promoters, and models .....	750	.07	24	1
All other sales and related workers .....	4,030	.39	n.a.	n.a.
Clerical and administrative support occupations .....	83,720	8.12	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	8,620	.84	6	11
Credit authorizers .....	750	.07	28	1
Credit checkers .....	330	.03	31	( <sup>3</sup> )
Adjustment clerks .....	1,590	.15	16	2
Bill and account collectors .....	1,600	.16	17	3
Secretaries .....	5,060	.49	7	7
Receptionists and information clerks .....	1,610	.16	31	1
Typists .....	190	.02	22	( <sup>3</sup> )
Personnel clerks, except payroll and timekeeping .....	330	.03	23	1
Correspondence clerks .....	360	.03	29	1

See footnotes at end of table.

**Table 20. Apparel and accessory stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 56)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
File clerks .....	180	0.02	30	( <sup>3</sup> )
Order clerks, materials, merchandise, and service .....	1,710	.17	22	2
Bookkeeping, accounting, and auditing clerks .....	17,740	1.72	4	21
Payroll and timekeeping clerks .....	580	.06	17	1
Billing, cost and rate clerks .....	690	.07	16	1
General office clerks .....	11,580	1.12	18	10
Electronic data processing and other office machine operators .....	4,860	.47	n.a.	n.a.
Computer operators, except peripheral equipment .....	1,360	.13	11	2
Data entry keyers, except composing .....	2,010	.19	14	3
All other office machine operators .....	1,490	.14	n.a.	n.a.
Switchboard operators .....	480	.05	15	1
Material recording, scheduling, dispatching, and distributing workers .....	24,230	2.35	n.a.	n.a.
Stock clerks, stockroom, warehouse or storage yard .....	9,640	.94	32	6
Traffic, shipping, and receiving clerks .....	6,880	.67	13	7
All other material recording, scheduling, and distributing workers .....	7,710	.75	n.a.	n.a.
All other clerical and administrative support workers .....	1,230	.12	n.a.	n.a.
<b>Service occupations .....</b>	<b>12,900</b>	<b>1.25</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, service .....	290	.03	27	( <sup>3</sup> )
Detectives and investigators, except public .....	860	.08	14	1
Guards and watch guards .....	1,500	.15	11	1
Food and beverage preparation and service workers .....	1,370	.13	n.a.	n.a.
Combined food preparation and service workers .....	830	.08	24	( <sup>3</sup> )
All other food service workers .....	540	.05	n.a.	n.a.
Cleaning and building service workers, except private households .....	7,390	.72	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners .....	6,880	.67	6	8
All other cleaning and building service workers, except private households .....	510	.05	n.a.	n.a.
Hairdressers, hairstylists, and cosmetologists .....	1,120	.11	28	( <sup>3</sup> )
All other service workers .....	370	.04	n.a.	n.a.
<b>Agriculture, forestry, fishing, and related occupations .....</b>	<b>120</b>	<b>.01</b>	<b>n.a.</b>	<b>n.a.</b>
<b>Production, construction, operating, maintenance, and material handling occupations .....</b>	<b>44,600</b>	<b>4.33</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	400	.04	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	110	.01	38	( <sup>3</sup> )
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	290	.03	19	( <sup>3</sup> )
Mechanics, installers, and repairers .....	1,480	.14	n.a.	n.a.
Maintenance repairers, general utility .....	1,350	.13	18	1
All other mechanics, installers, and repairers .....	130	.01	n.a.	n.a.
Jewelers and silversmiths .....	140	.01	40	( <sup>3</sup> )
Custom tailors and sewers .....	25,220	2.45	4	15
Precision workers, n.e.c. ....	1,330	.13	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	7,640	.74	n.a.	n.a.
Sewing machine operators, garment .....	7,130	.69	8	4

See footnotes at end of table.

**Table 20. Apparel and accessory stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 56)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other machine setters and set-up operators, except metal and plastic .....	120	0.01	32	( <sup>3</sup> )
All other machine operators and tenders, except metal and plastic .....	390	.04	n.a.	n.a.
Hand workers, including assemblers and fabricators .....	880	.09	n.a.	n.a.
Motor vehicle operators .....	1,910	.19	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	190	.02	37	( <sup>3</sup> )
Truck drivers, light, include delivery and route workers .....	1,720	.17	25	3
Freight, stock, and material movers, hand .....	2,700	.26	34	2
Hand packers and packagers .....	1,680	.16	45	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	600	.06	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	620	.06	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 21. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 57)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	726,440	100.00	--	--
Managerial and administrative occupations .....	85,820	11.81	n.a.	n.a.
Financial managers .....	620	.09	11	1
Personnel, training, and labor relations managers .....	460	.06	14	1
Purchasing managers .....	9,540	1.31	4	15
Marketing, advertising, and public relations managers .....	1,570	.22	9	3
Administrative services managers .....	280	.04	19	( <sup>3</sup> )
Communications, transportation, and utilities operations managers .....	560	.08	11	1
General managers and top executives .....	69,910	9.62	2	67
All other managers and administrators .....	2,880	.40	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	37,620	5.18	n.a.	n.a.
Management support workers .....	14,820	2.04	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	5,230	.72	n.a.	n.a.
Accountants and auditors .....	5,020	.69	5	9
All other financial specialists .....	210	.03	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	8,140	1.12	5	11
Personnel, training, and labor relations specialists .....	300	.04	17	1
Cost estimators .....	180	.02	32	( <sup>3</sup> )
All other management support workers .....	970	.13	n.a.	n.a.
Engineers .....	560	.08	n.a.	n.a.
Engineering and related technicians and technologists .....	1,110	.15	n.a.	n.a.
Electrical and electronic engineering technicians and technologists .....	570	.08	22	( <sup>3</sup> )
Drafters .....	140	.02	28	( <sup>3</sup> )
All other engineering and related technicians and technologists .....	400	.06	n.a.	n.a.
Computer scientists and related workers .....	1,300	.18	n.a.	n.a.
Systems analysts, electronic data processing .....	440	.06	25	( <sup>3</sup> )
Computer programmers .....	740	.10	19	1
Computer programmer aides .....	120	.02	19	( <sup>3</sup> )
Health practitioners, technologists, technicians, and related health workers .....	210	.03	n.a.	n.a.
Writers and editors .....	170	.02	19	( <sup>3</sup> )
Artists and related workers .....	280	.04	18	1
Designers, except interior designers .....	2,360	.32	15	2
Interior designers .....	14,700	2.02	6	10
Merchandise displayers and window trimmers .....	550	.08	14	1
All other professional, paraprofessional, and technical workers .....	1,560	.21	n.a.	n.a.
Sales and related occupations .....	296,370	40.80	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	13,940	1.92	5	9
Sales engineers .....	130	.02	42	( <sup>3</sup> )
Sales representatives, scientific and related products and services, except retail .....	2,060	.28	17	1
Sales representatives, except scientific and related products or services and retail .....	4,720	.65	12	1
Salespersons, retail .....	229,680	31.62	1	79
Counter and rental clerks .....	1,490	.21	42	1
Stock clerks, sales floor .....	21,000	2.89	5	15
Cashiers .....	18,860	2.60	5	12

See footnotes at end of table.



**Table 21. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 57)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	900	0.12	18	( <sup>3</sup> )
Demonstrators, promoters, and models .....	1,890	.26	14	1
All other sales and related workers .....	1,700	.23	n.a.	n.a.
Clerical and administrative support occupations .....	133,420	18.37	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	16,130	2.22	4	22
Credit authorizers .....	550	.08	17	( <sup>3</sup> )
Credit checkers .....	510	.07	17	1
Adjustment clerks .....	1,200	.17	13	1
Bill and account collectors .....	6,030	.83	6	9
Secretaries .....	13,860	1.91	3	20
Receptionists and information clerks .....	4,240	.58	6	7
Typists .....	210	.03	24	( <sup>3</sup> )
Typists, word processing equipment .....	100	.01	30	( <sup>3</sup> )
Personnel clerks, except payroll and timekeeping .....	220	.03	14	1
File clerks .....	180	.02	21	( <sup>3</sup> )
Order clerks, materials, merchandise, and service .....	1,340	.18	17	1
Bookkeeping, accounting, and auditing clerks .....	28,270	3.89	2	39
Payroll and timekeeping clerks .....	680	.09	16	1
Billing, cost and rate clerks .....	1,940	.27	8	3
General office clerks .....	24,060	3.31	3	24
Electronic data processing and other office machine operators .....	3,870	.53	n.a.	n.a.
Billing, posting, and calculating machine operators .....	1,760	.24	9	3
Computer operators, except peripheral equipment .....	460	.06	14	1
Data entry keyers, except composing .....	1,530	.21	12	1
All other office machine operators .....	120	.02	n.a.	n.a.
Switchboard operators .....	1,530	.21	8	3
Mail clerks, except mail machine operators and postal service .....	130	.02	22	( <sup>3</sup> )
Material recording, scheduling, dispatching, and distributing workers .....	27,790	3.83	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	310	.04	17	( <sup>3</sup> )
Marking clerks .....	210	.03	20	( <sup>3</sup> )
Stock clerks, stockroom, warehouse or storage yard .....	17,180	2.36	4	14
Order fillers, wholesale and retail trade .....	700	.10	31	( <sup>3</sup> )
Traffic, shipping, and receiving clerks .....	9,030	1.24	5	12
All other material recording, scheduling, and distributing workers .....	360	.05	n.a.	n.a.
All other clerical and administrative support workers .....	580	.08	n.a.	n.a.
Service occupations .....	8,790	1.21	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	220	.03	20	( <sup>3</sup> )
Guards and watch guards .....	490	.07	23	( <sup>3</sup> )
Food and beverage preparation and service workers .....	160	.02	n.a.	n.a.
Cleaning and building service workers, except private households .....	7,580	1.04	n.a.	n.a.
Maids and housekeeping cleaners .....	1,050	.14	13	1
Janitors and cleaners, except maids and housekeeping cleaners .....	6,160	.85	5	11
All other cleaning and building service workers, except private households .....	370	.05	38	( <sup>3</sup> )
All other service workers .....	340	.05	n.a.	n.a.

See footnotes at end of table.

**Table 21. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 57)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Agriculture, forestry, fishing, and related occupations .....	50	0.01	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	164,370	22.63	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	5,940	.82	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	5,210	.72	6	8
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	730	.10	13	1
Inspectors and related workers .....	850	.12	n.a.	n.a.
Mechanics, installers, and repairers .....	43,770	6.03	n.a.	n.a.
Maintenance repairers, general utility .....	3,830	.53	8	4
Automotive mechanics .....	340	.05	41	( <sup>3</sup> )
Data processing equipment repairers .....	1,540	.21	14	1
Electronic home entertainment equipment repairers .....	16,090	2.21	5	12
Electric home appliance and power tool repairers .....	10,630	1.46	5	11
Electrical installers and repairers, transportation equipment .....	910	.13	23	( <sup>3</sup> )
Heating, air-conditioning, and refrigeration mechanics and installers .....	2,440	.34	11	2
Musical instrument repairers and tuners .....	3,060	.42	12	2
Gas appliance repairers .....	450	.06	20	1
Tire repairers and changers .....	90	.01	45	( <sup>3</sup> )
All other mechanics, installers, and repairers .....	4,390	.60	n.a.	n.a.
Construction trades workers, except material moving .....	18,620	2.56	n.a.	n.a.
Carpenters .....	2,490	.34	14	1
Ceiling tile installers and acoustical carpenters .....	270	.04	40	( <sup>3</sup> )
Electricians .....	320	.04	42	( <sup>3</sup> )
Carpet installers .....	11,680	1.61	7	6
Floor layers, except carpet, wood, and hard tiles .....	2,920	.40	14	2
All other construction trades workers .....	940	.13	25	1
Precision woodworkers .....	18,040	2.48	n.a.	n.a.
Cabinetmakers and bench carpenters .....	13,830	1.90	9	4
Furniture finishers .....	4,210	.58	8	6
Upholsterers .....	1,910	.26	14	2
Precision workers, n.e.c. .....	610	.08	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	8,080	1.11	n.a.	n.a.
Sewing machine operators, nongarment .....	7,660	1.05	10	3
All other machine setters and set-up operators, except metal and plastic .....	80	.01	n.a.	n.a.
All other machine operators and tenders, except metal and plastic .....	340	.05	n.a.	n.a.
Hand workers, n.e.c. .....	7,500	1.03	n.a.	n.a.
Carpet cutters, diagrammers, and seamers .....	1,140	.16	22	1
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	5,790	.80	13	2
All other hand workers, n.e.c. .....	570	.08	n.a.	n.a.
Motor vehicle operators .....	38,260	5.27	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	3,130	.43	11	3
Truck drivers, light, include delivery and route workers .....	34,720	4.78	3	30
Driver/sales workers .....	410	.06	31	( <sup>3</sup> )

See footnotes at end of table.

**Table 21. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 57)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other transportation and motor vehicle operators .....	160	0.02	48	( <sup>3</sup> )
Industrial truck and tractor operators .....	650	.09	20	( <sup>3</sup> )
Freight, stock, and material movers, hand .....	16,280	2.24	5	13
Hand packers and packagers .....	290	.04	31	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	2,910	.40	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	500	.07	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 22. Eating and drinking places: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 58)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	5,923,060	100.00	--	--
Managerial and administrative occupations .....	338,350	5.71	n.a.	n.a.
Financial managers .....	2,770	.05	11	5
Personnel, training, and labor relations managers .....	2,280	.04	12	4
Purchasing managers .....	1,540	.03	19	3
Marketing, advertising, and public relations managers .....	2,160	.04	22	3
Administrative services managers .....	1,340	.02	14	2
Food service and lodging managers .....	198,200	3.35	3	46
General managers and top executives .....	121,400	2.05	4	34
All other managers and administrators .....	8,660	.15	n.a.	n.a.
Professional, paraprofessional, and technical occupations .....	37,630	.64	n.a.	n.a.
Management support workers .....	22,940	.39	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	18,110	.31	n.a.	n.a.
Buyers, wholesale and retail trade, except farm products .....	770	.01	29	1
Personnel, training, and labor relations specialists .....	1,300	.02	16	2
All other management support workers .....	2,760	.05	n.a.	n.a.
Musicians, instrumental .....	7,580	.13	20	2
All other professional, paraprofessional, and technical workers .....	7,110	.12	n.a.	n.a.
Sales and related occupations .....	306,670	5.18	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	3,840	.06	28	1
Sales representatives, except scientific and related products or services and retail .....	710	.01	33	( <sup>3</sup> )
Salespersons, retail .....	29,110	.49	23	2
Cashiers .....	261,200	4.41	5	27
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	7,840	.13	23	( <sup>3</sup> )
All other sales and related workers .....	3,970	.07	n.a.	n.a.
Clerical and administrative support occupations .....	105,600	1.78	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	18,130	.31	10	9
Secretaries .....	13,660	.23	12	10
Receptionists and information clerks .....	2,360	.04	26	3
Bookkeeping, accounting, and auditing clerks .....	40,400	.68	6	21
Payroll and timekeeping clerks .....	2,150	.04	14	3
Billing, cost and rate clerks .....	5,210	.09	28	2
General office clerks .....	13,850	.23	11	8
Electronic data processing and other office machine operators .....	2,020	.03	n.a.	n.a.
Switchboard operators .....	740	.01	30	1
Material recording, scheduling, dispatching, and distributing workers .....	2,960	.05	n.a.	n.a.
All other clerical and administrative support workers .....	4,120	.07	n.a.	n.a.
Service occupations .....	5,064,010	85.50	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	172,760	2.92	3	34
Guards and watch guards .....	13,780	.23	19	2
Food and beverage preparation and service workers .....	4,781,750	80.73	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop .....	144,280	2.44	4	29

See footnotes at end of table.

**Table 22. Eating and drinking places: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 58)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Bartenders .....	255,140	4.31	4	35
Waiters and waitresses .....	1,357,300	22.92	1	59
Dining room and cafeteria attendants, and bartender helpers .....	286,690	4.84	4	28
Counter attendants, lunchroom, coffee shop, or cafeteria .....	252,870	4.27	6	11
Bakers, bread and pastry .....	30,820	.52	10	9
Butchers and meat cutters .....	3,130	.05	17	2
Cooks, restaurant .....	384,890	6.50	3	46
Cooks, institution or cafeteria .....	30,690	.52	13	4
Cooks, specialty fast food .....	427,260	7.21	4	22
Cooks, short order .....	122,400	2.07	7	13
Food preparation workers .....	457,920	7.73	3	45
Combined food preparation and service workers .....	962,020	16.24	2	26
All other food service workers .....	66,340	1.12	8	7
Cleaning and building service workers, except private households .....	92,900	1.57	n.a.	n.a.
Maids and housekeeping cleaners .....	19,860	.34	15	4
Janitors and cleaners, except maids and housekeeping cleaners .....	70,290	1.19	6	22
All other cleaning and building service workers, except private households .....	2,750	.05	41	( <sup>3</sup> )
All other service workers .....	2,820	.05	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	790	.01	n.a.	n.a.
Gardeners and groundskeepers, except farm .....	790	.01	34	1
Production, construction, operating, maintenance, and material handling occupations .....	70,010	1.18	n.a.	n.a.
Mechanics, installers, and repairers .....	15,150	.26	n.a.	n.a.
Maintenance repairers, general utility .....	13,230	.22	10	8
All other mechanics, installers, and repairers .....	1,920	.03	n.a.	n.a.
Motor vehicle operators .....	43,360	.73	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	1,100	.02	49	( <sup>3</sup> )
Truck drivers, light, include delivery and route workers .....	15,830	.27	22	2
Driver/sales workers .....	26,430	.45	20	2
Service station attendants .....	2,320	.04	42	( <sup>3</sup> )
Freight, stock, and material movers, hand .....	1,430	.02	35	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	2,350	.04	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	5,400	.09	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 23. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985**

(SIC 59)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	2,157,010	100.00	--	--
Managerial and administrative occupations .....	178,110	8.26	n.a.	n.a.
Financial managers .....	1,430	.07	6	2
Personnel, training, and labor relations managers .....	980	.05	8	1
Purchasing managers .....	22,850	1.06	4	12
Marketing, advertising, and public relations managers .....	2,810	.13	8	2
Administrative services managers .....	1,150	.05	11	1
Communications, transportation, and utilities operations managers .....	1,780	.08	12	1
Food service and lodging managers .....	1,520	.07	21	( <sup>3</sup> )
General managers and top executives .....	138,760	6.43	1	51
All other managers and administrators .....	6,830	.32	7	1
Professional, paraprofessional, and technical occupations .....	196,160	9.09	n.a.	n.a.
Management support workers .....	39,900	1.85	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	13,710	.64	n.a.	n.a.
Accountants and auditors .....	13,140	.61	4	7
Budget analysts .....	240	.01	13	( <sup>3</sup> )
All other financial specialists .....	330	.02	18	( <sup>3</sup> )
Buyers, wholesale and retail trade, except farm products .....	24,180	1.12	4	10
Purchasing agents, except wholesale and retail trade, and farm products .....	260	.01	21	( <sup>3</sup> )
Personnel, training, and labor relations specialists .....	680	.03	16	( <sup>3</sup> )
All other management support workers .....	1,070	.05	n.a.	n.a.
Engineers .....	460	.02	n.a.	n.a.
Engineering and related technicians and technologists .....	880	.04	n.a.	n.a.
Computer scientists and related workers .....	3,760	.17	n.a.	n.a.
Systems analysts, electronic data processing .....	1,500	.07	17	( <sup>3</sup> )
Computer programmers .....	1,890	.09	10	1
Computer programmer aides .....	370	.02	12	( <sup>3</sup> )
Registered nurses .....	230	.01	36	( <sup>3</sup> )
Opticians, dispensing and measuring .....	17,090	.79	10	2
Pharmacists .....	84,550	3.92	1	14
All other health professionals, paraprofessional and technicians .....	3,860	.18	15	1
Writers and editors .....	460	.02	19	( <sup>3</sup> )
Photographers .....	630	.03	32	( <sup>3</sup> )
Artists and related workers .....	1,320	.06	21	1
Designers, except interior designers .....	35,620	1.65	5	7
Interior designers .....	2,470	.11	17	1
Merchandise displays and window trimmers .....	390	.02	19	( <sup>3</sup> )
All other professional, paraprofessional, and technical workers .....	4,540	.21	n.a.	n.a.
Sales and related occupations .....	1,134,580	52.60	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	82,450	3.82	2	25
Sales representatives, scientific and related products and services, except retail .....	2,820	.13	21	( <sup>3</sup> )
Sales representatives, except scientific and related products or services and retail .....	5,910	.27	13	1
Salespersons, retail .....	625,190	28.98	1	61
Salespersons, parts .....	1,450	.07	24	( <sup>3</sup> )
Counter and rental clerks .....	970	.04	26	( <sup>3</sup> )
Stock clerks, sales floor .....	149,260	6.92	2	23
Cashiers .....	232,990	10.80	2	23

See footnotes at end of table.

**Table 23. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 59)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
News and street vendors, telephone solicitors, door-to-door sales workers, and other related workers .....	27,220	1.26	7	2
Demonstrators, promoters, and models .....	590	.03	39	( <sup>3</sup> )
All other sales and related workers .....	5,730	.27	n.a.	n.a.
Clerical and administrative support occupations .....	280,680	13.01	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	5,770	.27	6	3
Credit authorizers .....	580	.03	18	( <sup>3</sup> )
Credit checkers .....	490	.02	19	( <sup>3</sup> )
Adjustment clerks .....	5,820	.27	15	1
Bill and account collectors .....	2,210	.10	15	1
Secretaries .....	28,770	1.33	3	14
Receptionists and information clerks .....	1,380	.06	13	1
Typists .....	1,760	.08	9	1
Typists, word processing equipment .....	330	.02	16	( <sup>3</sup> )
Personnel clerks, except payroll and timekeeping .....	570	.03	9	1
Correspondence clerks .....	510	.02	24	( <sup>3</sup> )
File clerks .....	1,070	.05	15	( <sup>3</sup> )
Order clerks, materials, merchandise, and service .....	18,880	.88	6	5
Bookkeeping, accounting, and auditing clerks .....	67,420	3.13	2	31
Payroll and timekeeping clerks .....	1,060	.05	6	1
Billing, cost and rate clerks .....	8,560	.40	6	4
General office clerks .....	51,790	2.40	3	17
Electronic data processing and other office machine operators .....	8,830	.41	n.a.	n.a.
Billing, posting, and calculating machine operators .....	610	.03	14	( <sup>3</sup> )
Computer operators, except peripheral equipment .....	2,130	.10	10	1
Peripheral EDP equipment operators .....	460	.02	14	( <sup>3</sup> )
Data entry keyers, except composing .....	5,170	.24	9	1
All other office machine operators .....	460	.02	30	( <sup>3</sup> )
Switchboard operators .....	740	.03	10	1
Mail clerks, except mail machine operators and postal service .....	1,580	.07	13	1
Material recording, scheduling, dispatching, and distributing workers .....	69,270	3.21	n.a.	n.a.
Dispatchers, except police, fire, and ambulance .....	1,060	.05	9	1
Weighers, measurers, checkers, and samplers, recordkeeping .....	750	.03	23	( <sup>3</sup> )
Marking clerks .....	2,280	.11	13	( <sup>3</sup> )
Stock clerks, stockroom, warehouse or storage yard .....	24,070	1.12	4	8
Order fillers, wholesale and retail trade .....	24,060	1.12	6	5
Traffic, shipping, and receiving clerks .....	15,990	.74	5	6
All other material recording, scheduling, and distributing workers .....	1,060	.05	18	( <sup>3</sup> )
All other clerical and administrative support workers .....	3,290	.15	n.a.	n.a.
Service occupations .....	97,120	4.50	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	2,460	.11	11	1
Detectives and investigators, except public .....	390	.02	18	( <sup>3</sup> )
Guards and watch guards .....	2,020	.09	12	1
Food and beverage preparation and service workers .....	44,670	2.07	n.a.	n.a.
Hosts and hostesses, restaurant, lounge or coffee shop .....	360	.02	31	( <sup>3</sup> )
Bartenders .....	2,220	.10	16	1
Waiters and waitresses .....	7,270	.34	16	1

See footnotes at end of table.

**Table 23. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 59)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Dining room and cafeteria attendants, and bartender helpers .....	1,460	0.07	20	( <sup>3</sup> )
Counter attendants, lunchroom, coffee shop, or cafeteria .....	8,980	.42	9	1
Cooks, restaurant .....	1,460	.07	28	( <sup>3</sup> )
Cooks, institution or cafeteria .....	1,200	.06	16	( <sup>3</sup> )
Cooks, specialty fast food .....	230	.01	45	( <sup>3</sup> )
Cooks, short order .....	3,600	.17	12	1
Food preparation workers .....	13,670	.63	7	2
Combined food preparation and service workers .....	1,770	.08	20	( <sup>3</sup> )
All other food service workers .....	2,450	.11	n.a.	n.a.
Pharmacy assistants .....	28,790	1.33	4	6
Cleaning and building service workers, except private households .....	13,410	.62	n.a.	n.a.
Janitors and cleaners, except maids and housekeeping cleaners .....	12,580	.58	5	7
All other cleaning and building service workers, except private households .....	830	.04	n.a.	n.a.
Hairdressers, hairstylists, and cosmetologists .....	2,060	.10	19	( <sup>3</sup> )
All other service workers .....	3,320	.15	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	7,630	.35	n.a.	n.a.
Nursery workers .....	4,720	.22	15	( <sup>3</sup> )
Gardeners and groundskeepers, except farm .....	1,580	.07	30	( <sup>3</sup> )
All other agriculture, forestry, fishing, and related workers .....	1,330	.06	n.a.	n.a.
Production, construction, operating, maintenance, and material handling occupations .....	262,730	12.18	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	3,320	.15	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	1,870	.09	13	1
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	1,450	.07	12	1
Production inspectors, testers, graders, sorters, samplers, and weighers .....	930	.04	23	( <sup>3</sup> )
All other inspectors, testers and related occupations .....	510	.02	21	( <sup>3</sup> )
Mechanics, installers, and repairers .....	76,500	3.55	n.a.	n.a.
Machinery maintenance mechanics .....	360	.02	20	( <sup>3</sup> )
Maintenance repairers, general utility .....	10,290	.48	7	4
Automotive mechanics .....	5,440	.25	8	2
Automotive body and related repairers .....	280	.01	30	( <sup>3</sup> )
Bus and truck mechanics and diesel engine specialists .....	1,930	.09	11	1
Electronic home entertainment equipment repairers .....	360	.02	35	( <sup>3</sup> )
Electric home appliance and power tool repairers .....	2,320	.11	12	1
Heating, air-conditioning, and refrigeration mechanics and installers .....	12,580	.58	4	3
Camera and photographic equipment repairers .....	330	.02	32	( <sup>3</sup> )
Watchmakers .....	3,520	.16	11	2
Office machine and cash register servicers .....	5,770	.27	13	1
Gas appliance repairers .....	3,680	.17	6	2
Coin and vending machine servicers and repairers .....	13,220	.61	7	2
Bicycle repairers .....	4,280	.20	17	1
All other mechanics, installers, and repairers .....	12,140	.56	n.a.	n.a.
Construction trades workers, except material moving .....	2,000	.09	n.a.	n.a.
Carpenters .....	240	.01	16	( <sup>3</sup> )

See footnotes at end of table.



**Table 23. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1985—Continued**

(SIC 59)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other construction trades workers .....	1,760	0.08	25	( <sup>3</sup> )
Jewelers and silversmiths .....	9,350	.43	8	3
Furniture finishers .....	340	.02	32	( <sup>3</sup> )
Custom tailors and sewers .....	700	.03	39	( <sup>3</sup> )
Upholsterers .....	240	.01	46	( <sup>3</sup> )
Precision workers, n.e.c. ....	5,830	.27	n.a.	n.a.
Machine setters, set-up operators, and tenders, except metal and plastic .....	5,420	.25	n.a.	n.a.
Sewing machine operators, garment .....	820	.04	35	( <sup>3</sup> )
Sewing machine operators, nongarment .....	840	.04	42	( <sup>3</sup> )
Packaging and filling machine operators and tenders .....	980	.05	25	( <sup>3</sup> )
All other machine setters and set-up operators, except metal and plastic .....	770	.04	29	( <sup>3</sup> )
All other machine operators and tenders, except metal and plastic .....	2,010	.09	n.a.	n.a.
Hand workers, n.e.c. ....	8,790	.41	n.a.	n.a.
Assemblers and fabricators, except machine, electrical, electronic, and precision .....	3,950	.18	17	( <sup>3</sup> )
All other hand workers, n.e.c. ....	4,840	.22	n.a.	n.a.
Motor vehicle operators .....	97,230	4.51	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	19,950	.92	3	5
Truck drivers, light, include delivery and route workers .....	44,010	2.04	3	13
Driver/sales workers .....	33,270	1.54	4	6
Service station attendants .....	5,640	.26	7	1
All other transportation and motor vehicle operators .....	600	.03	27	( <sup>3</sup> )
Material moving equipment operators .....	1,790	.08	n.a.	n.a.
Industrial truck and tractor operators .....	1,300	.06	15	( <sup>3</sup> )
All other material moving equipment operators .....	490	.02	29	( <sup>3</sup> )
Helpers - mechanics and repairers .....	370	.02	25	( <sup>3</sup> )
Freight, stock, and material movers, hand .....	21,570	1.00	6	4
Hand packers and packagers .....	5,500	.25	11	( <sup>3</sup> )
All other helpers, laborers, and material movers, hand .....	15,080	.70	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	1,020	.05	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# Educational Services

This industry group includes establishments furnishing formal academic or technical courses, correspondence schools, commercial and trade schools, and libraries. Included are elementary and secondary schools, colleges, universities, and professional schools. Establishments primarily engaged in providing job training are not included. This is the first year that the Bureau of Labor Statistics has compiled national occupational employment data from educational establishments.

These establishments employed 8.6 million workers, accounting for 20 percent of total surveyed employment (table 24). Professional, paraprofessional, and technical workers numbered 5,243,390, or 61 percent of employment in educational services. Clerical and administrative support workers accounted for 15 percent. Service workers accounted for 13 percent. Production and related workers and managerial and administrative workers accounted for 6 and 5 percent, respectively. Agriculture, forestry, fishing, and related workers made up less than 1 percent.

Elementary and secondary schools, colleges, universities, and professional schools employed nearly 8 million workers, representing 98 percent of total employment in the industry. Education administrators held over 58 percent of all managerial and administrative occupations, and over 70 percent of them were employed in elementary and secondary schools.

Teachers and instructors made up 48 percent of employ-

ment in educational services and 79 percent of total employment in the professional, paraprofessional, and technical occupations. Teachers represented 53 percent of total employment in elementary and secondary schools and 39 percent in colleges and universities. Elementary and secondary schools employed over 2.4 million elementary and secondary education teachers, representing almost all elementary and secondary education teachers. Colleges, universities, and professional schools employed 913,300 college-level teachers and instructors, or almost all postsecondary school teachers and instructors.

The six most populous teaching occupations, and their respective percentages of all teaching occupations, are listed in the following tabulation:

	<i>Employment, 1985</i>	<i>Percent of industry employment, 1985</i>
Teachers, elementary and secondary . . . . .	2,366,430	57.0
Teachers, special education . . . . .	263,840	6.4
Teachers, vocational education . . . . .	149,800	3.6
Graduate assistants . . . . .	134,520	3.2
Teachers, preschool and kindergarten . . . . .	129,040	3.1
Teachers, social science (postsecondary) . . . . .	86,030	2.1

**Table 24. Educational services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985**

(SIC 82)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	8,569,280	100.00	--	--
Managerial and administrative occupations .....	431,120	5.03	n.a.	n.a.
Financial managers .....	13,400	.16	3	40
Personnel, training, and labor relations managers .....	5,890	.07	3	21
Purchasing managers .....	3,030	.04	3	14
Marketing, advertising, and public relations managers .....	8,650	.10	3	20
Administrative services managers .....	11,880	.14	9	15
Engineering, mathematical, and natural sciences managers .....	5,750	.07	17	6
Education administrators .....	252,320	2.94	1	94
Construction managers .....	5,250	.06	6	14
Communications, transportation, and utilities operations managers .....	5,680	.07	4	17
Food service and lodging managers .....	13,620	.16	3	31
General managers and top executives .....	47,970	.56	3	69
All other managers and administrators .....	57,680	.67	5	23
Professional, paraprofessional, and technical occupations .....	5,243,390	61.19	n.a.	n.a.
Management support workers .....	82,470	.96	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	27,770	.32	n.a.	n.a.
Accountants and auditors .....	16,820	.20	4	26
Budget analysts .....	4,830	.06	9	9
All other financial specialists .....	6,120	.07	6	8
Purchasing agents, except wholesale and retail trade, and farm products .....	4,780	.06	4	11
Personnel, training, and labor relations specialists .....	8,520	.10	4	13
Construction and building inspectors .....	1,160	.01	7	3
All other management support workers .....	40,240	.47	7	12
Engineers .....	8,190	.10	17	3
Engineering and related technicians and technologists .....	12,220	.14	12	4
Physical scientists .....	11,110	.13	15	2
Life scientists .....	21,150	.25	15	2
Physical and life science technicians and technologists .....	46,020	.54	3	4
Computer scientists and related workers .....	33,530	.39	n.a.	n.a.
Systems analysts, electronic data processing .....	13,620	.16	7	13
Computer programmers .....	14,990	.17	5	18
Computer programmer aides .....	4,920	.06	5	9
Mathematical scientists .....	2,000	.02	19	2
Social scientists, including urban and regional planners .....	30,450	.36	n.a.	n.a.
Psychologists .....	22,530	.26	4	27
All other social scientists .....	7,920	.09	n.a.	n.a.
Social workers, except medical and psychiatric .....	15,880	.19	7	15
Teachers and instructors .....	4,148,650	48.41	n.a.	n.a.
Nursing instructors .....	33,840	.39	n.a.	n.a.
Graduate assistants, teaching .....	134,520	1.57	n.a.	n.a.
Physical sciences teachers .....	128,230	1.50	n.a.	n.a.
Life sciences teachers .....	84,540	.99	n.a.	n.a.
Chemistry teachers .....	17,270	.20	n.a.	n.a.
Physics teachers .....	12,760	.15	n.a.	n.a.
All other physical science teachers .....	13,660	.16	n.a.	n.a.
Social sciences teachers .....	86,030	1.00	n.a.	n.a.
Health specialties teachers .....	30,880	.36	n.a.	n.a.
English and foreign language teachers .....	72,120	.84	n.a.	n.a.
Art, drama and music teachers .....	54,830	.64	n.a.	n.a.
Engineering teachers .....	37,490	.44	n.a.	n.a.
Mathematical sciences teachers .....	36,150	.42	n.a.	n.a.
Computer science teachers .....	18,610	.22	n.a.	n.a.
All other postsecondary teachers .....	289,680	3.38	( <sup>3</sup> )	18

See footnotes at end of table.

**Table 24. Educational services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 82)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Teachers, preschool and kindergarten .....	129,040	1.51	1	55
Teachers, elementary and secondary school .....	2,366,430	27.62	n.a.	n.a.
Teachers, special education .....	263,840	3.08	1	52
Teachers and instructors, vocational education and training .....	149,800	1.75	2	34
Instructors, nonvocational education .....	60,540	.71	4	13
Instructors and coaches, sports and physical training .....	51,280	.60	3	23
Farm and home management advisors .....	11,320	.13	n.a.	n.a.
All other teachers and instructors .....	194,020	2.26	n.a.	n.a.
Librarians, professional .....	85,260	.99	2	73
Technical assistants, library .....	32,530	.38	3	29
Audio-visual specialists .....	9,140	.11	3	22
Vocational and educational counselors .....	80,600	.94	3	54
Instructional coordinators .....	26,820	.31	4	27
Teacher aides, paraprofessional .....	325,070	3.79	1	48
Health and related workers .....	127,920	1.49	33	97
Speech pathologists and audiologists .....	26,830	.31	3	29
Registered nurses .....	44,810	.52	7	41
Licensed practical nurses .....	6,080	.07	8	6
Dietitians and nutritionists .....	2,890	.03	8	6
All other health professionals, paraprofessional and technicians .....	47,310	.55	7	14
Writers and editors .....	6,190	.07	7	8
Athletes, coaches, umpires, and related workers .....	19,150	.22	4	10
All other professional, paraprofessional, and technical workers .....	119,060	1.39	n.a.	n.a.
Sales and related occupations .....	23,970	.28	n.a.	n.a.
Sales representatives, except scientific and related products or services and retail .....	3,040	.04	8	2
Salespersons, retail .....	3,840	.04	19	4
Cashiers .....	12,940	.15	4	13
All other sales and related workers .....	4,150	.05	7	4
Clerical and administrative support occupations .....	1,249,180	14.58	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	39,920	.47	5	25
Library assistants and bookmobile drivers .....	48,080	.56	4	25
Teacher aides and educational assistants, clerical .....	203,690	2.38	1	30
Secretaries .....	341,440	3.98	( <sup>3</sup> )	90
Stenographers .....	22,300	.26	6	8
Receptionists and information clerks .....	22,920	.27	7	27
Typists .....	70,950	.83	4	18
Typists, word processing equipment .....	14,110	.16	5	13
Personnel clerks, except payroll and timekeeping .....	8,200	.10	5	16
Correspondence clerks .....	1,790	.02	10	2
File clerks .....	8,100	.09	6	6
Bookkeeping, accounting, and auditing clerks .....	57,660	.67	3	62
Payroll and timekeeping clerks .....	10,850	.13	2	34
Billing, cost and rate clerks .....	6,000	.07	7	11
General office clerks .....	203,510	2.37	( <sup>3</sup> )	38
Electronic data processing and other office machine operators .....	34,110	.40	n.a.	n.a.
Billing, posting, and calculating machine operators .....	1,900	.02	8	4
Duplicating machine operators .....	7,370	.09	3	16
Computer operators, except peripheral equipment .....	9,920	.12	4	16
Peripheral EDP equipment operators .....	1,710	.02	7	3
Data entry keyers, except composing .....	10,570	.12	4	13
All other office machine operators .....	2,640	.03	11	3
Switchboard operators .....	9,190	.11	2	24
Mail clerks, except mail machine operators and postal service .....	7,000	.08	4	15
Material recording, scheduling, dispatching, and distributing workers .....	21,360	.25	n.a.	n.a.

See footnotes at end of table.

**Table 24. Educational services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 82)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Stock clerks, stockroom, warehouse or storage yard .....	13,880	0.16	5	16
Traffic, shipping, and receiving clerks .....	3,520	.04	7	7
All other material recording, scheduling, and distributing workers .....	3,960	.05	9	4
All other clerical and administrative support workers .....	118,000	1.38	1	15
<b>Service occupations .....</b>	<b>1,073,540</b>	<b>12.53</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, service .....	38,490	.45	3	29
Crossing guards .....	7,290	.09	5	6
Guards and watch guards .....	27,630	.32	3	17
All other protective service workers .....	55,090	.64	4	11
Food and beverage preparation and service workers .....	423,100	4.94	n.a.	n.a.
Dining room and cafeteria attendants, and bartender helpers .....	30,380	.35	7	8
Counter attendants, lunchroom, coffee shop, or cafeteria .....	20,610	.24	5	8
Cooks, institution or cafeteria .....	196,010	2.29	1	53
Food preparation workers .....	116,920	1.36	1	28
All other food service workers .....	59,180	.69	3	12
Nursing aides, orderlies, and attendants .....	10,790	.13	12	4
Cleaning and building service workers, except private households .....	464,320	5.42	n.a.	n.a.
Maids and housekeeping cleaners .....	21,100	.25	6	8
Janitors and cleaners, except maids and housekeeping cleaners .....	427,820	4.99	( <sup>3</sup> )	81
All other cleaning and building service workers, except private households .....	15,400	.18	7	6
Child care workers .....	13,140	.15	16	4
All other service workers .....	33,690	.39	9	6
<b>Agriculture, forestry, fishing, and related occupations .....</b>	<b>48,560</b>	<b>.57</b>	<b>n.a.</b>	<b>n.a.</b>
Gardeners and groundskeepers, except farm .....	37,220	.43	5	25
All other agriculture, forestry, fishing, and related workers .....	11,340	.13	15	3
<b>Production, construction, operating, maintenance, and material handling occupations .....</b>	<b>499,520</b>	<b>5.83</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	17,940	.21	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	7,160	.08	4	15
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	3,990	.05	11	5
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	6,790	.08	6	10
Mechanics, installers, and repairers .....	98,060	1.14	n.a.	n.a.
Maintenance repairers, general utility .....	68,490	.80	3	48
Automotive mechanics .....	6,640	.08	6	11
Bus and truck mechanics and diesel engine specialists .....	12,140	.14	3	21
All other mechanics, installers, and repairers .....	10,790	.13	7	7
Construction trades workers, except material moving .....	43,590	.51	n.a.	n.a.
Carpenters .....	12,670	.15	3	19
Electricians .....	11,580	.14	3	18
Painters and paperhangers, construction and maintenance .....	10,490	.12	3	15
Plumbers, pipefitters, and steamfitters .....	8,850	.10	3	15

See footnotes at end of table.

**Table 24. Educational services: Employment, relative error, and percent of establishments reporting selected occupations, April 1985—Continued**

(SIC 82)

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other construction and extractive workers, except helpers .....	12,530	0.15	10	7
Precision production workers .....	4,910	.06	10	3
Machine setters, set-up operators, operators and tenders .....	3,580	.04	8	4
Hand workers, including assemblers and fabricators .....	2,050	.02	16	3
Plant and system workers .....	9,050	.11	6	5
Motor vehicle operators .....	254,020	2.96	n.a.	n.a.
Truck drivers, light, include delivery and route workers .....	6,880	.08	5	10
Bus drivers, school .....	247,140	2.88	1	44
All other transportation and motor vehicle operators .....	9,300	.11	6	8
Material moving equipment operators .....	2,370	.03	n.a.	n.a.
Industrial truck and tractor operators .....	1,130	.01	8	2
All other material moving equipment operators .....	1,240	.01	19	1
Helpers - laborers and material movers, hand .....	42,120	.49	5	9

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# State and Local Government

State government employment includes establishments engaged in providing police and fire protection, public safety, human or social services, recreational facilities, public transportation, public housing, judiciary services, environmental quality programs such as sanitation, waste management, and water control, library facilities, and medical and health services, except hospitals. Educational establishments are also excluded.

In 1985, there were 1 million employees in State government, representing an increase of 5 percent from 1982.

Professional, paraprofessional, and technical workers accounted for 36 percent of total employment in State government (table 25). Clerical and administrative support workers ranked as the second largest occupational group, accounting for 25 percent. Service occupations were the third group, with 19 percent; within this group, correction officers and jailers, the occupation with the highest employment, accounted for 6 percent of total employment in State government.

The remaining employment was distributed among the occupational groups as follows: Production and related workers, 11 percent; managerial and administrative occupations, 6 percent; sales and related occupations, 1 percent; and agriculture, forestry, fishing, and related occupations, 1 percent.

Local government includes government establishments engaged in providing the same services as those listed under State government.

Employment in local government totaled 3.7 million, a 4-percent increase from 1982. Service workers accounted for approximately 30 percent of employment in local government in 1985 (table 26). The second largest occupational group was production and related workers, 22 percent.

The five most populous occupations in State and local government are shown in the tabulations below:

	<i>Percent of employment, 1985</i>
State government:	
Correction officers and jailers .....	5.6
General office clerks .....	4.3
Social workers .....	3.2
Typists .....	3.9
Secretaries .....	2.4
Local government:	
Police patrol officers .....	8.0
Firefighters .....	5.5
Highway maintenance .....	3.3
Secretaries .....	3.3
General office clerks .....	3.1

Correction officers and jailers, a service occupation, increased dramatically in both State and local government between 1982 and 1985: the number of correction officers and jailers employed in State government rose by 34 percent (from 77,750 to 104,010); those employed in local government rose by 40 percent (from 45,720 to 64,100).

**Table 25. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	1,843,480	100.00	--	--
Managerial and administrative occupations .....	106,870	5.80	n.a.	n.a.
Financial managers .....	3,570	.19	5	15
Personnel, training, and labor relations managers .....	2,530	.14	6	11
Purchasing managers .....	610	.03	6	5
Marketing, advertising, and public relations managers .....	1,510	.08	9	4
Administrative services managers .....	4,960	.27	9	12
Education administrators .....	2,950	.16	8	5
Medicine and health services managers .....	3,560	.19	6	6
Construction managers .....	1,000	.05	7	3
Communications, transportation, and utilities operations managers .....	1,560	.08	5	5
Chief executives, legislators, and general administrators, public administration .....	11,750	.64	6	13
General managers and top executives .....	21,460	1.16	3	42
All other managers and administrators .....	51,410	2.79	( <sup>3</sup> )	43
Professional, paraprofessional, and technical occupations .....	668,720	36.27	n.a.	n.a.
Management support workers .....	192,870	10.46	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	47,130	2.56	n.a.	n.a.
Accountants and auditors .....	34,840	1.89	( <sup>3</sup> )	28
Budget analysts .....	4,490	.24	9	7
All other financial specialists .....	7,800	.42	11	6
Purchasing agents, except wholesale and retail trade, and farm products .....	2,620	.14	5	8
Claims takers, unemployment benefits .....	14,910	.81	5	7
Employment interviewers, private or public employment service .....	21,930	1.19	( <sup>3</sup> )	9
Personnel, training, and labor relations specialists .....	11,630	.63	6	16
Management analysts .....	10,950	.59	4	9
Construction and building inspectors .....	4,760	.26	7	4
Compliance officers and enforcement inspectors, except construction .....	37,400	2.03	( <sup>3</sup> )	23
Tax examiners, collectors, and revenue agents .....	14,570	.79	3	5
Assessors .....	2,090	.11	8	2
All other management support workers .....	24,880	1.35	( <sup>3</sup> )	18
Engineers .....	38,690	2.10	n.a.	n.a.
Civil engineers, including traffic .....	30,850	1.67	( <sup>3</sup> )	9
Electrical and electronic engineers .....	1,510	.08	7	3
All other engineers .....	6,330	.34	6	6
Surveying and mapping scientists .....	850	.05	8	3
Engineering and related technicians and technologists .....	40,990	2.22	n.a.	n.a.
Civil engineering technicians and technologists .....	20,620	1.12	( <sup>3</sup> )	7
Electrical and electronic engineering technicians and technologists .....	1,950	.11	9	3
Drafters .....	3,930	.21	7	4
Surveying and mapping technicians and technologists .....	2,840	.15	6	2
All other engineering and related technicians and technologists .....	11,650	.63	( <sup>3</sup> )	4
Physical scientists .....	6,730	.37	n.a.	n.a.
Chemists, except biochemists .....	2,630	.14	5	4
All other physical scientists .....	4,100	.22	6	5
Life scientists .....	15,380	.83	n.a.	n.a.
Foresters and conservation scientists .....	4,440	.24	6	5
Agricultural and food scientists .....	1,190	.06	7	3
Biological scientists .....	6,510	.35	5	7
All other life scientists .....	3,240	.18	9	4
Physical and life science technicians and technologists .....	5,370	.29	5	8

See footnotes at end of table.



**Table 25. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Computer scientists and related workers .....	21,900	1.19	n.a.	n.a.
Systems analysts, electronic data processing .....	9,760	.53	5	11
Computer programmers .....	10,740	.58	6	10
Computer programmer aides .....	1,400	.08	14	4
Mathematical scientists .....	2,520	.14	5	5
Social scientists, including urban and regional planners .....	15,200	.82	n.a.	n.a.
Economists, including market research analysts .....	2,690	.15	7	4
Urban and regional planners .....	3,170	.17	5	4
Psychologists .....	5,160	.28	6	7
All other social scientists .....	4,180	.23	12	3
Social workers, medical and psychiatric .....	15,770	.86	2	5
Social workers, except medical and psychiatric .....	59,760	3.24	( <sup>3</sup> )	17
Social service technicians .....	13,580	.74	3	6
Recreation workers .....	3,100	.17	8	5
Judges and magistrates .....	11,010	.60	6	4
Adjudicators, hearings officers, and judicial reviewers .....	7,340	.40	6	7
Lawyers .....	18,060	.98	3	11
Law clerks .....	2,870	.16	7	4
Paralegal personnel .....	1,640	.09	6	3
All other legal assistants and technicians, except clerical .....	5,850	.32	11	3
Teachers and instructors, vocational education and training .....	12,740	.69	6	6
Farm and home management advisors .....	2,420	.13	9	4
Librarians, professional .....	2,160	.12	5	6
Technical assistants, library .....	710	.04	5	3
Vocational and educational counselors .....	11,170	.61	6	8
Instructional coordinators .....	6,160	.33	6	5
Health workers .....	66,790	3.62	40	43
Physicians and surgeons .....	4,630	.25	7	6
Therapists .....	5,620	.30	8	5
Registered nurses .....	24,600	1.33	( <sup>3</sup> )	11
Licensed practical nurses .....	10,620	.58	6	6
Emergency medical technicians .....	360	.02	10	1
Dietitians and nutritionists .....	1,980	.11	6	5
All other health professionals, paraprofessional and technicians .....	18,980	1.03	5	9
Public relations specialists and publicity writers .....	3,190	.17	5	10
Traffic technicians .....	1,500	.08	6	2
Radio operators .....	1,460	.08	6	2
All other professional, paraprofessional, and technical workers .....	80,940	4.39	n.a.	n.a.
Sales and related occupations .....	23,060	1.25	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	2,910	.16	7	8
Appraisers, real estate .....	1,070	.06	7	2
Salespersons, retail .....	6,080	.33	9	3
Cashiers .....	10,700	.58	7	8
All other sales and related workers .....	2,300	.12	8	4
Clerical and administrative support occupations .....	469,470	25.47	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	27,680	1.50	( <sup>3</sup> )	29
Welfare eligibility workers and interviewers .....	32,290	1.75	( <sup>3</sup> )	9
Court clerks .....	12,050	.65	1	4
License clerks .....	8,450	.46	7	4
Library assistants and bookmobile drivers .....	750	.04	6	2
Teachers aides and educational assistants, clerical .....	2,100	.11	8	2
Secretaries .....	60,500	3.28	( <sup>3</sup> )	54
Stenographers .....	32,700	1.77	( <sup>3</sup> )	15
Receptionists and information clerks .....	2,650	.14	5	12
Typists .....	71,620	3.89	( <sup>3</sup> )	37

See footnotes at end of table.

**Table 25. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Typists, word processing equipment .....	9,190	0.50	5	15
Personnel clerks, except payroll and timekeeping .....	3,590	.19	5	12
File clerks .....	11,250	.61	6	11
Statistical clerks .....	2,720	.15	7	5
Bookkeeping, accounting, and auditing clerks .....	28,640	1.55	( <sup>3</sup> )	26
Payroll and timekeeping clerks .....	1,840	.10	7	6
Billing, cost and rate clerks .....	1,320	.07	11	3
General office clerks .....	78,630	4.27	( <sup>3</sup> )	36
Electronic data processing and other office machine operators .....	33,040	1.79	n.a.	n.a.
Computer operators, except peripheral equipment .....	5,150	.28	5	7
Peripheral EDP equipment operators .....	1,500	.08	8	3
Data entry keyers, except composing .....	20,270	1.10	( <sup>3</sup> )	14
All other office machine operators .....	6,120	.33	n.a.	n.a.
Switchboard operators .....	3,080	.17	6	9
Messengers .....	910	.05	6	4
Material recording, scheduling, dispatching, and distributing workers .....	12,840	.70	n.a.	n.a.
Dispatchers, police, fire, and ambulance .....	2,640	.14	5	4
Dispatchers, except police, fire, and ambulance .....	770	.04	6	2
Stock clerks, stockroom, warehouse or storage yard .....	7,970	.43	5	15
Traffic, shipping, and receiving clerks .....	400	.02	6	2
All other material recording, scheduling, and distributing workers .....	1,060	.06	n.a.	n.a.
All other clerical and administrative support workers .....	31,630	1.72	n.a.	n.a.
<b>Service occupations .....</b>	<b>350,120</b>	<b>18.99</b>	<b>n.a.</b>	<b>n.a.</b>
First-line supervisors and manager/supervisors, service .....	23,450	1.27	n.a.	n.a.
Fire fighting and prevention supervisors .....	950	.05	5	2
Police and detective supervisors .....	8,790	.48	5	7
All other service supervisors and manager/supervisors .....	13,710	.74	5	11
Protective service workers .....	178,990	9.71	n.a.	n.a.
Fire inspectors .....	680	.04	6	2
Forest fire inspectors and prevention specialists .....	1,740	.09	10	1
Fire fighters .....	2,860	.16	6	2
Police detectives .....	5,670	.31	7	4
Police patrol officers .....	38,840	2.11	( <sup>3</sup> )	8
Correction officers and jailers .....	104,010	5.64	( <sup>3</sup> )	5
Bailiffs .....	4,120	.22	17	1
Sheriffs and deputy sheriffs .....	340	.02	14	( <sup>3</sup> )
Railroad and transit police and special agents .....	320	.02	16	( <sup>3</sup> )
Fish and game wardens .....	5,810	.32	6	6
Guards and watch guards .....	7,040	.38	6	6
All other protective service workers .....	7,560	.41	n.a.	n.a.
Food and beverage preparation and service workers .....	17,170	.93	n.a.	n.a.
Cooks, institution or cafeteria .....	5,140	.28	4	7
Food preparation workers .....	7,370	.40	5	5
All other food service workers .....	4,660	.25	14	2
Health service and related workers .....	70,220	3.81	n.a.	n.a.
Medical assistants .....	1,770	.10	13	1
Nursing aides, orderlies, and attendants .....	32,380	1.76	( <sup>3</sup> )	3
Home health aides .....	1,670	.09	9	2
All other health service workers .....	34,400	1.87	n.a.	n.a.
Cleaning and building service workers, except private households .....	22,320	1.21	( <sup>3</sup> )	14
Amusement and recreation attendants .....	3,850	.21	17	1
Social welfare service aides .....	9,290	.50	6	2
Child care workers .....	12,090	.66	5	2
All other service workers .....	12,740	.69	n.a.	n.a.

See footnotes at end of table.

**Table 25. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Agriculture, forestry, fishing, and related occupations .....	21,710	1.18	n.a.	n.a.
Forest and conservation workers .....	7,580	.41	7	7
Gardeners and groundskeepers, except farm .....	6,590	.36	5	10
Animal caretakers, except farm .....	630	.03	9	1
All other agriculture, forestry, fishing, and related workers .....	6,910	.37	6	8
Production, construction, operating, maintenance, and material handling occupations .....	203,530	11.04	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	20,250	1.10	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	4,180	.23	8	8
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	6,760	.37	7	7
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	1,640	.09	8	3
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	7,670	.42	6	10
Transportation inspectors .....	1,480	.08	7	2
All other inspectors, testers and related occupations .....	3,570	.19	5	4
Mechanics, installers, and repairers .....	29,820	1.62	n.a.	n.a.
Machinery maintenance mechanics .....	3,000	.16	n.a.	n.a.
Machinery maintenance mechanics, water or power generation plant .....	1,390	.08	11	2
All other machinery maintenance mechanics .....	1,610	.09	10	2
Maintenance repairers, general utility .....	9,150	.50	5	16
Automotive mechanics .....	7,040	.38	6	10
Bus and truck mechanics and diesel engine specialists .....	4,150	.23	10	3
Mobile heavy equipment mechanics, except engines .....	1,510	.08	7	2
Heating, air-conditioning, and refrigeration mechanics and installers .....	940	.05	5	3
Precision instrument repairers .....	310	.02	11	1
All other mechanics, installers, and repairers .....	3,720	.20	n.a.	n.a.
Construction trades workers, except material moving .....	53,440	2.90	n.a.	n.a.
Carpenters .....	3,230	.18	5	9
Electricians .....	4,130	.22	5	9
Painters and paperhangers, construction and maintenance .....	2,170	.12	5	6
Plumbers, pipefitters, and steamfitters .....	1,670	.09	6	6
Paving, surfacing, and tamping equipment operators .....	3,740	.20	9	2
Highway maintenance workers .....	38,500	2.09	( <sup>3</sup> )	9
All other construction and extractive workers, except helpers .....	7,810	.42	n.a.	n.a.
Precision production workers .....	1,190	.06	7	3
Machine setters, set-up operators, operators and tenders .....	5,740	.31	13	3
Hand workers, including assemblers and fabricators .....	1,760	.10	7	3
Plant and system workers .....	5,660	.31	n.a.	n.a.
Water and liquid waste treatment plant and system operators .....	800	.04	5	3
Power generating plant operators, except auxiliary equipment operators .....	570	.03	11	1
Stationary engineers .....	3,610	.20	9	4

See footnotes at end of table.

**Table 25. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
All other plant and system operators .....	680	0.04	n.a.	n.a.
Motor vehicle operators .....	11,020	.60	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	1,920	.10	10	3
Truck drivers, light, include delivery and route workers .....	2,720	.15	10	4
Bus drivers .....	6,380	.35	14	1
Bridge, lock, and lighthouse tenders .....	1,430	.08	12	1
Service station attendants .....	600	.03	7	2
All other transportation and motor vehicle operators .....	7,030	.38	8	4
Material moving equipment operators .....	17,130	.93	n.a.	n.a.
Industrial truck and tractor operators .....	2,970	.16	13	1
Operating engineers .....	14,160	.77	4	5
Helpers - laborers and material movers, hand .....	31,900	1.73	n.a.	n.a.
All other production, construction, operating, maintenance, and material handling workers .....	3,700	.20	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

**Table 26. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Total .....	3,760,850	100.00	--	--
Managerial and administrative occupations .....	196,090	5.21	n.a.	n.a.
Financial managers .....	11,750	.31	4	37
Personnel, training, and labor relations managers .....	4,860	.13	7	19
Purchasing managers .....	2,140	.06	9	13
Marketing, advertising, and public relations managers .....	1,050	.03	8	5
Administrative services managers .....	26,710	.71	7	26
Education administrators .....	1,810	.05	19	4
Medicine and health services managers .....	6,290	.17	21	10
Construction managers .....	6,040	.16	9	14
Communications, transportation, and utilities operations managers .....	11,360	.30	11	18
Chief executives, legislators, and general administrators, public administration .....	52,700	1.40	6	44
General managers and top executives .....	37,620	1.00	8	34
All other managers and administrators .....	33,760	.90	4	21
Professional, paraprofessional, and technical occupations .....	706,910	18.80	n.a.	n.a.
Management support workers .....	159,730	4.25	n.a.	n.a.
Accountants, auditors, and other financial specialists .....	32,540	.87	n.a.	n.a.
Accountants and auditors .....	25,570	.68	19	30
Budget analysts .....	3,560	.09	18	10
All other financial specialists .....	3,410	.09	14	7
Purchasing agents, except wholesale and retail trade, and farm products .....	4,170	.11	15	14
Employment interviewers, private or public employment service .....	1,500	.04	19	4
Personnel, training, and labor relations specialists .....	7,060	.19	17	12
Management analysts .....	6,360	.17	33	6
Construction and building inspectors .....	28,790	.77	9	33
Compliance officers and enforcement inspectors, except construction .....	24,300	.65	26	22
Tax examiners, collectors, and revenue agents .....	14,960	.40	9	20
Assessors .....	21,220	.56	9	25
All other management support workers .....	18,830	.50	n.a.	n.a.
Engineers .....	35,750	.95	n.a.	n.a.
Civil engineers, including traffic .....	26,390	.70	13	26
Electrical and electronic engineers .....	4,220	.11	36	4
All other engineers .....	5,140	.14	36	5
Surveying and mapping scientists .....	3,190	.08	13	9
Engineering and related technicians and technologists .....	34,210	.91	n.a.	n.a.
Civil engineering technicians and technologists .....	11,480	.31	15	13
Electrical and electronic engineering technicians and technologists .....	3,320	.09	20	4
Drafters .....	7,150	.19	10	15
Surveying and mapping technicians and technologists .....	5,280	.14	13	10
All other engineering and related technicians and technologists .....	6,980	.19	18	6
Physical scientists .....	3,810	.10	n.a.	n.a.
Chemists, except biochemists .....	3,130	.08	22	6
All other physical scientists .....	680	.02	30	1
Life scientists .....	4,210	.11	n.a.	n.a.
Foresters and conservation scientists .....	1,310	.03	11	5
Agricultural and food scientists .....	860	.02	28	2
Biological scientists .....	1,580	.04	27	3
All other life scientists .....	460	.01	37	1
Physical and life science technicians and technologists .....	4,190	.11	30	5
Computer scientists and related workers .....	17,320	.46	n.a.	n.a.

See footnotes at end of table.

**Table 26. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Systems analysts, electronic				
data processing .....	6,770	0.18	18	12
Computer programmers .....	8,540	.23	33	14
Computer programmer aides .....	2,010	.05	15	8
Mathematical scientists .....	420	.01	49	1
Social scientists, including urban and regional planners .....	17,400	.46	n.a.	n.a.
Economists, including market research analysts .....	700	.02	33	2
Urban and regional planners .....	13,250	.35	11	18
Psychologists .....	2,510	.07	20	3
All other social scientists .....	940	.02	29	2
Social workers, medical and psychiatric .....	14,480	.39	13	8
Social workers, except medical and psychiatric .....	52,610	1.40	2	14
Social service technicians .....	14,800	.39	30	9
Recreation workers .....	83,820	2.23	3	27
Judges and magistrates .....	13,840	.37	8	22
Adjudicators, hearings officers, and judicial reviewers .....	2,200	.06	47	3
Lawyers .....	33,890	.90	7	35
Law clerks .....	3,240	.09	20	6
Paralegal personnel .....	2,860	.08	34	5
All other legal assistants and technicians, except clerical .....	4,360	.12	28	5
Teachers and instructors, vocational education and training .....	7,640	.20	24	3
Farm and home management advisors .....	5,360	.14	10	6
Librarians, professional .....	27,870	.74	8	24
Technical assistants, library .....	14,260	.38	10	12
Vocational and educational counselors .....	2,590	.07	37	2
Instructional coordinators .....	2,220	.06	26	3
Health workers .....	92,700	2.46	n.a.	n.a.
Therapists .....	2,960	.08	27	4
Registered nurses .....	32,160	.86	15	16
Licensed practical nurses .....	12,420	.33	12	8
Emergency medical technicians .....	23,790	.63	11	8
Dietitians and nutritionists .....	3,280	.09	15	8
All other health professionals, paraprofessional and technicians .....	18,090	.48	n.a.	n.a.
Public relations specialists and publicity writers .....	2,530	.07	16	7
Traffic technicians .....	2,010	.05	18	5
Radio operators .....	3,160	.08	17	4
All other professional, paraprofessional, and technical workers .....	40,240	1.07	n.a.	n.a.
Sales and related occupations .....	28,960	.77	n.a.	n.a.
First-line supervisors and manager/supervisors, sales and related workers .....	1,460	.04	28	2
Appraisers, real estate .....	2,420	.06	25	4
Cashiers .....	17,020	.45	19	13
All other sales and related workers .....	8,060	.21	n.a.	n.a.
Clerical and administrative support occupations .....	786,030	20.90	n.a.	n.a.
First-line supervisors and manager/supervisors, clerical and administrative support workers .....	43,220	1.15	9	28
Welfare eligibility workers and interviewers .....	48,370	1.29	2	11
Court clerks .....	27,410	.73	14	24
Municipal clerks .....	17,750	.47	6	34
License clerks .....	10,340	.27	17	15
Library assistants and bookmobile drivers .....	45,400	1.21	8	18
Teachers aides and educational assistants, clerical .....	4,320	.11	36	2
Secretaries .....	90,030	2.39	2	59
Stenographers .....	16,380	.44	17	13
Receptionists and information clerks .....	12,990	.35	18	17
Typists .....	77,420	2.06	1	25
Typists, word processing equipment .....	9,430	.25	16	11
Personnel clerks, except payroll and timekeeping .....	4,940	.13	15	13

See footnotes at end of table.

**Table 26. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
File clerks .....	10,900	0.29	15	10
Statistical clerks .....	1,830	.05	19	4
Customer service representatives, utilities .....	7,310	.19	21	8
Bookkeeping, accounting, and auditing clerks .....	55,760	1.48	5	55
Payroll and timekeeping clerks .....	7,410	.20	12	23
Billing, cost and rate clerks .....	8,340	.22	28	14
General office clerks .....	118,080	3.14	2	43
Electronic data processing and other office machine operators .....	25,260	.67	n.a.	n.a.
Billing, posting, and calculating machine operators .....	2,900	.08	19	5
Computer operators, except peripheral equipment .....	7,430	.20	14	16
Peripheral EDP equipment operators .....	2,010	.05	43	3
Data entry keyers, except composing .....	10,350	.28	14	13
All other office machine operators .....	2,570	.07	22	4
Switchboard operators .....	6,030	.16	10	17
Mail clerks, except mail machine operators and postal service .....	1,640	.04	5	8
Messengers .....	1,810	.05	16	5
Material recording, scheduling, dispatching, and distributing workers .....	92,970	2.47	n.a.	n.a.
Dispatchers, police, fire, and ambulance .....	53,830	1.43	6	34
Dispatchers, except police, fire, and ambulance .....	6,710	.18	42	7
Meter readers, utilities .....	17,760	.47	6	22
Stock clerks, stockroom, warehouse or storage yard .....	11,760	.31	18	15
Traffic, shipping, and receiving clerks .....	1,000	.03	34	2
All other material recording, scheduling, and distributing workers .....	1,910	.05	30	3
All other clerical and administrative support workers .....	40,690	1.08	5	11
Service occupations .....	1,132,860	30.12	n.a.	n.a.
First-line supervisors and manager/supervisors, service .....	124,650	3.31	n.a.	n.a.
Fire fighting and prevention supervisors .....	41,500	1.10	5	20
Police and detective supervisors .....	67,950	1.81	1	35
All other service supervisors and manager/supervisors .....	15,200	.40	28	11
Protective service workers .....	784,520	20.86	n.a.	n.a.
Fire inspectors .....	7,000	.19	26	13
Fire fighters .....	207,170	5.51	2	23
Police detectives .....	37,700	1.00	12	23
Police patrol officers .....	301,450	8.02	1	39
Correction officers and jailers .....	64,100	1.70	2	15
Parking enforcement officers .....	6,800	.18	15	11
Balliffs .....	5,860	.16	13	8
Sheriffs and deputy sheriffs .....	61,980	1.65	2	16
Crossing guards .....	42,840	1.14	10	16
Guards and watch guards .....	14,080	.37	32	8
All other protective service workers .....	35,540	.94	n.a.	n.a.
Food and beverage preparation and service workers .....	23,570	.63	n.a.	n.a.
Cooks, institution or cafeteria .....	10,240	.27	21	13
Food preparation workers .....	9,910	.26	17	7
All other food service workers .....	3,420	.09	22	3
Health service and related workers .....	55,490	1.48	n.a.	n.a.
Medical assistants .....	1,020	.03	36	2
Nursing aides, orderlies, and attendants .....	39,260	1.04	12	6
Home health aides .....	7,280	.19	17	5
Psychiatric aides .....	1,560	.04	37	1
Ambulance drivers and attendants, except emergency medical technicians .....	2,610	.07	27	2
All other health service workers .....	3,760	.10	25	3
Cleaning and building service workers, except private households .....	79,320	2.11	2	48
Amusement and recreation attendants .....	33,110	.88	14	10

See footnotes at end of table.

**Table 26. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Social welfare service aides .....	6,110	0.16	33	4
Child care workers .....	4,350	.12	30	2
All other service workers .....	21,740	.58	n.a.	n.a.
Agriculture, forestry, fishing, and related occupations .....	70,890	1.88	n.a.	n.a.
Forest and conservation workers .....	3,340	.09	32	4
Gardeners and groundskeepers, except farm .....	60,820	1.62	8	30
Animal caretakers, except farm .....	3,860	.10	17	6
All other agriculture, forestry, fishing, and related workers .....	2,870	.08	25	4
Production, construction, operating, maintenance, and material handling occupations .....	839,110	22.31	n.a.	n.a.
First-line supervisors, manager/supervisors - production, construction, maintenance, and related workers .....	60,010	1.60	n.a.	n.a.
First-line supervisors and manager/supervisors - mechanics, installers and repairers .....	21,070	.56	23	25
First-line supervisors and manager/supervisors - construction trades and extractive workers .....	15,830	.42	17	18
First-line supervisors and manager/superv-transp and material moving machine and vehicle workers .....	8,330	.22	37	9
All other first-line supervisors and manager/supervisors - production, construction, maintenance and related .....	14,780	.39	15	13
Transportation inspectors .....	450	.01	33	1
All other inspectors, testers and related occupations .....	2,710	.07	31	3
Mechanics, installers, and repairers .....	142,720	3.79	n.a.	n.a.
Machinery maintenance mechanics .....	21,030	.56	n.a.	n.a.
Machinery maintenance mechanics, water or power generation plant .....	17,030	.45	16	12
All other machinery maintenance mechanics .....	4,000	.11	23	4
Machinery maintenance workers .....	2,570	.07	23	3
Maintenance repairers, general utility .....	51,040	1.36	8	32
Automotive mechanics .....	19,770	.53	15	22
Bus and truck mechanics and diesel engine specialists .....	16,640	.44	26	12
Mobile heavy equipment mechanics, except engines .....	4,560	.12	16	7
Heating, air-conditioning, and refrigeration mechanics and installers .....	2,570	.07	23	4
Precision instrument repairers .....	2,230	.06	28	2
Electric meter installers and repairers .....	2,830	.08	24	4
Mechanical control and valve installers and repairers .....	4,780	.13	22	5
All other mechanics, installers, and repairers .....	14,700	.39	n.a.	n.a.
Construction trades workers, except material moving .....	192,960	5.13	n.a.	n.a.
Carpenters .....	6,730	.18	19	9
Electricians .....	17,000	.45	29	13
Painters and paperhangers, construction and maintenance .....	7,340	.20	17	8
Plumbers, pipefitters, and steamfitters .....	6,930	.18	20	7
Pipelayers .....	9,290	.25	18	5
Paving, surfacing, and tamping equipment operators .....	20,340	.54	23	10
Highway maintenance workers .....	125,330	3.33	4	47
All other construction and extractive workers, except helpers .....	17,260	.46	19	8
Precision production workers .....	2,620	.07	41	2
Machine setters, set-up operators, operators and tenders .....	4,090	.11	41	3

See footnotes at end of table.



**Table 26. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1985—Continued**

Occupation	Employment <sup>1</sup>	Percent of total employment	Relative error (in percentage) <sup>2</sup>	Percent of establishments reporting the occupation
Plant and system workers .....	82,980	2.21	n.a.	n.a.
Water and liquid waste treatment plant and system operators .....	60,610	1.61	5	32
Power generating plant operators, except auxiliary equipment operators .....	5,460	.15	34	2
Stationary engineers .....	4,630	.12	38	3
All other plant and system operators .....	12,280	.33	n.a.	n.a.
Motor vehicle operators .....	102,910	2.74	n.a.	n.a.
Truck drivers, heavy or tractor trailer .....	24,110	.64	13	12
Truck drivers, light, include delivery and route workers .....	16,940	.45	22	9
Bus drivers .....	60,450	1.61	3	7
Bus drivers, school .....	1,410	.04	34	1
Bridge, lock, and lighthouse tenders .....	1,170	.03	44	1
Service station attendants .....	4,930	.13	33	4
All other transportation and motor vehicle operators .....	14,110	.38	3	5
Material moving equipment operators .....	43,290	1.15	n.a.	n.a.
Industrial truck and tractor operators .....	10,840	.29	13	8
Operating engineers .....	25,810	.69	9	13
All other material moving equipment operators .....	6,640	.18	17	5
Refuse collectors .....	61,930	1.65	3	19
All other helpers, laborers, and material movers, hand .....	95,280	2.53	2	21
All other production, construction, operating, maintenance, and material handling workers .....	9,690	.26	n.a.	n.a.

<sup>1</sup> Estimates for specific 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 have been counted in the appropriate "All other" or summary level category.

<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.

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

# Appendix A. Survey Methods and Reliability of Estimates

## Scope of the survey

The survey covered private manufacturing establishments in Standard Industrial Classification (SIC) codes 40-59 (except 43) and State and local government activities. The reference date of the survey was the week that included April 12, May 12, or June 12, 1985, depending on the SIC of the sampled unit as shown below:

SIC code	Reference date
40.....	May 12
41.....	May 12
42.....	May 12
44.....	April 12
45.....	June 12
46.....	June 12
47.....	April 12
48.....	May 12
49.....	April 12
50.....	June 12
51.....	June 12
52.....	June 12
53.....	June 12
54.....	June 12
55.....	June 12
56.....	June 12
57.....	June 12
58.....	June 12
59.....	June 12
82.....	April 12
State government.....	May 12
Local government.....	May 12

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

## Occupational and industrial classification

The OES classification system is based primarily on the *Dictionary of Occupational Titles* (DOT), fourth edition, and is compatible with the 1980 Standard Occupational Classification (SOC) system. The DOT was used to develop the definitions of OES occupations because it is the most comprehensive system for classifying occupations. In addition, each OES occupation is directly related to a 1980 census occupation, except in those cases where a census occupation is not within the scope

of the OES survey. "Crosswalks" have been developed between the two systems so that users may integrate OES data with data from sources using the Census classification. (See appendix B.)

The industrial classification system is that described in the 1972 edition of the *Standard Industrial Classification Manual*,<sup>1</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 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.

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

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

### Survey procedures

The survey is conducted over a 3-year cycle; manufacturing industries are surveyed in 1 year and nonmanufacturing industries in the other 2 years. Data are collected from a sample of establishments primarily by mail; telephone followups and personal visits are made when an establishment response is critical to the survey. The survey is based on a probability sample, stratified by industry and size of employment, designed to represent the total or "universe" of establishments covered by the survey. Data are requested for the pay period including the 12th of the reference month, which is standard for all Federal agencies collecting employment data.

### Method of collection

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

### Sampling procedure

The sampling frame for this survey was the list of units in the specified SIC's as reported to State unemployment insurance (UI) agencies. The reference date of the sampling frame was the second quarter of 1984.

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

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

UI reporting units with 1-3 employees were not sampled in all States, but units with 4-9 employees were given larger weights to represent the employment in the

smaller size class. UI reporting units with 250 or more employees were included in the sample with certainty. Sample sizes intended to produce State estimates with target relative errors of 10, 15, and 20 percent at one standard deviation were developed for the noncertainty size classes. This was done for groups of SIC's based on averages of occupational rates and coefficients of variation (CV's) from the previous survey of those SIC's for a set of typical occupations. This SIC sample size was allocated to the size classes proportionally to size class employment. The sample was selected systematically with equal probability within each State/SIC/area/size class cell.

The States were given the option of three target relative errors in designing their samples. Some States varied the target relative error by SIC. This was done to decrease the cost by reducing the sample size. The above allocations resulted in a total initial sample size of 307,386 UI reporting units.

### Response

Of those selected, 291,464 were final eligible units (i.e., excluding establishments that were out of business or out of scope, etc.). Usable responses were obtained from 221,103 units, producing a response rate of 75.9 percent based on units and 76.1 percent based on weighted employment. Subsequent to the closeout date for national estimates, additional data were received by States and used in preparing State estimates. Response rates in most States were much higher than the response rate used to develop national estimates.

### Estimation

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

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

Sample employment was taken from the sampling frame. If the factor in a cell was greater than a predetermined maximum factor, which increased as the number of respondents in a cell increased, the cell was collapsed with other homogeneous cells within the SIC until the factor for the combined cells was not greater than the appropriate maximum factor. If the collapsing procedure terminated (i.e., no more cells were available for collapse) before satisfying the above constraint, then the

appropriate maximum factor was used. For size classes 1-6, homogeneous cells were determined to be other *size* cells within the SIC and State. For size classes 7-9, homogeneous cells were determined to be other *State* cells within the SIC and size class. The weight for each establishment was the product of the two factors.

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

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

- 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:

$$V(\hat{p}) = \sum_i \sum_j \left[ \frac{N_{ij}^2 (1 - f_{ij})}{n_{ij}} \right] [S_{pij}^2 + R_i^2 S_{eij}^2 - 2R_i K_{ij} S_{pij} S_{eij}]$$

- Where:  $V(\hat{p})$  = variance of  $\hat{p}$   
*i* = 3-digit industry within a 2-digit industry  
*j* = size class  
 $N_{ij}$  = total number of units in the *i*-th industry and *j*-th size class  
 $f_{ij}$  = sampling fraction in the *i*-th industry and *j*-th size class  
 $n_{ij}$  = number of sample units in the *i*-th industry and *j*-th size class  
 $S_{pij}$  = standard deviation of *p* within the *i*-th industry and *j*-th size class  
 $S_{eij}$  = standard deviation of *e* within the

- $K_{ij}$  = *i*-th industry and *j*-th size class 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:

$$\begin{aligned} \text{Var}(\hat{p}) &= \sum_i \sum_j T_{ij} V_{ij}^2 \\ T_{ij} &= \left[ (M_{ij} - e_{ij}) / (M_{ij}) \right] \cdot \left[ \left( \sum_k w_{ijk}^2 \right) \left( \sum_k w_{ijk} \right) \right] / \left[ \left( \sum_k w_{ijk} \right)^2 - \left( \sum_k w_{ijk}^2 \right) \right] \\ &\quad \left[ M_{ij} / \left( \sum_k w_{ijk} e_{ijk} \right) \right]^2 \\ V_{ij}^2 &= \sum_k \left( w_{ijk} \right) \cdot \left[ (P_{ijk} - R_i e_{ijk}) - (\bar{P}_{ij} - R_i \bar{e}_{ij}) \right]^2 \end{aligned}$$

Where:

- $M_i$  = benchmark total employment in the *i*-th industry  
 $M_{ij} = \left[ \left( \sum_k w_{ijk} e_{ijk} \right) / \left( \sum_j \sum_k w_{ijk} e_{ijk} \right) \right] \cdot M_i$   
 $R_i = \left( \sum_j \sum_k w_{ijk} P_{ijk} \right) / \left( \sum_j \sum_k w_{ijk} e_{ijk} \right)$   
 $e_{ij} = \sum_k e_{ijk}$

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

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

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

### Reliability of estimates

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

estimating values for missing data; and failure to represent all units in the population.

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

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

To illustrate, if all possible samples were selected, and if each of these were surveyed under essentially the same conditions and an estimate and its estimated sample error were calculated from each sample, then:

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

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

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

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

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

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

# Appendix B. The OES Classification System

This is the first survey of the industries included in this bulletin to use a new OES classification system. The new OES system (with an entirely new 5-digit coding system) organizes all occupations into four levels: Division, major group, minor group, and detail. The following sections discuss the first three levels, and also explain the new coding structure.

## Division level

There are seven divisions in the new OES system:

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

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

- The exclusion of first-line managers/supervisors from the managerial and administrative division. These workers are classified in separate and specific categories in the other divisions. For example, in the second division, first-line managers/supervisors are classified with the workers they supervise.

- The combination of professional and technical workers into a single integrated division in order to lessen the growing ambiguity between the two categories.

- The creation of a new agriculture division which allows supplementation of data from non-OES survey sources.

- The significant organizational and occupational revision of the production division.

## Major and minor group levels

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

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

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

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

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

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

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

Supervisory; sale of most services; sale of retail pro-

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

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

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

The new OES sales division is somewhat larger in scope than the previous OES category because of the addition of occupations such as sales engineers and cashiers.

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

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

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

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

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

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

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

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

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

# Appendix 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	1976	1979	1982	1985	State	1973	1976	1979	1982	1985
Alabama	X	X	X	X	X	Montana				X	X
Alaska	X	X	X	X	X	Nebraska				X	X
Arizona		X	X	X	X	Nevada	X	X	X	X	X
Arkansas		X	X	X	X	New Jersey	X	X	X	X	X
California			X		X	New Mexico			X	X	X
Colorado	X	X	X	X	X	New York		X	X	X	X
Connecticut		X	X	X	X	North Carolina	X	X	X	X	X
Delaware	X	X	X	X	X	North Dakota		X	X	X	X
District of Columbia	X	X	X	X	X	Oklahoma	X	X	X	X	X
Florida	X	X	X	X	X	Ohio				X	X
Georgia		X	X	X	X	Oregon	X	X	X	X	X
Hawaii			X	X	X	Pennsylvania		X	X	X	X
Idaho		X	X	X	X	Rhode Island			X		X
Illinois			X	X	X	South Carolina	X	X	X	X	X
Indiana	X	X	X	X	X	South Dakota			X	X	X
Iowa			X	X	X	Tennessee	X	X	X	X	X
Kansas				X	X	Texas		X	X	X	X
Kentucky		X	X	X	X	Utah	X	X	X	X	X
Louisiana			X	X	X	Vermont			X		X
Maine	X	X	X	X	X	Virginia	X	X	X	X	X
Maryland	X	X	X	X	X	Washington				X	X
Massachusetts	X	X	X	X	X	West Virginia	X	X	X	X	X
Michigan			X	X	X	Wisconsin	X	X	X	X	X
Minnesota	X		X	X	X	Wyoming			X	X	X
Mississippi	X	X	X	X	X						
Missouri	X	X	X	X	X						

<sup>1</sup> Occupational employment data at the more detailed 3-digit level are available upon request from the Office of Employment and Unemployment

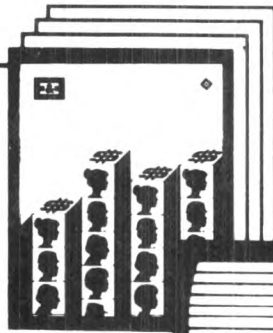
Statistics, Bureau of Labor Statistics. Definitions for all occupations surveyed are also available upon request.



# Where to Find Information on Employment and Unemployment

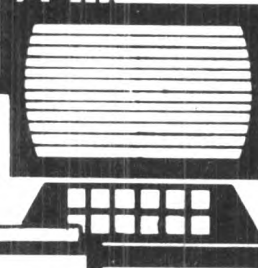
## Employment and Earnings:

Monthly periodical containing labor force and establishment data. National, State, and area figures on employment, unemployment, hours, and earnings. Order *Employment and Earnings* from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Includes text, statistical tables, and technical notes.



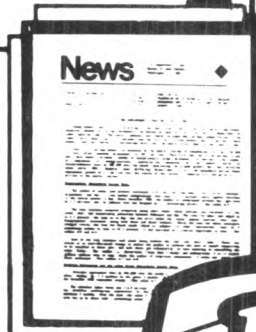
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## Machine-Readable Form:

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X ALASKA	- Employment Security Division, Department of Labor, P.O. Box 1149, Juneau 99802	VII MISSOURI	- Division of Employment Security, P.O. Box 59, Jefferson City 65104
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