

Occupational Employment in Transportation, Communications, Utilities, and Trade



U.S. Department of Labor
Bureau of Labor Statistics
December 1984

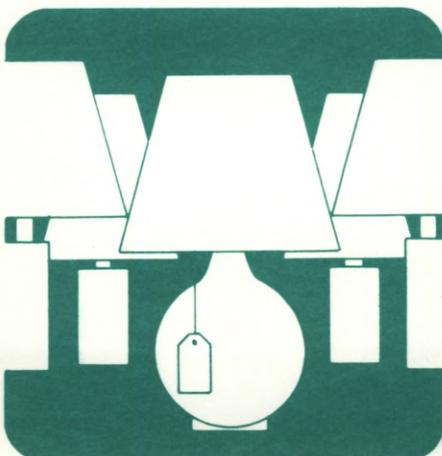
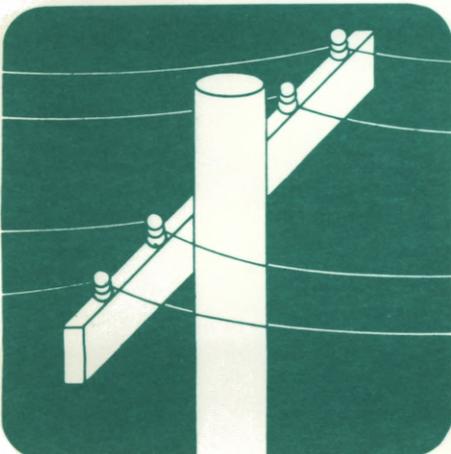
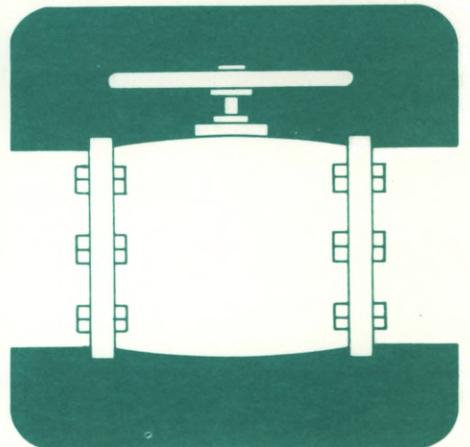
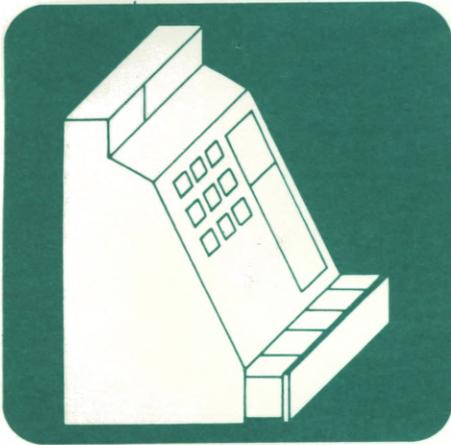
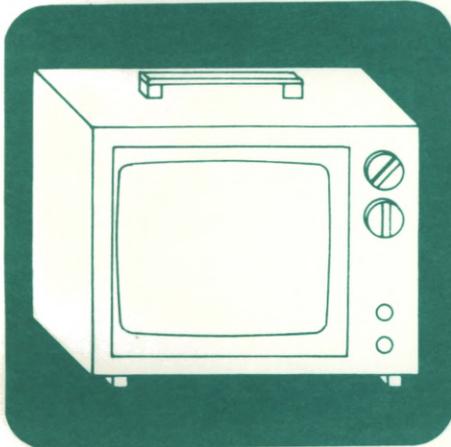
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Occupational Employment in Transportation, Communications, Utilities, and Trade



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

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December 1984

Bulletin 2220

Preface

This bulletin provides data from a 1982 survey of occupational employment in the transportation, communications, utilities, and wholesale and retail trade industries. (Occupational employment data from a 1982 survey of State and local government are also included; see appendix A). Earlier surveys of transportation, communications, utilities, and trade were conducted in 1973, 1976, and 1979. Results of the 1979 survey were published in Bulletin 2116, *Occupational Employment in Transportation, Communications, Utilities, and Trade*. Other selected nonmanufacturing industries were surveyed in 1981 and results were published in Bulletin 2186, *Occupational Employment in Mining, Construction, Finance, and Services*.

Surveys of the manufacturing sector were conducted in 1971, 1974, 1977, and 1980. Results of the 1980 survey were published in Bulletin 2133, *Occupational Employment in Manufacturing Industries*.

These periodic surveys are part of a Federal-State cooperative program of occupational employment

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

This bulletin was prepared in the Office of Employment and Unemployment Statistics, Division of Occupational and Administrative Statistics, by Patricia Y. Hyland under the direction of Glyn T. Finley. John Shew and Barbara L. Keitt provided data processing support. Typing assistance was provided by Minnie L. Dickerson.

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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.

In 1982 and in 1979, 48 States and the District of Columbia participated in the survey, compared with 43 States in 1978, 29 States in 1975, and 22 in 1973. BLS conducted a supplemental survey in 1982, with the financial aid of the National Science Foundation, to collect data in the nonparticipating States and to develop national estimates.

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

Data presented

This bulletin presents occupational employment for 2-digit SIC industries.¹ Data are presented for each industry under the following headings: Employment, per-

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

Employment is based upon survey results adjusted to reflect total industry employment. The percent of total employment refers to total employment in the industry. Relative error measures the level of confidence to be placed on each estimate. The percent of establishments reporting a particular occupation indicates the frequency of occurrence of the occupation.

Occupations with fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are not shown separately but are included in the appropriate residual categories.

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

¹ 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.

In 1982, 25.2 million, or 29 percent, of all nonagricultural wage and salary workers in the Nation were employed in transportation, communications, utilities, and trade, the industries covered by this survey. Of these, almost 82 percent, or 20.6 million, were employed in trade. Just under three-quarters were employed in retail trade, the same proportion as in 1979; the balance was in wholesale trade. The transportation industries employed more than 9 percent of the workers surveyed, or about 2.4 million. Motor freight transportation and warehousing employed the largest proportion of workers in transportation, accounting for slightly more than half of the transportation workers. Communications, the third largest industry surveyed, employed 1.4 million workers or almost 6 percent of the total workers surveyed. Utilities, the smallest industry, accounted for a little more than 3 percent of total employment, or 867,000 workers. (See table 1.)

For comparative purposes, data from the 1979 survey of occupational employment in these industries¹ appear in the following tabulation:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Transportation	2,467,290	2,368,240	-4
Communications	1,316,460	1,421,120	8
Utilities	796,460	866,770	9
Wholesale and retail trade	20,320,980	20,571,860	1

The tabulation shows the transportation industry as the only surveyed industry to experience a decline in employment from 1979 to 1982. In 1982, there were almost 100,000 or 4 percent fewer transportation workers than in 1979. Both communications and utilities had the largest percentage gains in employment, while in wholesale and retail trade employment increased by only 1 percent.

Between 1979 and 1982, many economic and regulatory changes took place in the economy. These changes, some industry-specific, may provide a partial explanation for the changes in employment experienced by these industries in 1982.

The recessions of 1980 and 1981-82 affected many industries, including those covered in this publication. Transportation, as a whole, showed the greatest cyclical

decline, with a 4 percent drop in employment from 1979 to 1982. Airlines and trucking, both of which were deregulated in the late 1970's and early 1980's, led the overall decline. During the 1979-82 period, railroads and airlines were characterized by bankruptcies and aggressive and increased competition, including fierce fare and rate discounting (price wars). Wholesale and retail trade experienced lagging sales, low profits, and high interest rates; these factors may have contributed to the very slow job growth during this period. In contrast, employment growth was strong in the communications industry. Included among the factors partially responsible for this employment growth were rapid technological change; increased deregulation; and the increased demand for telecommunication and broadcasting services (satellite communications, international telephone services, cable television services, etc.). Utilities also had strong employment growth from 1979 to 1982. This may be attributable to improved revenues, increased rate allowances, and decreased construction spending.

Major occupational groups

In this study, workers are classified into seven major occupational groups: Managers and officers; professional workers; technical workers; service workers; operating, maintenance, construction, repair, material handling, and powerplant workers; clerical workers; and sales workers. Tables 2 and 3 present the distribution of employment in the various industries surveyed.

Subsequent sections in this publication deal with the four major industry groups and discuss employment in each by major occupational group. These sections also present occupational employment data by industry segment (two-digit SIC).

Managers and officers

Managers and officers are primarily concerned with the policymaking, planning, organizing, staffing, directing, and controlling of activities common to many types of organizations. Also included are persons responsible for the operation of an enterprise or establishment (usually small) in which they may engage, in part, in the same activities as the workers they supervise. Occupations included in this group are plant, office, and sales managers, and corporate officers such as president, secretary, and treasurer.

¹ See *Occupational Employment in Transportation, Communications, Utilities, and Trade, 1979*, Bulletin 2116 (April 1982).

In the industries surveyed in 1982, managers and officers numbered 2.7 million (table 2), compared to 2.3 million in 1979, an increase of 16 percent between the survey years. Eleven percent of the employees covered by the 1982 survey were managers and officers. (See table 3.)

As might be expected, the largest concentration of managers and officers was found in wholesale and retail trade. They accounted for 83 percent of the managers and officers in all the surveyed industries. In order of predominance, the largest employers of managers and officers in wholesale and retail trade were eating and drinking places (381,000 or 14 percent of all managers and officers surveyed); wholesale firms selling durable goods (350,000 or 13 percent); and food stores (257,000 or 9 percent).

Professional workers

Professional workers usually deal with the theoretical or practical aspects of science, engineering, technical work, art, education, medicine, law, and business relations. Most of these occupations require substantial educational preparation, usually at the university level.

In 1982, professional workers numbered 959,000, nearly 5 percent more than the 914,000 in 1979. They accounted for 4 percent of the employment covered by the 1982 survey. The largest proportion of professional workers was in wholesale firms selling durable goods, with 18 percent. Communications ranked second, employing 157,000 or 16 percent.

Technical workers

Technical workers require theoretical knowledge of fundamental scientific, engineering, mathematical, computer programming, or drafting principles; they provide assistance and independently operate and program technical equipment and systems. Their knowledge is acquired through study at technical schools and junior colleges, through other formal post-high school training less extensive than a 4-year college course, or through equivalent on-the-job training or experience.

Technical occupations were the smallest group among the major groups in 1982. There were 370,000 technical workers in 1982 compared to 291,000 in 1979, a 27 percent increase, the largest increase in employment among the occupational groups. More than half of the technical workers were employed in wholesale firms selling durable goods and in the communications industry. Air transportation employed 13 percent, four-fifths of whom were airplane pilots.

Service workers

Service workers perform services for individuals or establishments. They protect individuals and property, prepare and serve food and beverages, clean interiors

and equipment of buildings, offices, stores, etc., and provide repair services in all industries.

There were 5.0 million service workers in 1982, a 5 percent increase over 1979, and they accounted for almost 20 percent of the employment covered by this survey. More than four-fifths of the service workers were employed in eating and drinking establishments.

Operating, maintenance, construction, repair, material handling, and powerplant workers

Operating, maintenance, construction, repair, material handling, and powerplant workers include all skilled, semiskilled, and unskilled workers performing machine and manual tasks.

This was the largest of the seven major occupational groups, and accounted for 6.3 million or 25 percent of the total surveyed employment in 1982. This was the only major occupational group to experience a decrease in total employment from 1979 to 1982. Employment declined by 7 percent over this period, from 6.7 million to 6.3 million. The largest concentrations of operating workers were in motor freight transportation and warehousing, and in wholesale firms selling durable goods. Each employed about 14 percent of all the operating workers surveyed.

Clerical workers

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

Clerical workers ranked second among the seven occupational groups in 1982, with 5.4 million or 22 percent of total employment in the surveyed industries. From 1979 to 1982, employment increased by 20,000 workers or less than 1 percent. The largest concentration of clerical workers in 1982, 908,000 or 17 percent, was in the durable goods segment of the wholesale trade industry. Food stores followed, with 15 percent.

Sales workers

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

In 1982, 4.5 million sales workers made up 18 percent of the total employment in the surveyed industries.

From 1979 to 1982, there was an increase in employment of only 1 percent in this major occupational group. Wholesale and retail trade accounted for almost

all of the sales workers in 1982. General merchandise stores employed the largest number—1 million.

Table 1. Employment in transportation, communications, utilities, and wholesale and retail trade, 1982

Industry	Employment	Percent distribution
Total	25,227,990	100.0
Transportation	2,368,240	9.4
Local and suburban transit and interurban highway passenger transportation	268,890	1.1
Motor freight transportation and warehousing ...	1,207,840	4.8
Water transportation	212,600	.8
Air transportation	440,590	1.7
Pipe lines, except natural gas	22,650	.1
Transportation services	215,670	.9
Communications	1,421,120	5.6
Utilities	866,770	3.4
Wholesale and retail trade	20,571,860	81.5
Wholesale trade	5,325,780	21.1
Durable goods	3,117,780	12.4
Nondurable goods	2,208,000	8.8
Retail trade	15,246,080	60.4
Building materials, hardware, garden supply, and mobile home dealers	599,580	2.4
General merchandise stores	2,150,570	8.5
Food stores	2,466,270	9.8
Automotive dealers and gasoline service stations	1,637,690	6.5
Apparel and accessory stores	933,620	3.7
Furniture, home furnishings, and equipment stores	573,880	2.3
Eating and drinking places	4,985,150	19.8
Miscellaneous retail	1,899,320	7.5

Table 2. Employment in transportation, communications, utilities, and wholesale and retail trade by major occupational group, 1982

Industry	Managers and officers	Professional workers	Technical workers	Service workers	Operating, maintenance, construction, repair, material handling, and powerplant workers	Clerical workers	Sales workers
Total	2,676,580	959,370	369,520	4,996,640	6,257,240	5,420,240	4,548,400
Local and suburban transit and interurban highway	15,440	2,710	15,530	6,690	194,830	32,490	1,200
Motor freight transportation and warehousing	100,750	10,650	1,950	10,770	871,600	187,590	24,530
Water transportation	30,770	6,940	2,290	11,420	131,190	26,790	3,200
Air transportation	25,140	18,100	55,070	70,290	125,900	139,060	7,030
Pipe lines, except natural gas	2,040	3,150	1,520	100	12,890	2,930	20
Transportation services	39,840	60,030	680	7,190	28,490	70,230	9,210
Communications	163,290	157,470	70,850	13,300	389,430	559,630	67,150
Electric, gas, steam, water, and sanitary services	68,350	97,330	51,230	16,760	412,070	214,990	6,040
Wholesale trade--durable goods	349,530	177,100	131,120	27,290	861,860	907,570	663,310
Wholesale trade--nondurable goods ..	224,490	79,430	14,880	43,240	775,160	617,480	453,320
Building materials, hardware, garden supply, and mobile home dealers ..	87,760	17,400	800	8,630	170,090	141,140	173,760
General merchandise stores	197,430	54,220	4,660	124,990	239,200	529,290	1,000,780
Food stores	257,440	34,920	2,380	273,840	679,100	806,040	412,550
Automotive dealers and gasoline service stations	242,780	19,440	2,240	46,240	775,370	291,610	260,010
Apparel and accessory stores	158,760	24,230	490	12,980	74,540	122,790	539,830
Furniture, home furnishings, and equipment stores	89,230	24,180	2,910	13,560	143,840	122,130	178,030
Eating and drinking places	380,520	21,470	920	4,254,510	54,230	211,660	61,840
Miscellaneous retail	243,020	150,600	10,000	54,840	317,450	436,820	686,590

¹ Includes pipe line transportation, petroleum and extraction workers.

Table 3. Percent distribution of employment in transportation, communications, utilities, and wholesale and retail trade by major occupational group, 1982

Industry	All occupations	Managers and officers	Professional workers	Technical workers	Service workers	Operating, maintenance, construction, repair, material handling, and powerplant workers	Clerical workers	Sales workers
Total	100.0	10.6	3.8	1.5	19.8	24.8	21.5	18.0
Local and suburban transit and interurban highway	100.0	5.7	1.0	5.8	2.5	72.5	12.1	.4
Motor freight transportation and warehousing	100.0	8.3	.9	.2	.9	72.2	15.5	2.0
Water transportation	100.0	14.5	3.3	1.1	5.4	61.7	12.6	1.5
Air transportation	100.0	5.7	4.1	12.5	16.0	28.6	31.6	1.6
Pipe lines, except natural gas	100.0	9.0	13.9	6.7	.4	57	12.9	.1
Transportation services	100.0	18.5	27.8	.3	3.3	13.2	32.6	4.3
Communications	100.0	11.5	11.1	5.0	.9	27.4	39.4	4.7
Electric, gas, steam, water, and sanitary services	100.0	7.9	11.2	5.9	1.9	47.5	24.8	.7
Wholesale trade--durable goods	100.0	11.2	5.7	4.2	.9	27.6	29.1	21.3
Wholesale trade--nondurable goods ..	100.0	10.2	3.6	.7	2.0	35.1	28.0	20.5
Building materials, hardware, garden supply, and mobile home dealers ..	100.0	14.6	2.9	.1	1.4	28.4	23.5	29.0
General merchandise stores	100.0	9.2	2.5	.2	5.8	11.1	24.6	46.5
Food stores	100.0	10.4	1.4	.1	11.1	27.5	32.7	16.7
Automotive dealers and gasoline service stations	100.0	14.8	1.2	.1	2.8	47.3	17.8	15.9
Apparel and accessory stores	100.0	17.0	2.6	.1	1.4	8.0	13.2	57.8
Furniture, home furnishings, and equipment stores	100.0	15.5	4.2	.5	2.4	25.1	21.3	31.0
Eating and drinking places	100.0	7.6	.4	(²)	85.3	1.1	4.2	1.2
Miscellaneous retail	100.0	12.8	7.9	.5	2.9	16.7	23.0	36.1

¹ Includes pipe line transportation, petroleum and extraction workers.

² Less than 0.1 percent.

Transportation

In 1982, 2.4 million persons were employed in the transportation industries. The motor freight transportation and warehousing industry was the largest employer, with 51 percent of all transportation workers (table 4). Air transportation ranked second, with nearly 19 percent. Local and suburban transit and interurban highway passenger transportation employed 11 percent, and services incidental to transportation employed 9 percent, as did water transportation. Pipeline transportation (except natural gas) employed only 1 percent.

The transportation industry, as a whole, experienced a slight employment decline since 1979. The following tabulation shows the change in employment for the transportation industries from 1979 to 1982:

	<i>Employment</i>		<i>Percent</i>
	<i>1979</i>	<i>1982</i>	<i>change</i>
Total	2,467,290	2,368,240	-4
Local and suburban transit and interurban highway passenger transportation .	262,570	268,890	2
Motor freight transportation and warehousing	1,351,960	1,207,840	-11
Water transportation	207,560	212,600	2
Air transportation	443,910	440,590	-1
Pipelines, except natural gas	20,310	22,650	12
Transportation services ...	180,980	215,670	19

Since 1979, the only transportation industries to experience declines in employment have been motor freight transportation and warehousing and air transportation, declining by 11 percent and 1 percent, respectively. Transportation services had an employment gain of 19 percent, the largest percentage increase of any of the transportation industries. Pipelines experienced an increase of 12 percent; the remaining transportation industries had employment gains of 2 percent or less.

Several events occurred between 1979 and 1982 that may provide a partial explanation for the employment changes in transportation. These are discussed in more detail in the following sections.

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). Firms which supply terminal and maintenance services also make up part of this industry.

In 1982, this industry employed 269,000 persons or 11 percent of total employment in transportation. Nearly a third of these workers were employed in establishments that provide local and suburban passenger transportation. Bus drivers (including school bus) and emergency medical technicians were the largest occupations.

Of the workers employed in this industry, 72 percent were in operating, maintenance, construction, repair, material handling, and powerplant occupations (table 5). Clerical occupations ranked second with 12 percent of total industry employment. About 6 percent of the jobs were filled by technical workers, nine-tenths of whom were emergency medical technicians. Managers and officers ranked fourth, also with about 6 percent of the total industry work force. Service and professional workers accounted for 3 percent of employment in the industry; the remaining workers were in sales and accounted for less than 1 percent of the industry's workers.

Employment in local and suburban transit and interurban highway passenger transportation increased by 6,300, or 2 percent between 1979 and 1982. Two of the occupations in this industry that experienced large absolute and percentage employment changes between 1979 and 1982 are shown in the following tabulation:

	<i>Employment</i>		<i>Percent</i>
	<i>1979</i>	<i>1982</i>	<i>change</i>
Taxi drivers	41,480	27,920	-33
Emergency medical technicians	7,270	14,740	103

Adverse economic conditions, increased energy costs, and increased use of public transportation may have contributed to the decline in taxi driver employment, while increased demand for health care may have led to the rise in emergency medical technicians.

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).

Of the industry's 1.2 million workers, local and long-distance trucking accounted for 93 percent; public warehousing, 7 percent; and terminal and maintenance facilities for trucking, 1 percent.

Slightly more than 72 percent of all workers in the motor freight transportation and warehousing industry were in operating, maintenance, construction, repair, material handling, and powerplant occupations. (See table 6.) Of these, 56 percent were truck drivers, three-fourths of whom drove tractor-trailers. Clerical workers accounted for 16 percent of industry employment. The remaining industry employment consisted of managers and officers, with 8 percent of the work force; sales workers, with 2 percent; service, technical, and professional workers, each with less than 1 percent.

Employment in the motor freight transportation and warehousing industry dropped more than 11 percent from 1979 to 1982. Three occupations that experienced large employment declines during this period are shown in the following tabulation:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Tractor-trailer truck driver	455,940	355,720	-22
Truck driver helper	64,480	50,280	-22
Light truck driver	59,820	48,420	-19

Several factors may have contributed to the employment decline in the motor carrier industry. Deregulation, under the Motor Carrier Act of 1980, relaxed entry requirements and restrictions on carriers' route operations, which allowed many new small carriers to enter the business. The intense rate competition that followed caused the larger, more established carriers to suffer losses in truckload business. This, coupled with adverse economic conditions, and the declining profitability of the industry, may have contributed to the loss in truck driver jobs. (Self-employed truck drivers were not covered by this survey.)

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 1982, this industry employed 213,000 persons. Fifty-four percent of the workers were employed in miscellaneous water transportation services. Local water transportation and deep sea foreign transporta-

tion establishments accounted for 30 percent, while the remaining 15 percent worked in firms providing transportation on rivers and canals, deep sea domestic services and transportation services on the Great Lakes-St. Lawrence Seaway.

Operating, maintenance, construction, repair, material handling, and powerplant occupations accounted for the largest number of workers, 131,000, or 62 percent of the employment in water transportation. (See table 7.) Within this group, the predominant occupations were ordinary seamen, able seamen, and ships' engineers. Managers and officers ranked second among the major occupational groups with 14 percent, while clerical workers accounted for 13 percent. Service workers accounted for 5 percent; professional occupations, 3 percent; and sales and technical workers combined, only 2 percent.

From 1979 to 1982, employment in the water transportation industry increased by 2 percent. Sizable changes in employment occurred in a number of occupations, however, two of which are shown in the tabulation:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Water vessel captain	10,560	13,780	30
Rigger	1,140	580	-49

Air transportation

Primarily furnishing foreign and domestic air transportation, this industry also consists of firms that operate airports and flying fields, and perform terminal services.

The air transportation industry employed 441,000 workers in 1982. Carriers certificated under the Civil Aeronautics Act to transport revenue passengers, cargo, or freight, accounted for 81 percent of the workers in air transportation. Establishments which operate and maintain airports and flying fields and service, repair, and store aircraft accounted for 11 percent. Noncertificated air carriers employed 6 percent.

Numbering 139,000, clerical workers held 32 percent of the jobs in air transportation in 1982. The majority of these workers were employed either as ticket agents or reservation agents. (See table 8.) Employees in operating, maintenance, construction, repair, material handling, and powerplant occupations ranked second with 29 percent of the employment. Aircraft mechanics made up 40 percent of these workers. Service workers accounted for 16 percent of total industry employment, while technical workers accounted for 12 percent. Managers and officers made up 6 percent; professional workers, 4 percent; and sales workers, 2 percent.

Employment in the air transportation industry decreased by 3,000 workers or by 1 percent from 1979 to 1982. The following tabulation shows two occupations

in this industry that experienced large decreases in employment over this period:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Reservation agents	48,680	30,220	-38
Aeronautical engineers	1,200	560	-53

As with trucking, airlines were deregulated in 1979, resulting in increased competition among firms, including fare discounting and price wars. As a result, there was an increase in airline company bankruptcies which, in combination with the recessions of 1980 and 1981-82, may have adversely affected employment levels.

Pipelines, except natural gas

This industry is made up of firms that move petroleum and other commodities (except natural gas) through pipe lines. Pipelines operated by petroleum producing or refining companies and separately reported are also included.

There were 23,000 workers in this industry in 1982, a gain of 12 percent over 1979. Over one-half of these workers held jobs in operating, maintenance, construction, repair, material handling, and powerplant occupations. (See table 9.) Professional workers were the second largest occupational group, accounting for 14 percent of industry employment. Nearly half of these professional workers were engineers. Thirteen percent of the workers held clerical jobs, 9 percent were managers and officers, and 7 percent held technical jobs. The smallest group, service and sales workers, accounted for less than 1 percent of total industry employment.

Transportation services

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

There were 216,000 persons employed in this industry in 1982. Two-thirds of the workers primarily furnished travel information, acted as agents in arranging tours and transporting passengers, or acted as independent agents for transportation establishments. Also included were persons arranging for the transportation of freight and cargo. However, workers in establishments which

transport goods from shippers to receivers for a fee covering the entire transportation, and in turn use services of other transportation establishments for delivery, accounted for 25 percent of the employment in transportation services. Eight percent of the workers in this industry were employed in establishments which provide miscellaneous services such as packing and crating goods for shipment, and the operation of highway bridges, tunnels, and toll roads. The remaining 2 percent were employed in establishments which rent railroad cars to transport passengers and freight.

With one-third of industry employment, clerical occupations accounted for the largest number of workers in the transportation services industry. Professional workers ranked second, with 28 percent. Almost all of the professional workers were travel agents and travel accommodations appraisers. (See table 10.) Managers and officers ranked third among the occupational groups, with 18 percent of the industry employment. Operating, maintenance, construction, repair, material handling, and powerplant occupations accounted for 13 percent of the industry work force; and sales, service, and technical occupations constituted the remaining 8 percent.

Employment in the transportation services industry increased by 35,000 workers, or by 19 percent from 1979 to 1982. The following tabulation shows three occupations that experienced large absolute and percent gains in employment from 1979 to 1982:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Travel agent and/or travel accommodations appraiser	44,900	55,620	24
Sightseeing guide	601	2,330	288
Computer operator	528	1,620	207

A substantial part—more than 35 percent—of total employment growth in transportation services between 1979-82 was related to recreation. To the extent that the economic climate of 1981-82 curtailed foreign travel by Americans, it might be suggested that more U.S. citizens have been taking vacations in the continental United States, thereby increasing the demand for recreation-related transportation service workers.

Table 4. Transportation Industries: Percent distribution of employment in major occupational groups by industry, 1982

Industry	Total	Managers and officers	Professional workers	Technical workers	Service workers	Operating, maintenance, construction, repair, material handling, and power-plant workers	Clerical workers	Sales workers
Total	2,368,240	213,980	101,580	77,040	106,460	1,364,900	459,090	45,190
Percent	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Local and suburban transit and interurban highway passenger transportation	11.35	7.22	2.67	20.16	6.28	14.27	7.08	2.66
Motor freight transportation and warehousing	51.00	47.08	10.48	2.53	10.12	63.86	40.86	54.28
Water transportation	8.98	14.38	6.83	2.97	10.73	9.61	5.84	7.08
Transportation by air	18.60	11.75	17.82	71.48	66.02	9.22	30.29	15.56
Pipe lines, except natural gas96	.95	3.10	1.97	.09	.94	.64	.04
Transportation services	9.11	18.62	59.10	.88	6.75	2.09	15.30	20.38

Table 5. Local and suburban transit and interurban highway passenger transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 41)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	268,890	100.00	--	--
Managers and officers	15,440	5.74	n.a.	n.a.
Professional occupations	2,710	1.01	n.a.	n.a.
Systems analyst, electronic data processing	60	.02	36	1
Purchasing agent and/or buyer	200	.07	7	3
Accountants and auditors	1,110	.41	7	11
Personnel and labor relations specialists	310	.12	8	3
All other professional workers	1,030	.38	n.a.	n.a.
Technical occupations	15,530	5.78	n.a.	n.a.
Computer programmer	60	.02	25	1
Engineering technicians	60	.02	46	(³)
Emergency medical technician	14,740	5.48	6	12
All other technicians	670	.25	n.a.	n.a.
Service occupations	6,690	2.49	n.a.	n.a.
Janitors, porters, and cleaners	1,590	.59	5	9
Guards and doorkeepers	170	.06	16	1
Food service workers	180	.07	28	(³)
Supervisor, nonworking-service only	260	.10	11	2
Baggage porter, transportation	900	.33	12	2
School and/or school bus monitor	2,490	.93	17	3
All other service workers	1,100	.41	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	194,830	72.46	n.a.	n.a.
Mechanics and repairers, total	14,490	5.39	n.a.	n.a.
Mechanic, automotive	7,310	2.72	3	32
Automotive body repairer	1,080	.40	7	7
Diesel mechanic	5,460	2.03	5	13
Mechanic, maintenance	360	.13	26	1
All other mechanics and repairers	280	.10	n.a.	n.a.
Truck driver	760	.28	27	1
Baggage handler	1,470	.55	9	2
Bus driver	52,810	19.64	3	26
Cleaner, vehicle	3,960	1.47	4	18
Delivery and/or route worker	120	.04	30	1
Supervisor, nonworking	1,680	.62	5	12
Maintenance repairer, general utility	1,000	.37	9	6
Helper, trades	1,210	.45	6	9
Oiler	290	.11	17	2
Painter, automotive	110	.04	11	1
Taxi driver	27,920	10.38	3	16
Service station attendant, fuel pump attendant and/or lubricator	1,020	.38	8	5
Tire changer	160	.06	7	2
Chauffeur	7,570	2.82	10	5
Bus driver, school	69,260	25.76	2	28
Ambulance driver and/or attendant	10,050	3.74	8	10
All other skilled craft and kindred workers	140	.05	n.a.	n.a.
All other operatives and semiskilled workers	300	.11	n.a.	n.a.
All other laborers and unskilled workers	510	.19	n.a.	n.a.
Clerical occupations	32,490	12.08	n.a.	n.a.
Office clerical workers, total	20,630	7.67	n.a.	n.a.
Bookkeeping and/or billing machine operator	120	.04	14	1
Computer operator	190	.07	18	2
All other office machine operators	150	.06	n.a.	n.a.
Stenographer	80	.03	15	1
Accounting clerk	1,320	.49	16	9
Reservation agent	320	.12	16	1
Bookkeeper, hand	1,360	.51	6	16
Cashier	610	.23	10	4
Claim adjuster	120	.04	16	1
File clerk	200	.07	18	1

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 1982—Continued

(SIC 41)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
General office clerk	4,550	1.69	5	25
Information clerk	1,600	.60	20	6
Order clerk	70	.03	19	1
Payroll and/or timekeeping clerk	910	.34	6	12
Personnel clerk	120	.04	16	2
Receptionist	230	.09	13	4
Secretary	2,080	.77	5	19
Switchboard operator	1,340	.50	14	5
Switchboard operator/receptionist	470	.17	17	4
Ticket agent	3,630	1.35	4	11
Typist	330	.12	10	3
Clerical supervisor, office or plant	450	.17	11	3
All other office clerical workers	380	.14	n.a.	n.a.
Plant clerical workers, total	11,860	4.41	n.a.	n.a.
Production clerk and/or coordinator	70	.03	11	1
Shipping and/or receiving clerk	500	.19	10	2
Stock clerk, stockroom, warehouse or storage yard	430	.16	7	5
Meter reader, taxi or bus	200	.07	24	2
Dispatcher, vehicle, service or work	9,060	3.37	3	37
Dispatcher, police, fire and ambulance	1,470	.55	11	7
All other plant clerical workers	130	.05	n.a.	n.a.
Sales occupations				
Traffic agent	1,200	.45	n.a.	n.a.
All other sales agents, associates, and/or representatives	580	.22	10	6
Sales clerk	540	.20	n.a.	n.a.
	80	.03	27	(³)

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

² Relative standard errors apply equally to data on estimated

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

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

Table 6. Motor freight transportation and warehousing: Employment, relative error, and percent of establishments reporting selected occupations, May 1982

(SIC 42)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,207,840	100.00	--	--
Managers and officers	100,750	8.34	n.a.	n.a.
Professional occupations	10,650	.88	n.a.	n.a.
Engineers	670	.06	17	1
Systems analyst, electronic data processing	550	.05	12	2
Purchasing agent and/or buyer	650	.05	13	4
Accountants and auditors	6,890	.57	7	14
Personnel and labor relations specialists	1,350	.11	8	5
All other professional workers	540	.04	n.a.	n.a.
Technical occupations	1,950	.16	n.a.	n.a.
Computer programmer	1,080	.09	11	3
Engineering technicians	230	.02	36	(³)
All other technicians	640	.05	n.a.	n.a.
Service occupations	10,770	.89	n.a.	n.a.
Janitors, porters, and cleaners	7,040	.58	6	15
Guards and doorkeepers	2,210	.18	13	4
Supervisor, nonworking-service only	830	.07	20	1
All other service workers	690	.06	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	871,600	72.16	n.a.	n.a.
Mechanics and repairers, total	54,170	4.48	n.a.	n.a.
Mechanic, automotive	9,050	.75	7	12
Automotive body repairer	1,100	.09	15	2
Diesel mechanic	41,410	3.43	3	31
Mechanic, maintenance	960	.08	19	2
Refrigeration mechanic and/or air conditioning mechanic	360	.03	30	1
All other mechanics and repairers	1,290	.11	n.a.	n.a.
Truck driver, heavy	85,370	7.07	5	19
Truck driver, light	48,420	4.01	7	12
Tractor trailer truck driver	355,720	29.45	2	56
Carpenter	160	.01	26	1
Cleaner, vehicle	2,050	.17	11	3
Crane, derrick, and hoist operators	2,040	.17	20	2
Delivery and/or route worker	88,380	7.32	5	14
Electrician	190	.02	28	1
Supervisor, nonworking	22,360	1.85	4	26
Rigger	870	.07	38	(³)
Industrial truck operator	19,340	1.60	7	14
Inspector	470	.04	23	1
Maintenance repairer, general utility	8,520	.71	8	14
Helper, trades	6,480	.54	11	8
Oiler	540	.04	17	2
Order filler	2,130	.18	32	1
Painter, automotive	170	.01	25	1
Refuse collector	16,180	1.34	13	3
Stationary engineer	190	.02	38	(³)
Tire fabricator and/or repairer	460	.04	16	1
Welder and/or flamecutter	1,760	.15	14	3
Service station attendant, fuel pump attendant and/or lubricator	2,280	.19	15	4
Tire changer	1,340	.11	9	5
Conveyor operator or tender	850	.07	40	(³)
Truck driver helper	50,280	4.16	6	13
Locker plant attendant	3,680	.30	21	2
All other skilled craft and kindred workers	2,520	.21	n.a.	n.a.
All other operatives and semiskilled workers	6,370	.53	n.a.	n.a.
All other laborers and unskilled workers	88,310	7.31	n.a.	n.a.
Clerical occupations	187,590	15.53	n.a.	n.a.
Office clerical workers, total	113,830	9.42	n.a.	n.a.
Bookkeeping and/or billing machine operator	7,420	.61	6	13

See footnotes at end of table.

Table 6. Motor freight transportation and warehousing: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

(SIC 42)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers —Continued				
Computer operator	1,780	0.15	11	5
Keypunch operator	1,840	.15	9	4
Peripheral EDP equipment operator	680	.06	16	1
All other office machine operators	330	.03	n.a.	n.a.
Stenographer	460	.04	17	1
Accounting clerk	9,390	.78	6	16
Bookkeeper, hand	11,330	.94	6	20
Adjustment clerk	3,080	.26	7	7
Cashier	1,850	.15	10	5
Claim adjuster	1,020	.08	10	3
File clerk	1,580	.13	10	4
General office clerk	39,670	3.28	4	42
Payroll and/or timekeeping clerk	2,380	.20	6	10
Personnel clerk	810	.07	10	4
Receptionist	530	.04	20	2
Secretary	16,810	1.39	4	29
Switchboard operator	880	.07	14	3
Switchboard operator/receptionist	1,570	.13	7	8
Typist	2,430	.20	11	4
Clerical supervisor, office or plant	2,960	.25	9	6
All other office clerical workers	5,030	.42	n.a.	n.a.
Plant clerical workers, total	73,760	6.11	n.a.	n.a.
Shipping packer	14,780	1.22	10	8
Shipping and/or receiving clerk	8,340	.69	13	9
Stock clerk, stockroom, warehouse or storage yard	10,900	.90	9	13
Dispatcher, vehicle, service or work	25,690	2.13	4	35
Manifest clerk	1,210	.10	12	3
Rate clerk, freight	11,160	.92	7	19
All other plant clerical workers	1,680	.14	n.a.	n.a.
Sales occupations	24,530	2.03	n.a.	n.a.
Crating-and-moving estimator	8,100	.67	8	7
Traffic agent	8,500	.70	7	13
All other sales agents, associates, and/or representatives	7,050	.58	n.a.	n.a.
Sales clerk	880	.07	32	1

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 7. Water transportation: Employment, relative error, and percent of establishments reporting selected occupations, April 1982

(SIC 44)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	212,600	100.00	--	--
Managers and officers	30,770	14.47	n.a.	n.a.
Captain, water vessel	13,780	6.48	5	33
Pilot, ship	3,180	1.50	10	12
All other managers	13,810	6.50	n.a.	n.a.
Professional occupations	6,940	3.26	n.a.	n.a.
Engineers, total	2,060	.97	n.a.	n.a.
Marine engineer	1,030	.48	10	10
Mechanical engineer	600	.28	18	3
All other engineers	430	.20	n.a.	n.a.
Systems analyst, electronic data processing	290	.14	15	4
Purchasing agent and/or buyer	1,240	.58	13	14
Accountants and auditors	2,080	.98	9	18
Personnel and labor relations specialists	530	.25	12	8
All other professional workers	740	.35	n.a.	n.a.
Technical occupations	2,290	1.08	n.a.	n.a.
Computer programmer	300	.14	11	4
Engineering technicians, total	830	.39	n.a.	n.a.
Surveyor	750	.35	29	1
All other engineering technicians	80	.04	n.a.	n.a.
Radio operator	960	.45	11	5
All other technicians	200	.09	n.a.	n.a.
Service occupations	11,420	5.37	n.a.	n.a.
Janitors, porters, and cleaners	690	.32	13	9
Guards and doorkeepers	920	.43	15	7
Food service workers	6,440	3.03	8	15
Supervisor, nonworking-service only	610	.29	16	5
Steward, ship	1,280	.60	21	3
All other service workers	1,480	.70	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	131,190	61.71	n.a.	n.a.
Mechanics and repairers, total	6,670	3.14	n.a.	n.a.
Mechanic, automotive	660	.31	15	6
Diesel mechanic	1,030	.48	13	9
Engineering equipment mechanic	190	.09	34	1
Marine mechanic and/or repairer	3,350	1.58	11	22
Mechanic, maintenance	690	.32	21	4
All other mechanics and repairers	750	.35	n.a.	n.a.
Truck driver	1,340	.63	27	7
Carpenter	670	.32	17	9
Crane, derrick, and hoist operators	2,260	1.06	15	14
Delivery and/or route worker	140	.07	37	1
Electrician	760	.36	18	7
Firer, marine	820	.39	16	2
Supervisor, nonworking	5,350	2.52	7	20
Rigger	580	.27	19	4
Industrial truck operator	3,110	1.46	14	9
Maintenance repairer, general utility	1,970	.93	12	14
Helper, trades	1,460	.69	12	11
Marine service station attendant	1,020	.48	16	7
Oiler	1,520	.71	10	6
Painter, maintenance	830	.39	19	7
Plumber and/or pipefitter	80	.04	30	1
Stationary engineer	170	.08	36	1
Welder and/or flamecutter	1,930	.91	15	10
Plastic boat patcher	260	.12	25	4
Shipwright	360	.17	29	2
Boatswain	1,730	.81	11	6
Able seaman	8,780	4.13	8	11
Ordinary seaman	17,460	8.21	4	30
Signaller	470	.22	20	2
Ship engineer	8,880	4.18	7	16

See footnotes at end of table.

Table 7. Water transportation: Employment, relative error, and percent of establishments reporting selected occupations, April 1982—Continued

(SIC 44)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Motorboat operator	900	0.42	23	4
All other skilled craft and kindred workers	1,300	.61	n.a.	n.a.
All other operatives and semiskilled workers	4,640	2.18	n.a.	n.a.
All other laborers and unskilled workers	55,730	26.21	n.a.	n.a.
Clerical occupations	26,790	12.60	n.a.	n.a.
Office clerical workers, total	21,810	10.26	n.a.	n.a.
Bookkeeping and/or billing machine operator	420	.20	24	4
Computer operator	420	.20	10	7
Keypunch operator	320	.15	15	3
Peripheral EDP equipment operator	170	.08	19	2
All other office machine operators	240	.11	n.a.	n.a.
Stenographer	200	.09	19	2
Accounting clerk	2,360	1.11	7	17
Reservation agent	540	.25	27	2
Bookkeeper, hand	1,230	.58	8	20
Cashier	590	.28	18	6
File clerk	280	.13	13	4
General office clerk	4,320	2.03	7	29
Payroll and/or timekeeping clerk	800	.38	7	16
Personnel clerk	260	.12	12	5
Receptionist	340	.16	12	6
Secretary	3,960	1.86	5	32
Switchboard operator	160	.08	14	3
Switchboard operator/receptionist	500	.24	7	11
Ticket agent	480	.23	22	2
Typist	1,050	.49	9	11
Clerical supervisor, office or plant	1,300	.61	12	11
All other office clerical workers	1,870	.88	n.a.	n.a.
Plant clerical workers, total	4,980	2.34	n.a.	n.a.
Production clerk and/or coordinator	430	.20	19	4
Shipping packer	920	.43	25	3
Shipping and/or receiving clerk	1,630	.77	25	6
Stock clerk, stockroom, warehouse or storage yard	950	.45	21	7
All other plant clerical workers	1,050	.49	n.a.	n.a.
Sales occupations	3,200	1.51	n.a.	n.a.
Sales agent, associate, and/or representative	2,420	1.14	8	19
Sales clerk	780	.37	19	7

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

² Relative standard errors apply equally to data on estimated

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

n.a. = not available.

Table 8. Air transportation: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 45)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	440,590	100.00	--	--
Managers and officers	25,140	5.71	n.a.	n.a.
Professional occupations	18,100	4.11	n.a.	n.a.
Engineers, total	1,490	.34	n.a.	n.a.
Aeronautical engineer	560	.13	17	1
Electrical and electronic engineers	240	.05	20	1
Industrial engineer	280	.06	18	1
All other engineers	410	.09	n.a.	n.a.
Natural and mathematical scientists	140	.03	17	(³)
Systems analyst, electronic data processing	2,000	.45	17	3
Teacher and/or instructor, vocational education or training	3,050	.69	11	13
Purchasing agent and/or buyer	1,880	.43	14	9
Accountants and auditors	3,220	.73	14	13
Lawyer	140	.03	13	2
Personnel and labor relations specialists	880	.20	13	5
Public relations practitioner	400	.09	16	4
All other professional workers	4,900	1.11	n.a.	n.a.
Technical occupations	55,070	12.50	n.a.	n.a.
Computer programmer	1,610	.37	18	3
Engineering technicians, total	1,420	.32	n.a.	n.a.
Electrical and electronic technicians	980	.22	16	3
All other engineering technicians	440	.10	n.a.	n.a.
Flight engineer	6,510	1.48	11	4
Airplane pilot	43,890	9.96	2	39
Radio operator	700	.16	13	4
All other technicians	940	.21	n.a.	n.a.
Service occupations	70,290	15.95	n.a.	n.a.
Janitors, porters, and cleaners	2,080	.47	8	13
Guards and doorkeepers	810	.18	19	3
Food service workers	3,890	.88	13	3
Flight attendants	56,990	12.93	1	7
Supervisor, nonworking-service only	2,380	.54	8	8
Baggage porter, transportation	2,690	.61	11	6
Security checker	380	.09	23	1
All other service workers	1,070	.24	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	125,900	28.58	n.a.	n.a.
Mechanics and repairers, total	60,420	13.71	n.a.	n.a.
Mechanic, aircraft	50,530	11.47	3	54
Mechanic, automotive	1,910	.43	7	10
Mechanic, maintenance	690	.16	20	2
Radio mechanic	950	.22	12	5
Electronic mechanic	2,720	.62	20	4
All other mechanics and repairers	3,620	.82	n.a.	n.a.
Truck driver	1,680	.38	16	6
Baggage handler	4,860	1.10	14	4
Carpenter	140	.03	20	1
Cleaner, vehicle	6,820	1.55	8	11
Delivery and/or route worker	2,170	.49	22	3
Electrician	310	.07	31	1
Supervisor, nonworking	5,480	1.24	7	19
Industrial truck operator	590	.13	27	1
Machinist	600	.14	23	1
Maintenance repairer, general utility	2,470	.56	10	12
Helper, trades	1,220	.28	13	4
Painter, maintenance	100	.02	30	1
Welder and/or flamecutter	250	.06	37	1
Line service attendant	34,520	7.83	5	41
Painter, aircraft	380	.09	26	2
All other skilled craft and kindred workers	1,700	.39	n.a.	n.a.
All other operatives and semiskilled workers	1,090	.25	n.a.	n.a.
All other laborers and unskilled workers	1,100	.25	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 1982—Continued

(SIC 45)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Clerical occupations	139,060	31.56	n.a.	n.a.
Office clerical workers, total	111,150	25.23	n.a.	n.a.
Bookkeeping and/or billing machine operator	240	.05	38	1
Computer operator	870	.20	13	4
Keypunch operator	1,230	.28	15	2
Peripheral EDP equipment operator	260	.06	17	1
All other office machine operators	380	.09	n.a.	n.a.
Stenographer	550	.12	10	3
Accounting clerk	5,500	1.25	9	18
Reservation agent	30,220	6.86	5	14
Bookkeeper, hand	1,090	.25	9	15
Adjustment clerk	590	.13	18	4
Cashier	360	.08	15	3
File clerk	770	.17	18	3
General office clerk	4,690	1.06	6	27
Payroll and/or timekeeping clerk	780	.18	8	10
Personnel clerk	640	.15	14	5
Receptionist	620	.14	11	7
Secretary	7,620	1.73	6	40
Switchboard operator	230	.05	13	2
Switchboard operator/receptionist	340	.08	13	6
Ticket agent	45,250	10.27	2	34
Typist	1,100	.25	12	5
Clerical supervisor, office or plant	4,680	1.06	8	12
All other office clerical workers	3,140	.71	n.a.	n.a.
Plant clerical workers, total	27,910	6.33	n.a.	n.a.
Shipping and/or receiving clerk	650	.15	16	4
Stock clerk, stockroom, warehouse or storage yard	5,840	1.33	9	13
Dispatcher, airplane	2,360	.54	7	12
Crew scheduler	1,240	.28	8	5
Transportation agent	17,180	3.90	6	21
All other plant clerical workers	640	.15	n.a.	n.a.
Sales occupations	7,030	1.60	n.a.	n.a.
Sales agent, associate, and/or representative	6,090	1.38	9	23
Sales clerk	940	.21	16	7

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 9. Pipe lines, except natural gas: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 46)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	22,650	100.00	--	--
Managers and officers	2,040	9.01	n.a.	n.a.
Professional occupations	3,150	13.91	n.a.	n.a.
Engineers, total	1,290	5.70	n.a.	n.a.
Civil engineer	240	1.06	16	10
Electrical and electronic engineers	280	1.24	14	17
Mechanical engineer	520	2.30	11	22
Safety engineer	60	.26	16	6
All other engineers	190	.84	n.a.	n.a.
Natural and mathematical scientists	80	.35	44	2
Systems analyst, electronic data processing	220	.97	23	5
Purchasing agent and/or buyer	80	.35	16	7
Accountants and auditors	580	2.56	13	13
Personnel and labor relations specialists	140	.62	13	10
Right-of-way agent	70	.31	14	9
All other professional workers	690	3.05	n.a.	n.a.
Technical occupations	1,520	6.71	n.a.	n.a.
Engineering technicians, total	1,190	5.25	n.a.	n.a.
Drafter	250	1.10	11	14
Electrical and electronic technicians	710	3.13	9	39
All other engineering technicians	230	1.02	n.a.	n.a.
Airplane pilot	80	.35	25	3
All other technicians	250	1.10	n.a.	n.a.
Service occupations	100	.44	n.a.	n.a.
Janitors, porters, and cleaners	60	.26	32	5
All other service workers	40	.18	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations ³	12,890	56.91	n.a.	n.a.
Mechanics and repairers, total	630	2.78	n.a.	n.a.
Mechanic, maintenance	540	2.38	10	31
All other mechanics and repairers	90	.40	n.a.	n.a.
Truck driver	490	2.16	21	19
Corrosion control fitter	80	.35	18	8
Delivery and/or route worker	210	.93	22	5
Dispatcher, relay	850	3.75	12	23
Electrician	350	1.55	17	18
Supervisor, nonworking	1,610	7.11	5	69
Gager	2,370	10.46	7	55
Heavy equipment operator	70	.31	21	6
Line walker	80	.35	37	4
Maintenance repairer, general utility	500	2.21	13	24
Station engineer, main line	1,410	6.23	16	19
Stationary engineer	350	1.55	24	11
Welder and/or flamecutter	310	1.37	10	25
Field mechanical meter tester	240	1.06	16	19
Pipeliner	2,440	10.77	6	51
All other skilled craft and kindred workers	150	.66	n.a.	n.a.
All other operatives and semiskilled workers	400	1.77	n.a.	n.a.
All other laborers and unskilled workers	350	1.55	n.a.	n.a.
Clerical occupations	2,930	12.94	n.a.	n.a.
Office clerical workers, total	2,790	12.32	n.a.	n.a.
Office machine operators	80	.35	n.a.	n.a.
Accounting clerk	310	1.37	13	15
File clerk	50	.22	16	4
General office clerk	580	2.56	12	33
Secretary	660	2.91	9	29
Typist	90	.40	16	10
Clerical supervisor, office or plant	120	.53	15	13
All other office clerical workers	900	3.97	n.a.	n.a.

See footnotes at end of table.

Table 9. Pipe lines, except natural gas: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 46)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Plant clerical workers, total	140	0.62	n.a.	n.a.
Stock clerk, stockroom, warehouse or storage yard	50	.22	26	5
All other plant clerical workers	90	.40	n.a.	n.a.
Sales occupations	20	.09	n.a.	n.a.

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

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

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

³ Includes pipe line transportation, petroleum, and extraction workers.

n.a. = not available.

Table 10. Transportation services: Employment, relative error, and percent of establishments reporting selected occupations, April 1982

(SIC 47)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	215,670	100.00	--	--
Managers and officers	39,840	18.47	n.a.	n.a.
Professional occupations	60,030	27.83	n.a.	n.a.
Engineers	350	.16	28	1
Systems analyst, electronic data processing	310	.14	17	1
Purchasing agent and/or buyer	560	.26	21	2
Accountants and auditors	1,490	.69	10	7
Personnel and labor relations specialists	240	.11	15	2
Travel agent and/or travel accommodations appraiser	55,620	25.79	3	54
All other professional workers	1,460	.68	n.a.	n.a.
Technical occupations	680	.32	n.a.	n.a.
Computer programmer	400	.19	11	2
Engineering technicians	70	.03	29	(³)
All other technicians	210	.10	n.a.	n.a.
Service occupations	7,190	3.33	n.a.	n.a.
Janitors, porters, and cleaners	1,010	.47	16	6
Guards and doorkeepers	230	.11	43	1
Supervisor, nonworking-service only	110	.05	45	1
Guide, travel	2,340	1.08	16	4
Guide, sightseeing or establishment	2,330	1.08	30	2
All other service workers	1,170	.54	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	28,490	13.21	n.a.	n.a.
Mechanics and repairers, total	1,040	.48	n.a.	n.a.
Mechanic, automotive	350	.16	24	2
Mechanic, maintenance	120	.06	25	1
All other mechanics and repairers	570	.26	n.a.	n.a.
Truck driver	5,380	2.49	17	7
Carpenter	260	.12	21	(³)
Crater	880	.41	20	1
Delivery and/or route worker	3,760	1.74	17	5
Supervisor, nonworking	1,000	.46	11	4
Industrial truck operator	1,320	.61	20	3
Maintenance repairer, general utility	760	.35	17	3
Helper, trades	200	.09	27	1
Painter, maintenance	260	.12	19	1
Welder and/or flamecutter	930	.43	17	1
All other skilled craft and kindred workers	620	.29	n.a.	n.a.
All other operatives and semiskilled workers	1,880	.87	n.a.	n.a.
All other laborers and unskilled workers	10,200	4.73	n.a.	n.a.
Clerical occupations	70,230	32.56	n.a.	n.a.
Office clerical workers, total	60,340	27.98	n.a.	n.a.
Bookkeeping and/or billing machine operator	1,810	.84	11	9
Computer operator	1,620	.75	14	5
Keypunch operator	790	.37	18	3
Peripheral EDP equipment operator	390	.18	18	1
All other office machine operators	680	.32	n.a.	n.a.
Stenographer	580	.27	19	2
Accounting clerk	5,730	2.66	6	21
Reservation agent	1,530	.71	19	2
Bookkeeper, hand	6,180	2.87	6	29
Cashier	510	.24	18	2
File clerk	1,330	.62	14	5
General office clerk	14,130	6.55	7	27
Order clerk	1,050	.49	20	3
Payroll and/or timekeeping clerk	610	.28	16	3
Personnel clerk	280	.13	18	2
Receptionist	1,500	.70	12	8
Secretary	5,850	2.71	6	24
Switchboard operator	440	.20	17	3

See footnotes at end of table.

Table 10. Transportation services: Employment, relative error, and percent of establishments reporting selected occupations, April 1982—Continued

(SIC 47)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Switchboard operator/receptionist	1,390	0.64	10	11
Ticket agent	970	.45	33	1
Typist	4,820	2.23	10	12
Clerical supervisor, office or plant	2,630	1.22	8	8
All other office clerical workers	5,520	2.56	n.a.	n.a.
Plant clerical workers, total	9,890	4.59	n.a.	n.a.
Shipping packer	2,720	1.26	19	4
Shipping and/or receiving clerk	1,360	.64	20	4
Weigher, recordkeeping	150	.07	32	1
Stock clerk, stockroom, warehouse or storage yard	900	.42	23	3
Dispatcher, vehicle, service or work	820	.38	19	4
Manifest clerk	710	.33	28	3
Rate clerk, freight	2,610	1.21	13	8
All other plant clerical workers	600	.28	n.a.	n.a.
Sales occupations	9,210	4.27	n.a.	n.a.
Crating-and-moving estimator	540	.25	31	2
Traffic agent	4,970	2.30	11	13
All other sales agents, associates, and/or representatives	3,260	1.51	n.a.	n.a.
Sales clerk	440	.20	24	1

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

² Relative standard errors apply equally to data on estimated

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

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

Communications

The communications industry includes firms that furnish 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 relatively small but significant part of the industry. The industry also includes home rental of cable TV service, transradio press service, operation of radar stations, and services for the exchange or recording of messages.

In 1982, 1.4 million persons were employed in the communications industry. Telephone communications employed 1 million workers, or 76 percent of the total. Fifteen percent of the workers were employed in radio and television broadcasting. Firms in communication services, which provide point-to-point services outside the scope of telephone or telegraph communications, accounted for 7 percent of the employment in this industry. Telegraph communications employed only 1 percent of all communications workers.

Clerical occupations, with 560,000 workers or 39 percent of the employment, dominated the industry. (See table 11.) Next in importance, with more than one-fourth of the employment, were operating, maintenance, construction, repair, material handling, and powerplant occupations. The third largest group of workers consisted of managers and officers, with 12

percent of the industry employment. Professional workers accounted for 11 percent; workers employed in technical and sales occupations, 10 percent; and service workers, 1 percent.

Employment in the communications industry grew by 8 percent from 1979 to 1982. The following tabulation shows employment in each of the three-digit industries in communications for 1979 and 1982:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Telephone.....	1,058,540	1,077,460	2
Telegraph.....	18,510	19,510	5
Radio and television broadcasting.....	187,990	218,970	16
Communication services...	51,410	105,120	104

Communication services had the largest employment growth. This industry experienced a number of changes over the past 3 to 4 years which may help to explain the increase in employment. These changes include: Rapid technological advance in telecommunications; an increased number of competitors in the industry; and expansion in both cable television services and the number of cable television users.

Comparisons of 1979 and 1982 employment in detailed occupations in the communications industry could not be made. The survey design was different for the 2 years and therefore, the data are not comparable.

Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 48)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,421,120	100.00	--	--
Managers and officers	163,290	11.49	n.a.	n.a.
Professional occupations	157,470	11.08	n.a.	n.a.
Engineers, total	33,100	2.33	n.a.	n.a.
Civil engineer	1,250	.09	22	2
Electrical and electronic engineers	21,860	1.54	7	39
Industrial engineer	3,940	.28	17	2
Mechanical engineer	800	.06	21	1
All other engineers	5,250	.37	n.a.	n.a.
Natural and mathematical scientists	320	.02	25	1
Economist	380	.03	35	(³)
Systems analyst, electronic data processing	5,340	.38	15	4
Photographer	3,580	.25	10	7
Television camera operator	4,130	.29	11	8
Purchasing agent and/or buyer	1,030	.07	10	5
Accountants and auditors	6,880	.48	9	11
Announcer, radio and television	44,890	3.16	3	41
Broadcast news analyst	6,900	.49	8	18
Commercial artist	1,530	.11	9	8
Writer and/or editor	7,200	.51	6	24
Film editor	1,200	.08	10	6
Lawyer	860	.06	18	2
Librarian, professional	670	.05	13	3
Personnel and labor relations specialists	6,940	.49	13	9
Public relations practitioner	2,400	.17	9	9
Reporters and correspondents	9,490	.67	6	18
Right-of-way agent	890	.06	12	3
Technical director	3,240	.23	10	8
All other professional workers	16,500	1.16	n.a.	n.a.
Technical occupations	70,850	4.99	n.a.	n.a.
Computer programmer	8,170	.57	15	4
Engineering technicians, total	58,110	4.09	n.a.	n.a.
Drafter	6,400	.45	10	9
Electrical and electronic technicians	26,360	1.85	8	23
Sound recording and reproduction technician ...	540	.04	21	2
Video-recording engineer	1,150	.08	26	2
Broadcast technician	19,360	1.36	6	20
Light technician	380	.03	19	1
Industrial engineering technician	390	.03	28	1
All other engineering technicians	3,530	.25	n.a.	n.a.
Science technicians	2,650	.19	n.a.	n.a.
Radio operator	520	.04	36	1
All other technicians	1,400	.10	n.a.	n.a.
Service occupations	13,300	.94	n.a.	n.a.
Janitors, porters, and cleaners	10,080	.71	9	28
Guards and doorkeepers	590	.04	19	1
Food service workers	410	.03	37	1
Supervisor, nonworking-service only	1,340	.09	14	4
All other service workers	880	.06	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	389,430	27.40	n.a.	n.a.
Mechanics and repairers, total	14,020	.99	n.a.	n.a.
Mechanic, automotive	3,300	.23	10	6
Mechanic, maintenance	160	.01	26	1
Radio mechanic	1,980	.14	26	2
Electronic mechanic	7,320	.52	23	2
All other mechanics and repairers	1,260	.09	n.a.	n.a.
Truck driver	1,180	.08	23	2
Automatic maintainer, telegraph	1,390	.10	18	1
Cable installer	8,510	.60	9	6
Cable repairer	10,110	.71	11	5
Cable splicer	32,790	2.31	7	18

See footnotes at end of table.

Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 48)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Central office repairer	43,610	3.07	2	20
Cleaner, vehicle	220	.02	20	1
Delivery and/or route worker	1,070	.08	23	2
Electrician	560	.04	48	1
Supervisor, nonworking	48,990	3.45	1	26
Frame wiper	16,260	1.14	13	11
Ground worker, utilities	640	.05	22	2
Industrial truck operator	430	.03	27	(³)
Inspector	610	.04	20	1
Installer repairer and/or section maintainer	91,520	6.44	1	29
Line installer repairer	37,260	2.62	7	25
Maintenance repairer, general utility	5,690	.40	11	11
Helper, trades	1,100	.08	21	2
Station installer	29,460	2.07	5	11
Stationary engineer	1,810	.13	18	3
Shop repairer, instrument	1,760	.12	35	2
Telegraph equipment maintainer	1,820	.13	39	1
Telegraph plant maintainer	820	.06	30	(³)
Teletype installer	380	.03	43	1
Trouble locator, test desk	19,940	1.40	13	11
All other skilled craft and kindred workers	9,760	.69	n.a.	n.a.
All other operatives and semiskilled workers	2,280	.16	n.a.	n.a.
All other laborers and unskilled workers	5,440	.38	n.a.	n.a.
Clerical occupations				
Office clerical workers, total	559,630	39.38	n.a.	n.a.
Office clerical workers, total	498,850	35.10	n.a.	n.a.
Bookkeeping and/or billing machine operator	3,350	.24	10	12
Computer operator	5,800	.41	12	7
Keypunch operator	2,770	.19	10	4
Peripheral EDP equipment operator	2,390	.17	18	3
All other office machine operators	2,820	.20	n.a.	n.a.
Stenographer	6,580	.46	15	6
Accounting clerk	18,370	1.29	9	23
Bookkeeper, hand	4,690	.33	10	19
Adjustment clerk	9,660	.68	5	3
Cashier	5,860	.41	8	14
Collector	4,580	.32	16	8
File clerk	3,980	.28	21	3
General office clerk	77,950	5.49	1	44
Order clerk	7,830	.55	22	4
Payroll and/or timekeeping clerk	3,340	.24	19	7
Personnel clerk	2,080	.15	12	6
Private branch service advisor	1,530	.11	21	3
Receptionist	830	.06	13	5
Secretary	24,130	1.70	6	46
Statistical clerk	17,450	1.23	12	6
Switchboard operator	1,860	.13	21	4
Switchboard operator/receptionist	1,880	.13	8	10
Counter clerk, telegraph office	350	.02	37	(³)
Script clerk	180	.01	24	1
Traffic clerk	6,470	.46	4	28
Typist	13,200	.93	16	14
Clerical supervisor, office or plant	32,740	2.30	8	14
Directory assistance operator	36,310	2.56	2	5
Central office operator	86,320	6.07	1	14
Customer service representative	74,350	5.23	1	18
All other office clerical workers	39,200	2.76	n.a.	n.a.
Plant clerical workers, total	60,780	4.28	n.a.	n.a.
Production clerk and/or coordinator	21,860	1.54	8	11
Shipping and/or receiving clerk	1,470	.10	19	5
Stock clerk, stockroom, warehouse or storage yard	9,070	.64	7	15
Dispatcher, vehicle, service or work	9,140	.64	9	10
All other plant clerical workers	19,240	1.35	n.a.	n.a.

See footnotes at end of table.

Table 11. Communications: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 48)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales occupations	67,150	4.73	n.a.	n.a.
Sales agent, associate, and/or representative	59,820	4.21	4	60
Sales clerk	7,330	.52	10	8

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

² Relative standard errors apply equally to data on estimated

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

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

Utilities

Firms that provide utility and sanitary services to the public make up the utility industry. Such establishments 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 1982, employment in utilities totaled 867,000. Almost half of the job holders worked in electric services. Establishments providing combination electric, gas, and other utility services employed 23 percent, and firms that produce and distribute gas accounted for 20 percent. The balance was in sanitary services (6 percent), water supply and irrigation systems (2 percent), and the steam supply industry (less than 1 percent).

About half of the workers in utilities held operating, maintenance, construction, repair, material handling, and powerplant jobs. (See table 12.) Clerical occupations accounted for a quarter of the industry's workers. The two largest clerical occupations were general office clerks and customer service representatives. The industry's professional workers accounted for 11 percent of utilities employment. Engineers were almost half of

the professional employees; the majority were employed in electric services. Managers and officers ranked fourth among the occupational groups; nearly 40 percent were employed in electric services.

Technical workers made up 6 percent of industry employment. The largest technical occupation was electrical or electronic technician. More than half of the industry's service workers—2 percent of industry employment—were janitors, porters, and cleaners. The smallest occupational group, sales workers, accounted for less than 1 percent of utilities employment. Gas production and distribution employed almost two-fifths of the industry's sales workers.

Employment in the utilities industry grew by 9 percent from 1979 to 1982. The following tabulation shows employment in these industries in 1979 and 1982:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Electric services	368,850	417,200	13
Combined electric, gas, and other utilities	193,000	199,890	4
Gas production/distribution	164,890	174,860	6
Sanitary services	46,766	50,290	8
Water supply	20,300	20,700	2
Irrigation systems	1,800	2,560	42
Steam supply	810	1,240	53

Table 12. Electric, gas, steam, water, and sanitary services: Employment, relative error, and percent of establishments reporting selected occupations, April 1982

(SIC 49)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	866,770	100.00	--	--
Managers and officers	68,350	7.89	n.a.	n.a.
Professional occupations	97,330	11.23	n.a.	n.a.
Engineers, total	42,930	4.95	n.a.	n.a.
Chemical engineer	1,200	.14	12	3
Civil engineer	4,530	.52	12	10
Electrical and electronic engineers	18,860	2.18	6	21
Industrial engineer	2,240	.26	8	6
Mechanical engineer	4,950	.57	9	8
Nuclear engineer	2,230	.26	14	2
All other engineers	8,920	1.03	n.a.	n.a.
Natural and mathematical scientists	3,020	.35	7	6
Systems analyst, electronic data processing	5,760	.66	7	8
Purchasing agent and/or buyer	2,670	.31	6	12
Accountants and auditors	13,830	1.60	4	25
Lawyer	1,280	.15	8	4
Personnel and labor relations specialists	4,570	.53	5	14
Right-of-way agent	2,330	.27	6	11
Home economist	860	.10	7	5
All other professional workers	20,080	2.32	n.a.	n.a.
Technical occupations	51,230	5.91	n.a.	n.a.
Computer programmer	5,110	.59	7	8
Engineering technicians, total	37,270	4.30	n.a.	n.a.
Drafter	7,250	.84	7	15
Electrical and electronic technicians	13,260	1.53	6	18
Surveyor	1,420	.16	9	7
Mechanical engineering technician	1,440	.17	17	3
Estimator & drafter, utilities	6,100	.70	7	11
All other engineering technicians	7,800	.90	n.a.	n.a.
Science technicians	2,820	.33	8	5
All other technicians	6,030	.70	n.a.	n.a.
Service occupations	16,760	1.93	n.a.	n.a.
Janitors, porters, and cleaners	9,320	1.08	5	30
Guards and doorkeepers	2,880	.33	8	5
Food service workers	570	.07	15	2
Supervisor, nonworking-service only	3,000	.35	22	5
All other service workers	990	.11	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	412,070	47.54	n.a.	n.a.
Mechanics and repairers, total	65,240	7.53	n.a.	n.a.
Mechanic, automotive	9,480	1.09	4	24
Diesel mechanic	1,250	.14	11	4
Electrical instrument repairer	2,400	.28	10	4
Electric meter installer, cut-in, cut-out, or outside	6,650	.77	6	13
Gas meter installer	4,070	.47	10	6
Engineering equipment mechanic	1,060	.12	14	2
Hydroelectric machinery mechanic, powerhouse repairer, and/or gas plant repairer	11,460	1.32	9	8
Mechanic, maintenance	7,430	.86	8	7
Power transformer repairer	2,100	.24	13	3
Treatment plant mechanic	610	.07	13	3
Water meter installer	410	.05	15	1
Gas and electric appliance repairer	9,510	1.10	6	10
All other mechanics and repairers	8,810	1.02	n.a.	n.a.
Truck driver	15,720	1.81	5	25
Cable splicer	3,910	.45	10	4
Carpenter	1,870	.22	20	3
Control room operator, steam	6,800	.78	8	6
Corrosion control fitter	2,170	.25	9	6
Crane, derrick, and hoist operators	1,950	.22	10	4

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 1982—Continued

(SIC 49)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Delivery and/or route worker	420	0.05	20	2
Diesel plant operator	430	.05	40	1
Electrician	16,470	1.90	5	17
Auxiliary equipment operator	8,560	.99	8	7
Supervisor, nonworking	34,640	4.00	4	47
Gas compressor operator	5,150	.59	9	6
Dispatcher, gas	1,740	.20	10	6
Gas pumping station operator	1,790	.21	18	2
Ground worker, utilities	7,360	.85	6	14
Heavy equipment operator	9,240	1.07	5	23
Rigger	340	.04	20	1
Industrial truck operator	780	.09	13	3
Inspector	5,290	.61	6	11
Instrument repairer	8,450	.97	5	19
Line installer repairer	55,710	6.43	4	30
Machinist	2,060	.24	9	5
Maintenance repairer, general utility	18,920	2.18	7	31
Helper, trades	16,820	1.94	5	22
Oiler	1,640	.19	19	2
Painter, maintenance	1,000	.12	11	4
Pipelayer	3,050	.35	9	4
Pipe wrapping machine operator	100	.01	29	(³)
Plumber and/or pipefitter	12,780	1.47	8	13
Power reactor operator	1,710	.20	11	1
Refuse collector	12,260	1.41	7	12
Sewage plant operator	940	.11	25	3
Stationary boiler firer	1,050	.12	18	1
Stationary engineer	1,520	.18	16	2
Substation operator	4,900	.57	8	5
Switchboard operator, generating plant	3,790	.44	10	4
Trouble shooter, power line	9,110	1.05	7	12
Turbine operator	3,690	.43	10	4
Water treatment plant operator	2,320	.27	9	7
Pump station operator, waterworks	630	.07	14	1
Welder and/or flamecutter	6,730	.78	7	19
Surveyor helper	720	.08	10	4
Dispatcher, load	2,640	.30	8	5
Tree trimmer	3,040	.35	11	4
All other skilled craft and kindred workers	13,320	1.54	n.a.	n.a.
All other operatives and semiskilled workers	15,200	1.75	n.a.	n.a.
All other laborers and unskilled workers	18,100	2.09	n.a.	n.a.
Clerical occupations	214,990	24.80	n.a.	n.a.
Office clerical workers, total	166,880	19.25	n.a.	n.a.
Bookkeeping and/or billing machine operator	3,020	.35	7	15
Computer operator	2,770	.32	6	9
Keypunch operator	2,900	.33	5	9
Peripheral EDP equipment operator	1,470	.17	8	4
All other office machine operators	2,800	.32	n.a.	n.a.
Stenographer	7,030	.81	5	13
Accounting clerk	12,240	1.41	5	28
Bookkeeper, hand	3,440	.40	7	18
Adjustment clerk	3,780	.44	8	8
Cashier	7,240	.84	5	31
Collector	4,830	.56	6	15
File clerk	2,730	.31	8	7
General office clerk	34,510	3.98	4	53
Order clerk	1,210	.14	9	5
Payroll and/or timekeeping clerk	1,780	.21	6	12
Personnel clerk	1,680	.19	10	7
Receptionist	910	.10	15	5
Secretary	16,930	1.95	3	44
Switchboard operator	1,300	.15	5	9
Switchboard operator/receptionist	820	.09	7	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 1982—Continued

(SIC 49)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Typist	6,440	0.74	7	11
Clerical supervisor, office or plant	9,570	1.10	5	20
Customer service representative	23,660	2.73	4	23
All other office clerical workers	13,820	1.59	n.a.	n.a.
Plant clerical workers, total	48,110	5.55	n.a.	n.a.
Meter reader, utilities	27,140	3.13	3	43
Shipping and/or receiving clerk	1,450	.17	10	5
Stock clerk, stockroom, warehouse or storage yard	11,170	1.29	4	34
Dispatcher, vehicle, service or work	4,660	.54	5	18
All other plant clerical workers	3,690	.43	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	6,040	.70	n.a.	n.a.
Sales clerk	5,770	.67	5	20
	270	.03	26	1

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Wholesale Trade

The wholesale trade industry group is principally engaged in selling large quantities of goods to retailers; to industrial, commercial, institutional, farm, or professional business users; and to other wholesalers. The industry 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.

There were 5.3 million persons employed in wholesale trade in 1982. (See table 13.) The durable goods segment of the industry, with 3.1 million workers, accounted for over half, or 59 percent, of the employment in the industry group. Nondurable goods establishments employed 2.2 million workers.

Employment in wholesale trade increased only 2 percent from 1979 to 1982. Almost all of the employment growth took place in nondurable goods, as shown in the following tabulation:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Wholesale trade, total	5,245,260	5,325,780	2
Durable goods	3,115,850	3,117,780	-
Nondurable goods	2,129,410	2,208,000	4

Durable goods

This industry group 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.

There were 3.1 million persons employed in wholesale durable goods in 1982. The three largest industries in this segment, constituting 70 percent of durable goods employment were: Machinery, equipment, and supplies, with 1.4 million workers; electrical goods, with 432,000; and motor vehicles and automotive parts and supplies, with 408,000.

Clerical occupations ranked highest, with 908,000 employees or 29 percent of wholesale durable goods employment. (See table 14.) Workers in operating,

maintenance, construction, repair, material handling, and powerplant occupations were almost as large a group as clerical, with 862,000 or 28 percent of the employment. Of these workers, more than one-fourth were mechanics and repairers. The next largest group, sales workers, had 663,000 employees or 21 percent of wholesale durable goods employment. Sales agents, associates, and representatives made up almost nine-tenths of these workers. Managers and officers constituted 11 percent of total employment; professionals, 6 percent; technical workers, 4 percent; and the smallest group, service workers, had less than 1 percent.

Wholesale durable goods employment increased less than 1 percent from 1979 to 1982. The largest increase was in technical occupations (25 percent). Service occupations had the largest decrease in employment, also 25 percent.

Wholesale firms selling durable goods endured hardships similar to those most other industries faced from 1979 to 1982—lagging sales, high operating costs, and static profits. Employment in wholesaling remained relatively stable partly because of the diversity of the industry's customer markets. Working hours tended to be reduced more often than employment.

Nondurable goods

Firms in this industry group 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.

In 1982, 2.2 million persons were employed in nondurable goods. The three largest industries within nondurable goods, constituting 59 percent of nondurable goods employment, were: Groceries and related products with 700,000 workers; miscellaneous nondurable goods with 394,000; and petroleum and petroleum products with 228,000.

The largest number of workers was in operating, maintenance, construction, repair, material handling, and powerplant occupations—775,000 or 35 percent of nondurable goods employment. (See table 15.) A quarter of this group were delivery and route workers,

making up the largest segment in this major occupational group. Clerical occupations ranked second, with 617,000 employees or 28 percent of nondurable goods employment. Stock clerks and general office clerks accounted for almost three-tenths of the workers in this group. Sales occupations accounted for 453,000 or 21 percent of industry employment as sales representatives made up the bulk—over four-fifths—of this group. In addition, there were 224,000 managers and officers;

79,000 professional workers; 43,000 service workers; and 15,000 technical workers.

Employment in the nondurable goods sector increased by 4 percent between 1979 and 1982. The largest absolute increase occurred in technical occupations—4,210 workers (39 percent). Employment decreased by 15 percent or 7,440 employees in service occupations, the largest decrease in any of the major occupational groups in this industry.

Table 13. Wholesale trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 50, 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	5,325,770	100.00	--	--
Managers and officers	574,020	10.78	n.a.	n.a.
Manager, merchandise	169,380	3.18	2	41
Manager, retail store	16,930	.32	13	2
Manager, automobile service department	1,210	.02	14	(³)
Manager, automotive parts department	1,310	.02	15	(³)
Wholesaler	210,600	3.95	2	48
All other managers	174,590	3.28	n.a.	n.a.
Professional occupations	256,520	4.82	n.a.	n.a.
Engineers, total	35,380	.66	n.a.	n.a.
Chemical engineer	850	.02	28	(³)
Electrical and electronic engineers	12,520	.24	12	1
Mechanical engineer	9,790	.18	10	1
All other engineers	12,220	.23	n.a.	n.a.
Statistician	880	.02	23	(³)
All other mathematical scientists	840	.02	n.a.	n.a.
Chemist	1,990	.04	12	1
Life scientist	1,290	.02	50	(³)
Systems analyst, electronic data processing	22,790	.43	13	2
Purchasing agent and/or buyer	5,460	.10	7	2
Buyer, retail and/or wholesale trade	69,680	1.31	2	19
Accountants and auditors	68,360	1.28	3	20
Commercial artist	3,270	.06	12	1
Writer and/or editor	1,600	.03	22	(³)
Lawyer	1,030	.02	14	(³)
Personnel and labor relations specialists	4,660	.09	7	2
Pharmacist	1,100	.02	32	(³)
Public relations practitioner	1,660	.03	17	1
Designer	6,900	.13	11	1
All other professional workers	29,630	.56	n.a.	n.a.
Technical occupations	146,000	2.74	n.a.	n.a.
Computer programmer	19,480	.37	11	3
Engineering technicians, total	109,740	2.06	n.a.	n.a.
Drafter	5,270	.10	10	1
Electrical and electronic technicians	99,560	1.87	5	6
Mechanical engineering technician	1,570	.03	24	(³)
All other engineering technicians	3,340	.06	n.a.	n.a.
Science technicians	3,580	.07	28	(³)
All other technicians	13,200	.25	n.a.	n.a.
Service occupations	70,520	1.32	n.a.	n.a.
Janitors, porters and cleaners	40,060	.75	3	14
Guards and doorkeepers	3,190	.06	12	1
Food service workers, total	21,580	.41	n.a.	n.a.
Janitors, porters, and cleaners	40,060	.75	3	14
Guards and doorkeepers	3,190	.06	12	1
Butcher and/or meat cutter	14,110	.26	17	1
Kitchen helper	1,150	.02	26	(³)
Waiter/waitress	1,360	.03	29	(³)
All other food service workers	4,960	.09	n.a.	n.a.
Supervisor, nonworking-service only	1,030	.02	20	(³)
All other service workers	4,660	.09	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	1,637,020	30.74	n.a.	n.a.
Mechanics and repairers, total	279,600	5.25	n.a.	n.a.
Mechanic, aircraft	1,640	.03	38	(³)
Protective signal installer and/or repairer	1,670	.03	40	(³)
Mechanic, automotive	89,010	1.67	4	11
Automotive body repairer	1,280	.02	27	(³)
Diesel mechanic	50,000	.94	7	4
Electric motor repairer	2,030	.04	34	(³)
Farm equipment mechanic	6,980	.13	17	1
Gasoline engine or mower repairer	1,290	.02	29	(³)
Engineering equipment mechanic	23,220	.44	10	2
Mechanic, maintenance	3,680	.07	16	1

See footnotes at end of table.

Table 13. Wholesale trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 50, 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Office machine servicer and/or cash register servicer	43,180	0.81	9	2
Refrigeration mechanic and/or air conditioning mechanic	3,580	.07	20	(³)
Television servicer and repairer, radio repairer and/or tape recorder repairer	1,100	.02	42	(³)
Data processing machine repairer	29,230	.55	4	(³)
Gas and electric appliance repairer	2,300	.04	33	(³)
Elevator installer and/or repairer	2,700	.05	42	(³)
All other mechanics and repairers	19,410	.36	n.a.	n.a.
Truck driver	202,540	3.80	2	29
Cabinetmaker	1,200	.02	47	(³)
Carpenter	4,450	.08	19	1
Cleaner, vehicle	1,410	.03	29	(³)
Crane, derrick, and hoist operators	11,150	.21	7	2
Delivery and/or route worker	265,520	4.99	3	26
Merchandise displayer and window trimmer	1,190	.02	34	(³)
Electrician	4,230	.08	18	1
Supervisor, nonworking	78,520	1.47	2	20
Furnace installer and repairer, hot air	680	.01	42	(³)
Glazier	3,860	.07	22	(³)
Heavy equipment operator	2,260	.04	26	(³)
Industrial truck operator	50,740	.95	5	9
Instrument repairer	960	.02	41	(³)
Jeweler and/or silversmith	780	.01	42	(³)
Machinist	12,100	.23	12	1
Maintenance repairer, general utility	63,300	1.19	4	13
Helper, trades	4,810	.09	16	1
Oil burner installer and servicer	1,510	.03	21	(³)
Order filler	169,880	3.19	3	19
Painter, automotive	640	.01	26	(³)
Painter, maintenance	980	.02	27	(³)
Plumber and/or pipefitter	2,660	.05	29	(³)
Production packager, hand or machine	28,580	.54	11	1
Sewing machine operator, regular equipment-garment	2,420	.05	30	(³)
Sewing machine operator, regular equipment-nongarment	1,110	.02	43	(³)
Tire fabricator and/or repairer	2,310	.04	29	(³)
Watchmaker	740	.01	30	(³)
Welder and/or flamecutter	9,040	.17	11	1
Furniture assembler and installer	930	.02	39	(³)
Service station attendant, fuel pump attendant and/or lubricator	15,040	.28	10	1
Tire changer	3,650	.07	18	1
Optician, dispensing and/or optical mechanic	3,200	.06	33	(³)
Stock clerk, sales floor	9,320	.17	12	1
Wood machinist	1,730	.03	39	(³)
Woodworking machine operator	1,000	.02	37	(³)
Conveyor operator or tender	5,040	.09	13	1
Truck driver helper	4,490	.08	28	1
All other skilled craft and kindred workers	39,520	.74	n.a.	n.a.
All other operatives and semiskilled workers	108,900	2.04	n.a.	n.a.
All other laborers and unskilled workers	232,330	4.36	n.a.	n.a.
Clerical occupations	1,525,060	28.64	n.a.	n.a.
Office clerical workers, total	1,079,480	20.27	n.a.	n.a.
Bookkeeping and/or billing machine operator	61,490	1.15	3	18
Computer operator	13,050	.25	5	5
Keypunch operator	15,380	.29	7	4
Peripheral EDP equipment operator	5,380	.10	8	1
All other office machine operators	3,860	.07	n.a.	n.a.
Stenographer	2,270	.04	11	1
Accounting clerk	78,420	1.47	3	20
Bookkeeper, hand	111,360	2.09	2	30
Adjustment clerk	4,370	.08	8	1

See footnotes at end of table.

Table 13. Wholesale trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 50, 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Cashier	52,580	0.99	5	10
Collector	5,040	.09	7	2
File clerk	5,400	.10	7	2
General office clerk	237,970	4.47	2	39
Order clerk	129,010	2.42	2	22
Credit authorizer	2,850	.05	8	1
Payroll and/or timekeeping clerk	4,390	.08	5	3
Personnel clerk	2,440	.05	6	2
Procurement clerk	2,240	.04	10	1
Credit reference clerk	3,130	.06	8	1
Receptionist	4,070	.08	7	2
Secretary	172,480	3.24	2	35
Service clerk	6,480	.12	10	1
Switchboard operator	3,090	.06	12	1
Switchboard operator/receptionist	6,890	.13	11	4
Typist	60,650	1.14	3	14
Clerical supervisor, office or plant	66,160	1.24	3	16
All other office clerical workers	19,030	.36	n.a.	n.a.
Plant clerical workers, total	445,580	8.37	n.a.	n.a.
Shipping packer	119,570	2.25	4	16
Shipping and/or receiving clerk	103,240	1.94	2	24
Weigher, recordkeeping	2,380	.04	19	1
Stock clerk, stockroom, warehouse or storage yard	206,500	3.88	2	27
Dispatcher, vehicle, service or work	4,400	.08	8	2
Marking clerk	2,900	.05	15	(³)
All other plant clerical workers	6,590	.12	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	1,116,630	20.97	n.a.	n.a.
Sales agent, associate, and/or representative	960,290	18.03	1	66
Sales clerk	135,190	2.54	3	15
Demonstrator	5,760	.11	31	(³)
Sales clerk supervisor	1,800	.03	17	1
All other sales workers	13,590	.26	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 14. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 50)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	3,117,780	100.00	--	--
Managers and officers	349,530	11.21	n.a.	n.a.
Manager, merchandise	101,130	3.24	2	41
Manager, retail store	10,490	.34	20	2
Manager, automobile service department	1,060	.03	16	1
Manager, automotive parts department	1,220	.04	16	1
Wholesaler	123,080	3.95	2	49
All other managers	112,550	3.61	n.a.	n.a.
Professional occupations	177,100	5.68	n.a.	n.a.
Engineers, total	31,650	1.02	n.a.	n.a.
Electrical and electronic engineers	12,210	.39	12	2
Mechanical engineer	8,800	.28	11	2
All other engineers	10,640	.34	n.a.	n.a.
Statistician	350	.01	44	(³)
All other mathematical scientists	390	.01	n.a.	n.a.
Physical scientists	350	.01	n.a.	n.a.
Systems analyst, electronic data processing	20,800	.67	14	3
Purchasing agent and/or buyer	3,850	.12	9	2
Buyer, retail and/or wholesale trade	43,380	1.39	3	21
Accountants and auditors	44,260	1.42	5	22
Commercial artist	1,290	.04	16	1
Writer and/or editor	700	.02	30	(³)
Lawyer	530	.02	25	(³)
Personnel and labor relations specialists	2,920	.09	10	2
Public relations practitioner	1,010	.03	26	1
Designer	3,040	.10	16	1
All other professional workers	22,580	.72	n.a.	n.a.
Technical occupations	131,120	4.21	n.a.	n.a.
Computer programmer	15,390	.49	13	3
Engineering technicians, total	104,910	3.36	n.a.	n.a.
Drafter	4,950	.16	10	2
Electrical and electronic technicians	95,820	3.07	5	9
Mechanical engineering technician	1,460	.05	26	(³)
All other engineering technicians	2,680	.09	n.a.	n.a.
Science technicians	1,080	.03	n.a.	n.a.
All other technicians	9,740	.31	n.a.	n.a.
Service occupations	27,290	.88	n.a.	n.a.
Janitors, porters, and cleaners	21,760	.70	4	14
Guards and doorkeepers	1,730	.06	19	1
Food service workers	820	.03	n.a.	n.a.
Supervisor, nonworking--service only	400	.01	25	(³)
All other service workers	2,580	.08	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	861,860	27.64	n.a.	n.a.
Mechanics and repairers, total	256,260	8.22	n.a.	n.a.
Mechanic, aircraft	1,540	.05	40	(³)
Protective signal installer and/or repairer	1,670	.05	40	(³)
Mechanic, automotive	75,490	2.42	5	12
Automotive body repairer	1,210	.04	28	(³)
Camera repairer and/or motion picture camera repairer	510	.02	47	(³)
Diesel mechanic	46,530	1.49	8	6
Electric motor repairer	2,000	.06	35	(³)
Farm equipment mechanic	6,690	.21	17	1
Gasoline engine or mower repairer	1,180	.04	31	(³)
Engineering equipment mechanic	22,690	.73	10	3
Mechanic, maintenance	2,450	.08	22	1
Office machine servicer and/or cash register servicer	42,480	1.36	9	3
Refrigeration mechanic and/or air conditioning mechanic	3,210	.10	22	(³)

See footnotes at end of table.

Table 14. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982--Continued

(SIC 50)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations--Continued				
Television servicer and repairer, radio repairer and/or tape recorder repairer	1,090	0.03	42	(³)
Data processing machine repairer	29,190	.94	4	1
Gas and electric appliance repairer	2,150	.07	35	(³)
Elevator installer and/or repairer	2,690	.09	42	(³)
All other mechanics and repairers	16,180	.52	n.a.	n.a.
Truck driver	78,740	2.53	3	27
Carpenter	3,950	.13	22	1
Cleaner, vehicle	1,030	.03	32	(³)
Crane, derrick, and hoist operators	10,220	.33	7	4
Delivery and/or route worker	67,950	2.18	4	19
Electrician	3,720	.12	20	1
Supervisor, nonworking	48,960	1.57	3	23
Glazier	3,600	.12	23	1
Heavy equipment operator	1,650	.05	33	(³)
Industrial truck operator	21,880	.70	7	8
Instrument repairer	930	.03	42	(³)
Jeweler and/or silversmith	770	.02	42	(³)
Machinist	11,700	.38	13	2
Maintenance repairer, general utility	39,310	1.26	6	11
Helper, trades	4,100	.13	18	1
Order filler	76,310	2.45	3	19
Painter, automotive	610	.02	27	(³)
Painter, maintenance	820	.03	31	1
Plumber and/or pipefitter	2,530	.08	30	(³)
Production packager, hand or machine	4,990	.16	17	1
Tire fabricator and/or repairer	2,040	.07	32	(³)
Watchmaker	740	.02	30	(³)
Welder and/or flamecutter	8,670	.28	12	2
Furniture assembler and installer	900	.03	40	(³)
Service station attendant, fuel pump attendant and/or lubricator	940	.03	42	(³)
Tire changer	3,040	.10	20	1
Optician, dispensing and/or optical mechanic	3,200	.10	33	(³)
Stock clerk, sales floor	3,790	.12	16	1
Wood machinist	1,720	.06	40	(³)
Variety saw operator	400	.01	43	(³)
Woodworking machine operator	1,000	.03	37	(³)
Truck driver helper	820	.03	22	(³)
All other skilled craft and kindred workers	30,670	.98	n.a.	n.a.
All other operatives and semiskilled workers	64,720	2.08	n.a.	n.a.
All other laborers and unskilled workers	96,490	3.09	n.a.	n.a.
Clerical occupations	907,570	29.11	n.a.	n.a.
Office clerical workers, total	658,500	21.12	n.a.	n.a.
Bookkeeping and/or billing machine operator	36,580	1.17	3	18
Computer operator	7,300	.23	7	5
Keypunch operator	8,080	.26	11	4
Peripheral EDP equipment operator	3,470	.11	10	2
All other office machine operators	1,950	.06	n.a.	n.a.
Stenographer	1,400	.04	14	1
Accounting clerk	45,400	1.46	3	21
Bookkeeper, hand	65,610	2.10	2	29
Adjustment clerk	2,680	.09	10	1
Cashier	15,500	.50	6	9
Collector	3,330	.11	8	2
File clerk	3,250	.10	8	2
General office clerk	147,700	4.74	3	40
Credit authorizer	1,750	.06	10	2
Order clerk	85,890	2.75	3	25
Payroll and/or timekeeping clerk	2,410	.08	7	3
Personnel clerk	1,440	.05	8	2
Procurement clerk	1,500	.05	13	1
Credit reference clerk	2,200	.07	9	1

See footnotes at end of table.

Table 14. Wholesale trade--durable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 50)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Receptionist	2,830	0.09	9	2
Secretary	114,230	3.66	2	38
Service clerk	4,760	.15	12	2
Switchboard operator	1,990	.06	17	2
Switchboard operator/receptionist	4,560	.15	17	4
Typist	39,740	1.27	3	17
Clerical supervisor, office or plant	40,580	1.30	4	17
All other office clerical workers	12,370	.40	n.a.	n.a.
Plant clerical workers, total	249,070	7.99	n.a.	n.a.
Shipping packer	54,670	1.75	4	17
Shipping and/or receiving clerk	63,000	2.02	3	27
Weigher, recordkeeping	420	.01	22	(³)
Stock clerk, stockroom, warehouse or storage yard	125,130	4.01	3	32
Dispatcher, vehicle, service or work	2,540	.08	11	2
Marking clerk	900	.03	27	(³)
All other plant clerical workers	2,410	.08	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	575,810	18.47	1	74
Sales clerk	76,430	2.45	4	17
Demonstrator	1,300	.04	37	(³)
Sales clerk supervisor	840	.03	19	(³)
All other sales workers	8,930	.29	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 15. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	2,208,000	100.00	--	--
Managers and officers	224,490	10.17	n.a.	n.a.
Manager, merchandise	68,250	3.09	2	42
Manager, retail store	6,440	.29	10	2
Wholesaler	87,520	3.96	3	47
All other managers	62,280	2.82	n.a.	n.a.
Professional occupations	79,430	3.60	n.a.	n.a.
Engineers, total	3,730	.17	n.a.	n.a.
Chemical engineer	680	.03	34	(³)
Electrical and electronic engineers	320	.01	27	(³)
Mechanical engineer	990	.04	19	1
All other engineers	1,740	.08	n.a.	n.a.
Statistician	520	.02	25	(³)
All other mathematical scientists	450	.02	n.a.	n.a.
Chemist	1,720	.08	14	1
All other physical scientists	260	.01	n.a.	n.a.
Life scientist	1,230	.06	n.a.	n.a.
Systems analyst, electronic data processing	1,990	.09	12	2
Purchasing agent and/or buyer	1,610	.07	11	2
Buyer, retail and/or wholesale trade	26,300	1.19	4	16
Accountants and auditors	24,100	1.09	4	19
Commercial artist	1,980	.09	17	1
Writer and/or editor	900	.04	30	(³)
Lawyer	500	.02	13	(³)
Personnel and labor relations specialists	1,740	.08	8	2
Pharmacist	550	.02	39	(³)
Public relations practitioner	650	.03	19	1
Designer	3,860	.17	14	1
All other professional workers	7,340	.33	n.a.	n.a.
Technical occupations	14,880	.67	n.a.	n.a.
Computer programmer	4,090	.19	10	3
Engineering technicians, total	4,830	.22	n.a.	n.a.
Drafter	320	.01	20	(³)
Electrical and electronic technicians	3,740	.17	12	2
All other engineering technicians	770	.03	n.a.	n.a.
Science technicians	2,500	.11	23	1
All other technicians	3,460	.16	n.a.	n.a.
Service occupations	43,240	1.96	n.a.	n.a.
Janitors, porters, and cleaners	18,310	.83	5	15
Guards and doorkeepers	1,450	.07	14	1
Butcher and/or meat cutter	14,110	.64	17	1
Kitchen helper	1,040	.05	28	(³)
Waiter/waitress	1,170	.05	29	(³)
Cook, restaurant	430	.02	45	(³)
All other food service workers	4,010	.18	n.a.	n.a.
Supervisor, nonworking-service only	630	.03	28	(³)
All other service workers	2,090	.09	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	775,160	35.11	n.a.	n.a.
Mechanics and repairers, total	23,330	1.06	n.a.	n.a.
Mechanic, automotive	13,520	.61	5	10
Diesel mechanic	3,470	.16	10	2
Engineering equipment mechanic	540	.02	40	(³)
Mechanic, maintenance	1,220	.06	16	1
Office machine servicer and/or cash register servicer	700	.03	26	(³)
Refrigeration mechanic and/or air conditioning mechanic	370	.02	29	(³)
All other mechanics and repairers	3,510	.16	n.a.	n.a.
Truck driver	123,800	5.61	3	31
Carpenter	500	.02	26	(³)
Crane, derrick, and hoist operators	920	.04	36	(³)

See footnotes at end of table.

Table 15. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982--Continued

(SIC 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations--Continued				
Delivery and/or route worker	197,580	8.95	4	34
Merchandise displayer and window trimmer	940	.04	39	(³)
Electrician	500	.02	15	1
Supervisor, nonworking	29,560	1.34	3	18
Heavy equipment operator	610	.03	38	(³)
Industrial truck operator	28,870	1.31	6	9
Machinist	400	.02	35	(³)
Maintenance repairer, general utility	24,000	1.09	5	14
Helper, trades	710	.03	20	1
Oil burner installer and servicer	1,290	.06	20	(³)
Order filler	93,570	4.24	4	18
Production packager, hand or machine	23,590	1.07	13	2
Sewing machine operator, regular equipment-garment	2,370	.11	30	(³)
Tire fabricator and/or repairer	270	.01	46	(³)
Welder and/or flamecutter	370	.02	23	(³)
Bagger	460	.02	40	(³)
Service station attendant, fuel pump attendant and/or lubricator	14,100	.64	11	2
Tire changer	610	.03	34	(³)
Stock clerk, sales floor	5,520	.25	17	1
Conveyor operator or tender	4,790	.22	13	2
Truck driver helper	3,680	.17	34	1
All other skilled craft and kindred workers	11,820	.54	n.a.	n.a.
All other operatives and semiskilled workers	44,980	2.04	n.a.	n.a.
All other laborers and unskilled workers	136,020	6.16	n.a.	n.a.
Clerical occupations	617,480	27.97	n.a.	n.a.
Office clerical workers, total	420,980	19.07	n.a.	n.a.
Bookkeeping and/or billing machine operator	24,910	1.13	4	17
Computer operator	5,750	.26	7	5
Keypunch operator	7,310	.33	7	4
Peripheral EDP equipment operator	1,900	.09	14	1
All other office machine operators	1,910	.09	n.a.	n.a.
Stenographer	870	.04	17	1
Accounting clerk	33,020	1.50	4	19
Bookkeeper, hand	45,750	2.07	2	30
Adjustment clerk	1,690	.08	11	1
Cashier	37,080	1.68	6	12
Collector	1,710	.08	12	1
File clerk	2,140	.10	11	2
General office clerk	90,270	4.09	3	37
Credit authorizer	1,100	.05	15	1
Order clerk	43,120	1.95	4	19
Payroll and/or timekeeping clerk	1,980	.09	8	3
Personnel clerk	1,000	.05	9	2
Procurement clerk	730	.03	16	1
Credit reference clerk	940	.04	15	1
Receptionist	1,240	.06	11	2
Secretary	58,250	2.64	3	32
Service clerk	1,720	.08	16	1
Switchboard operator	1,100	.05	13	1
Switchboard operator/receptionist	2,340	.11	7	4
Typist	20,910	.95	5	12
Clerical supervisor, office or plant	25,580	1.16	4	16
All other office clerical workers	6,660	.30	n.a.	n.a.
Plant clerical workers, total	196,500	8.90	n.a.	n.a.
Shipping packer	64,890	2.94	5	15
Shipping and/or receiving clerk	40,240	1.82	4	20
Weigher, recordkeeping	1,960	.09	23	1
Stock clerk, stockroom, warehouse or storage yard	81,380	3.69	5	23
Dispatcher, vehicle, service or work	1,860	.08	10	2
Marking clerk	2,000	.09	18	(³)
All other plant clerical workers	4,170	.19	n.a.	n.a.

See footnotes at end of table.

Table 15. Wholesale trade--nondurable goods: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 51)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales occupations	453,320	20.53	n.a.	n.a.
Sales agent, associate, and/or representative	384,470	17.41	2	58
Sales clerk	58,760	2.66	6	14
Demonstrator	4,460	.20	39	(³)
Sales clerk supervisor	970	.04	27	1
All other sales workers	4,660	.21	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Retail Trade

Establishments or businesses that sell merchandise for personal or household consumption and also render services incidental to the sale of those goods make up the retail trade industries.

There were 15.2 million workers in retail trade in 1982. Eating and drinking places employed the greatest number of workers, 5.0 million or about one-third. (See table 16.) Food stores ranked second with 2.5 million or 16 percent. Employment in general merchandise stores was almost as large—2.2 million or 14 percent. Miscellaneous retail stores employed 1.9 million workers or 12 percent; automotive dealers and gasoline service stations, 1.6 million workers or 11 percent. Employment in apparel and accessory stores accounted for 6 percent of the total employment in retail trade; the remaining two industries, building material dealers and furniture dealers, each accounted for 4 percent.

Service workers made up the largest occupational group in retail trade—4.8 million workers, or 31 percent of industry employment. (See table 17.) Sales occupations, with 22 percent of industry employment, ranked second. These were followed by 2.7 million clerical workers, who accounted for 17 percent of total industry employment. The remaining occupations were distributed as follows: Operating, maintenance, construction, repair, material handling, and powerplant occupations, 16 percent; managers and officers, 11 percent; and professional and technical workers combined, 2 percent.

Employment in retail trade establishments increased by 170,000 workers, or 1 percent, from 1979 to 1982. Contributing to the slow employment growth in retail trade were high interest rates, increased State and local taxes, and increased unemployment in manufacturing. These helped to weaken consumer confidence and to reduce retail sales.

Food stores experienced the largest percentage increase in employment (8 percent) from 1979 to 1982, as their sales—along with those of restaurants and bars—were leaders in the nondurable sector.

Automotive dealers and gasoline service stations experienced the largest percentage decline in employment from 1979 to 1982. A possible explanation for the decline could be the increase in self-service gasoline stations resulting in less service station attendants.

The following tabulation shows employment for the major retail trade industries and the percent change in employment from 1979 to 1982:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Retail trade, total	15,075,730	15,246,080	1
Building materials, hardware, garden supply stores, and mobile home dealers	645,760	599,580	-7
General merchandise stores	2,205,580	2,150,570	-2
Food stores	2,278,610	2,466,270	8
Automotive dealers and gasoline service stations	1,835,350	1,637,690	-11
Apparel and accessory stores	933,750	933,620	-
Furniture, home furnishings, and equipment stores	610,810	573,880	-6
Eating and drinking places	4,706,190	4,985,150	6
Miscellaneous retail	1,859,680	1,899,320	2

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.

This industry employed 600,000 workers in 1982. The largest industry within this group was lumber and other building material dealers, with 51 percent of the employment. Hardware stores employed another 25 percent.

Sales occupations accounted for the largest number of workers in this industry, with 29 percent of the employment. (See table 18.) More than half of the sales workers were sales agents, representatives, and associates. Ranking second, with 28 percent of industry employment, were operating, maintenance, construction, repair, material handling, and powerplant workers. Almost one-fifth of the workers in this occupation were truck drivers. Clerical workers were the third largest occupational group in this industry, with 24 percent of industry employment. Managers and officers accounted for 15 percent; professional workers, 3 percent; service occupations, 1 percent; and technical workers, less than 1 percent.

Employment in this industry declined by 7 percent between 1979 and 1982. The largest decline in employment (20 percent) was in operating, maintenance, construction, repair, material handling, and powerplant occupations.

General merchandise stores

Stores that sell apparel and accessories, furniture and home furnishings, dry goods, small wares, hardware, and food make up the general merchandise store industry.

In 1982, 2.2 million workers were employed in these stores. Department stores employed the most, 84 percent of the total; variety stores employed 10 percent; and miscellaneous general merchandise stores, 5 percent of the industry total.

The largest number of workers—47 percent—was employed in sales occupations. (See table 19.) Two-thirds of the sales workers were sales clerks. Ranking second, with 25 percent of industry employment, were clerical occupations. Cashier, the largest occupation in this group, accounted for more than a quarter of the clerical workers. The third largest group in this industry, with 11 percent of the employment, was operating, maintenance, construction, repair, material handling, and powerplant occupations. Managers and officers accounted for 9 percent; service workers, 6 percent; professional workers, 3 percent; and technical occupations, less than 1 percent.

Food stores

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

Grocery stores employed 2.2 million, or 88 percent, of all food store workers in 1982. Retail bakeries accounted for 5 percent; meat and seafood markets, including freezer provisioners and stores selling dairy products, each accounted for 2 percent of food store employment; the remaining 3 percent was distributed among miscellaneous food stores (those engaged in the retail sale of specialized foods such as coffee, tea, spices, etc.).

Clerical occupations accounted for about 33 percent of total employment in food stores. (See table 20.) Four-fifths of the clerical workers were cashiers—the industry's largest occupation. Operating, maintenance, repair, construction, material handling, and powerplant workers constituted another one-fourth of food store employment. Sales floor stock clerks accounted for over half of the employment in this group. The third largest occupational group, with 17 percent of employment, was sales workers, numbering 413,000. Service occupations ranked fourth with 11 percent, almost half of whom were butchers or meat cutters. Managers and officers accounted for 10 percent of industry employment, and professional workers accounted for 1 percent. The smallest occupational group consisted of 2,380 technical workers.

Automotive dealers and gasoline service stations

Included in this industry are 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 1982, 1.6 million workers were employed in this industry. Persons working in dealerships selling new and used motor vehicles numbered 696,000, or 43 percent of industry employment. Gasoline service stations accounted for 554,000 or 34 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 employed by establishments selling used motor vehicles; motorcycle or boat dealers; recreational and utility trailer dealers; and miscellaneous automotive dealers.

Almost half, or 775,000 workers in this industry were employed in operating, maintenance, construction, repair, material handling, and powerplant occupations. (See table 21.) More than two-fifths of these worked as mechanics and repairers. Clerical workers ranked second, with 18 percent of total employment. Cashiers made up one-third of the employment in this group. Sales workers were the third largest group, with 16 percent of the employment, and managers and officers followed with 15 percent. The remaining 4 percent were in professional, technical, and service occupations.

Employment among automotive dealers and gasoline service stations declined by 11 percent from 1979 to 1982. The operating, maintenance, construction, repair, material handling, and powerplant occupations together had the largest percentage employment decline (16 percent) of any of the major occupational groups. The number of service station attendants dropped by 25 percent, and automobile repair service estimators decreased by 47 percent, as shown in the following tabulation:

	<i>Employment</i>		<i>Percent change</i>
	<i>1979</i>	<i>1982</i>	
Service station attendants . . .	316,460	240,340	-24
Automobile repair service estimators	10,200	5,430	-47

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 934,000 workers in 1982. Women's ready-to-wear stores accounted for 36 percent of industry employment; shoe stores ranked second with 22 percent. Family clothing stores accounted for 18 percent, and men's and boys' clothing and furnishings stores, 13 percent. Establishments selling miscellaneous apparel and accessories, such as bathing suits, sports apparel, and uniforms, employed 5 percent. The remaining employment in retail apparel stores was in: Children's and in-

fants' wear stores, 3 percent; women's apparel and accessory stores, 2 percent; and furriers and fur shops, less than 1 percent.

The industry's 540,000 sales workers made up the largest occupational group, accounting for 58 percent of industry employment. (See table 22.) Managers and officers ranked second, with 159,000 or 17 percent. Clerical workers accounted for 13 percent; operating, maintenance, construction, repair, material handling, and powerplant occupations, 8 percent; professionals, 3 percent; service workers, 1 percent; and technical workers, less than 1 percent.

Employment in this industry decreased by less than 1 percent from 1979 to 1982. The operating, maintenance, construction, repair, material handling, and powerplant occupations had the largest decline (15 percent), while technical occupations grew almost 70 percent.

Furniture, home furnishings, and equipment stores

Firms that sell furniture, floor coverings, draperies, housewares, stores, refrigerators, and other household electrical and gas appliances make up the furniture, home furnishings, and equipment store industry.

Sixty-one percent of the employment in this industry was in furniture, home furnishings, and equipment stores (except appliances). Radio, television, and music stores accounted for 26 percent of the employment, and the remaining 13 percent was in household appliance stores.

Numbering 178,000, sales occupations made up the largest occupational group, accounting for 31 percent of industry employment. (See table 23.) Sales agents, associates, and representatives made up almost three-fifths of the employment in this group. Operating, maintenance, construction, repair, material handling, and powerplant workers ranked second in employment, with 144,000 or 25 percent. Clerical workers, numbering 122,000, accounted for 21 percent of total employment. Managers and officers, with 16 percent, ranked fourth. Professional occupations accounted for 4 percent, nearly half of whom were designers. Service workers accounted for 2 percent; the smallest occupational group consisted of technical workers.

Over the 1979-82 period, employment declined by 6 percent in this industry. The largest percentage employment decrease (12 percent) was in home appliance stores. Of all the major occupational groups in this industry, the operating, maintenance, construction, repair, material handling, and powerplant occupations experienced the largest percentage decrease (16 percent), and technical occupations had the largest increase in employment (139 percent).

Eating and drinking places

This industry group 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 5.0 million persons employed in eating and drinking places in 1982. This industry employed the largest number of workers in retail trade.

The majority (4.3 million) or 85 percent of the workers in this industry were in service occupations. Almost all of these (97 percent) were food service workers. (See table 24.) Managers and officers made up the second largest occupational group, with 8 percent of industry employment. Clerical workers ranked third with 212,000, or 4 percent. Most of these were cashiers. The other four major occupational groups combined accounted for only 3 percent of the employment in eating and drinking places.

Miscellaneous retail stores

Included in this industry are firms 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 1.9 million in 1982. Miscellaneous shopping goods stores (book stores; jewelry stores; hobby, toy, and game shops; sporting goods stores; etc.) employed 607,000 workers (29 percent of the industry total). Drug stores employed 490,000 (26 percent). Other retail stores (florists, cosmetic stores, cigar stores and stands, etc.) employed 14 percent, and nonstore retailers, such as mail order houses and automatic merchandising machine operators, accounted for 13 percent. Liquor stores employed 7 percent, fuel and ice dealers, 5 percent, and used merchandise stores, 3 percent.

Sales workers constituted the largest occupational group in this industry, with 687,000 or 36 percent of total industry employment. (See table 25.) Clerical occupations accounted for 437,000 or 23 percent. Ranking third were operating, maintenance, construction, repair, material handling, and powerplant occupations, with 17 percent of industry employment. Managers and officers accounted for 13 percent; professional workers, 8 percent. Half of the professional workers were pharmacists. Service workers made up only 3 percent, and technical workers less than 1 percent, of total employment.

Table 16. Retail trade: Percent distribution of employment in major occupational groups by industry, 1982

Industry	Total	Managers and officers	Professional workers	Technical workers	Service workers	Operating, maintenance, construction, repair, material handling, and power-plant workers	Clerical workers	Sales workers
Total	15,246,080	1,656,940	346,460	24,400	4,789,590	2,453,820	2,661,480	3,313,390
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	3.93	5.30	5.02	3.28	.18	6.93	5.30	5.24
General merchandise stores	14.11	11.92	15.65	19.10	2.61	9.75	19.89	30.20
Food stores	16.18	15.54	10.08	9.75	5.72	27.68	30.29	12.45
Automotive dealers and gasoline service stations	10.74	14.65	5.61	9.18	.97	31.60	10.96	7.85
Apparel and accessory stores	6.12	9.58	6.99	2.01	.27	3.04	4.61	16.29
Furniture, home furnishings, and equipment stores	3.76	5.39	6.98	11.93	.28	5.86	4.59	5.37
Eating and drinking places	32.70	22.97	6.20	3.77	88.83	2.21	7.95	1.87
Miscellaneous retail	12.46	14.67	43.47	40.98	1.14	12.94	16.41	20.72

Table 17. Retail trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 52-59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	15,246,170	100.00	--	--
Managers and officers	1,656,920	10.87	n.a.	n.a.
Director, food and beverage and/or catering manager	30,960	.20	9	1
Manager, merchandise	93,600	.61	2	13
Manager, retail store	933,700	6.12	1	69
Manager, automobile service department	55,590	.36	2	6
Manager, automotive parts department	36,990	.24	3	5
Wholesaler	1,720	.01	14	(³)
Manager, eating and/or drinking establishment	317,800	2.08	2	8
All other managers	186,560	1.22	n.a.	n.a.
Professional occupations	346,510	2.27	n.a.	n.a.
Systems analyst, electronic data processing	3,140	.02	11	(³)
Purchasing agent and/or buyer	3,470	.02	10	1
Buyer, retail and/or wholesale trade	118,080	.77	2	12
Accountants and auditors	33,540	.22	3	5
Commercial artist	5,800	.04	6	1
Writer and/or editor	2,330	.02	7	(³)
Musician, instrumental	9,950	.07	17	(³)
Personnel and labor relations specialists	9,260	.06	4	2
Pharmacist	79,750	.52	2	4
Public relations practitioner	1,600	.01	12	(³)
Designer	56,240	.37	4	4
All other professional workers	23,350	.15	n.a.	n.a.
Technical occupations	24,410	.16	n.a.	n.a.
Computer programmer	5,150	.03	7	1
Drafter	1,600	.01	16	(³)
Electrical and electronic technicians	3,160	.02	20	(³)
Pharmacy helper	7,050	.05	9	(³)
All other technicians	7,450	.05	n.a.	n.a.
Service occupations	4,789,580	31.41	n.a.	n.a.
Janitors, porters and cleaners	187,600	1.23	3	15
Guards and doorkeepers	28,170	.18	7	2
Food service workers, total	4,471,780	29.33	n.a.	n.a.
Baker, bread and/or pastry	45,440	.30	5	2
Bartender	251,510	1.65	4	4
Dining room attendant, bartender helper, or cafeteria attendant	182,700	1.20	5	3
Butcher and/or meat cutter	133,800	.88	2	4
Host/hostess, restaurant, lounge or coffee shop	98,980	.65	5	3
Kitchen helper	417,490	2.74	3	6
Waiter/waitress	1,254,570	8.23	1	7
Counter attendant, lunchroom, coffee shop, or cafeteria	193,930	1.27	8	2
Cook, short order and/or specialty fast foods	363,040	2.38	4	4
Cook, restaurant	313,700	2.06	3	5
Food preparation and service worker, fast food restaurant	1,087,200	7.13	1	3
Pantry, sandwich and/or coffee maker	55,720	.37	7	1
Cook, institution or cafeteria	12,300	.08	26	(³)
All other food service workers	61,400	.40	n.a.	n.a.
Cosmetologist and/or hairstylist	15,690	.10	6	1
Supervisor, nonworking-service only	34,140	.22	7	1
Checker, fitting room	8,150	.05	5	1
Store detective	17,750	.12	3	1
All other service workers	26,300	.17	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	2,453,850	16.09	n.a.	n.a.
Mechanics and repairers, total	455,030	2.98	n.a.	n.a.
Mechanic, automotive	282,590	1.85	1	10
Automotive body repairer	41,380	.27	3	2
Bicycle repairer	5,830	.04	15	(³)
Diesel mechanic	8,860	.06	11	1

See footnotes at end of table.

Table 17. Retail trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 52-59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Gasoline engine or mower repairer	5,850	0.04	8	1
Marine mechanic and/or repairer	2,990	.02	11	(³)
Mechanic, maintenance	7,790	.05	6	1
Office machine servicer and/or cash register servicer	2,300	.02	22	(³)
Refrigeration mechanic and/or air conditioning mechanic	4,040	.03	10	1
Television servicer and repairer, radio repairer and/or tape recorder repairer	20,230	.13	6	2
Coin machine servicer and/or vending machine repairer	15,900	.10	9	1
Motorboat mechanic	4,640	.03	8	(³)
Gas and electric appliance repairer	35,390	.23	5	3
All other mechanics and repairers	17,240	.11	n.a.	n.a.
Truck driver	94,140	.62	3	8
Automobile repair service estimator	5,620	.04	8	1
Cabinetmaker	8,560	.06	13	(³)
Carpet cutter and/or carpet layer	11,150	.07	9	1
Carpenter	14,060	.09	8	1
Cleaner, vehicle	43,470	.29	4	3
Delivery and/or route worker	179,300	1.18	4	13
Merchandise displayer and window trimmer	13,560	.09	3	2
Electrician	1,890	.01	13	(³)
Supervisor, nonworking	40,660	.27	3	5
Glazier	12,250	.08	9	1
Industrial truck operator	14,610	.10	5	1
Jeweler and/or silversmith	8,710	.06	9	1
Machinist	1,630	.01	16	(³)
Maintenance repairer, general utility	54,250	.36	4	6
Helper, trades	32,430	.21	5	2
Oil burner installer and servicer	10,410	.07	5	1
Musical instrument repairer	3,160	.02	16	(³)
Order filler	35,450	.23	6	2
Painter, automotive	13,240	.09	5	1
Painter, maintenance	2,180	.01	14	(³)
Production packager, hand or machine	31,120	.20	6	1
Custom sewer	3,050	.02	14	(³)
Sewing machine operator, regular equipment-garment	3,060	.02	23	(³)
Sewing machine operator, regular equipment-nongarment	3,480	.02	17	(³)
Sewing machine operator, special and/or automatic equipment-nongarment	4,120	.03	18	(³)
Alteration tailor	36,500	.24	4	4
Tire fabricator and/or repairer	7,650	.05	11	(³)
Watchmaker	4,220	.03	11	1
Furniture assembler and installer	5,460	.04	11	1
Bagger	184,800	1.21	3	2
Service station attendant, fuel pump attendant and/or lubricator	246,490	1.62	2	5
Tire changer	50,840	.33	4	3
Optician, dispensing and/or optical mechanic	12,720	.08	19	(³)
Household appliance installer	9,350	.06	8	1
Stock clerk, sales floor	555,720	3.64	2	13
Furniture finisher	4,400	.03	9	1
Furniture upholsterer	1,990	.01	17	(³)
Baker	18,370	.12	8	1
Cake decorator	4,110	.03	10	(³)
Doughnut maker and/or doughnut machine operator	11,030	.07	8	1
Wood machinist	7,300	.05	11	1
Ceiling tile installer and/or floor layer	2,260	.01	20	(³)
Truck driver helper	3,090	.02	18	(³)
Mobile home repairer	4,940	.03	9	1
Mobile home set-up operator	5,340	.04	8	1
Picture framer	2,000	.01	23	(³)

See footnotes at end of table.

Table 17. Retail trade: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 52-59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
All other skilled craft and kindred workers	25,880	0.17	n.a.	n.a.
All other operatives and semiskilled workers	44,180	.29	n.a.	n.a.
All other laborers and unskilled workers	104,620	.69	n.a.	n.a.
Clerical occupations	2,661,530	17.46	n.a.	n.a.
Office clerical workers, total	2,288,650	15.01	n.a.	n.a.
Bookkeeping and/or billing machine operator	16,800	.11	4	3
Computer operator	8,780	.06	5	1
Keypunch operator	13,480	.09	5	1
Peripheral EDP equipment operator	4,410	.03	7	(³)
All other office machine operators	7,280	.05	n.a.	n.a.
Accounting clerk	118,880	.78	2	13
Bookkeeper, hand	215,640	1.41	1	28
Adjustment clerk	31,340	.21	5	1
Cashier	1,260,030	8.26	1	26
Collector	12,180	.08	14	1
File clerk	7,750	.05	7	1
General office clerk	252,660	1.66	2	22
Order clerk	37,010	.24	5	2
Credit authorizer	12,970	.09	7	1
Payroll and/or timekeeping clerk	10,060	.07	4	2
Personnel clerk	7,060	.05	4	2
Procurement clerk	2,280	.01	15	(³)
Credit reference clerk	6,890	.05	7	1
Receptionist	5,450	.04	8	1
Secretary	100,680	.66	2	13
Service clerk	40,380	.26	3	3
Switchboard operator	12,820	.08	5	2
Switchboard operator/receptionist	8,780	.06	5	2
Typist	10,190	.07	7	1
Clerical supervisor, office or plant	26,100	.17	4	3
All other office clerical workers	58,750	.39	n.a.	n.a.
Plant clerical workers, total	372,880	2.45	n.a.	n.a.
Shipping packer	23,600	.15	5	1
Shipping and/or receiving clerk	70,130	.46	3	9
Stock clerk, stockroom, warehouse or storage yard	221,370	1.45	2	14
Dispatcher, vehicle, service or work	2,870	.02	8	1
Marking clerk	46,070	.30	4	2
All other plant clerical workers	8,840	.06	n.a.	n.a.
Sales occupations	3,313,370	21.73	n.a.	n.a.
Sales agent, associate, and/or representative	1,006,310	6.60	1	32
Sales clerk	2,203,810	14.45	1	42
Demonstrator	6,680	.04	18	(³)
Sales clerk supervisor	47,660	.31	6	1
All other sales workers	48,910	.32	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 18. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 52)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	599,580	100.00	--	--
Managers and officers	87,760	14.64	n.a.	n.a.
Manager, merchandise	14,700	2.45	4	24
Manager, retail store	66,770	11.14	1	81
Wholesaler	230	.04	26	(³)
All other managers	6,060	1.01	n.a.	n.a.
Professional occupations	17,400	2.90	n.a.	n.a.
Engineers	160	.03	n.a.	n.a.
Systems analyst, electronic data processing	110	.02	17	(³)
Purchasing agent and/or buyer	170	.03	17	(³)
Buyer, retail and/or wholesale trade	11,030	1.84	4	18
Accountants and auditors	4,470	.75	6	11
Commercial artist	190	.03	17	(³)
Writer and/or editor	90	.02	31	(³)
Personnel and labor relations specialists	180	.03	13	(³)
Designer	630	.11	19	1
All other professional workers	370	.06	n.a.	n.a.
Technical occupations	800	.13	n.a.	n.a.
Computer programmer	190	.03	15	(³)
Drafter	460	.08	23	1
Electrical and electronic technicians	80	.01	40	(³)
All other technicians	70	.01	n.a.	n.a.
Service occupations	8,630	1.44	n.a.	n.a.
Janitors, porters, and cleaners	6,920	1.15	6	13
Guards and doorkeepers	570	.10	20	1
Food service workers	140	.02	n.a.	n.a.
Store detective	60	.01	29	(³)
All other service workers	940	.16	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	170,090	28.37	n.a.	n.a.
Mechanics and repairers, total	8,170	1.36	n.a.	n.a.
Mechanic, automotive	580	.10	18	1
Diesel mechanic	60	.01	49	(³)
Farm equipment mechanic	160	.03	46	(³)
Gasoline engine or mower repairer	5,210	.87	8	7
Television servicer and repairer, radio repairer and/or tape recorder repairer	80	.01	41	(³)
Gas and electric appliance repairer	340	.06	29	1
All other mechanics and repairers	1,740	.29	n.a.	n.a.
Truck driver	32,820	5.47	4	25
Cabinetmaker	420	.07	42	(³)
Carpet cutter and/or carpet layer	140	.02	41	(³)
Carpenter	10,390	1.73	9	7
Delivery and/or route worker	11,920	1.99	6	13
Electrician	130	.02	47	(³)
Supervisor, nonworking	5,150	.86	6	10
Glazier	12,120	2.02	9	6
Heavy equipment operator	170	.03	41	(³)
Industrial truck operator	7,960	1.33	7	9
Maintenance repairer, general utility	5,290	.88	8	8
Helper, trades	440	.07	34	(³)
Order filler	980	.16	17	1
Painter, maintenance	980	.16	27	(³)
Plumber and/or pipefitter	310	.05	34	1
Production packager, hand or machine	140	.02	36	(³)
Welder and/or flamecutter	660	.11	35	(³)
Stock clerk, sales floor	20,450	3.41	5	19
Wood machinist	7,220	1.20	11	5
Variety saw operator	180	.03	30	(³)
Woodworking machine operator	220	.04	25	(³)
Truck driver helper	340	.06	25	(³)
Mobile home repairer	2,380	.40	10	4

See footnotes at end of table.

Table 18. Building materials, hardware, garden supply stores, and mobile home dealers: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 52)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Mobile home set-up operator	5,300	0.88	8	6
Picture framer	380	.06	31	(³)
All other skilled craft and kindred workers	3,530	.59	n.a.	n.a.
All other operatives and semiskilled workers	7,850	1.31	n.a.	n.a.
All other laborers and unskilled workers	24,050	4.01	n.a.	n.a.
Clerical occupations				
Office clerical workers, total	141,140	23.54	n.a.	n.a.
Office clerical workers, total	103,580	17.28	n.a.	n.a.
Bookkeeping and/or billing machine operator	180	.03	29	(³)
Computer operator	430	.07	13	1
Keypunch operator	520	.09	22	1
Peripheral EDP equipment operator	100	.02	38	(³)
All other office machine operators	200	.03	n.a.	n.a.
Accounting clerk	11,590	1.93	5	18
Bookkeeper, hand	20,990	3.50	3	40
Adjustment clerk	340	.06	24	(³)
Cashier	31,820	5.31	4	22
Collector	180	.03	25	(³)
File clerk	190	.03	13	1
General office clerk	23,100	3.85	4	30
Credit authorizer	190	.03	23	1
Order clerk	470	.08	18	1
Payroll and/or timekeeping clerk	340	.06	14	1
Personnel clerk	120	.02	23	(³)
Procurement clerk	170	.03	29	(³)
Credit reference clerk	100	.02	16	(³)
Receptionist	100	.02	37	(³)
Secretary	10,140	1.69	4	19
Service clerk	190	.03	46	(³)
Switchboard operator	170	.03	18	(³)
Switchboard operator/receptionist	230	.04	14	1
Typist	240	.04	17	(³)
Clerical supervisor, office or plant	700	.12	13	1
All other office clerical workers	780	.13	n.a.	n.a.
Plant clerical workers, total				
Plant clerical workers, total	37,560	6.26	n.a.	n.a.
Shipping and/or receiving clerk	9,540	1.59	6	16
Stock clerk, stockroom, warehouse or storage yard	27,120	4.52	4	23
Dispatcher, vehicle, service or work	280	.05	15	1
Marking clerk	220	.04	18	(³)
All other plant clerical workers	400	.07	n.a.	n.a.
Sales occupations				
Sales occupations	173,760	28.98	n.a.	n.a.
Sales agent, associate, and/or representative	92,110	15.36	3	54
Sales clerk	79,510	13.26	3	37
Sales clerk supervisor	1,080	.18	22	(³)
All other sales workers	1,060	.18	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 19. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 53)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	2,150,570	100.00	--	--
Managers and officers	197,430	9.18	n.a.	n.a.
Director, food and beverage and/or catering manager	280	.01	15	2
Manager, merchandise	22,260	1.04	5	30
Manager, retail store	88,200	4.10	3	88
Manager, automobile service department	3,060	.14	4	12
Manager, automotive parts department	1,400	.07	7	7
Wholesaler	270	.01	36	(³)
Manager, eating and/or drinking establishment	2,200	.10	5	10
All other managers	79,760	3.71	n.a.	n.a.
Professional occupations	54,220	2.52	n.a.	n.a.
Engineers	420	.02	n.a.	n.a.
Mathematical scientists	460	.02	n.a.	n.a.
Systems analyst, electronic data processing	1,190	.06	18	2
Purchasing agent and/or buyer	1,020	.05	12	2
Buyer, retail and/or wholesale trade	28,720	1.34	6	16
Accountants and auditors	3,320	.15	14	5
Commercial artist	3,070	.14	7	6
Writer and/or editor	1,550	.07	8	3
Lawyer	300	.01	30	(³)
Personnel and labor relations specialists	5,890	.27	4	18
Pharmacist	1,490	.07	16	2
Public relations practitioner	620	.03	18	2
Designer	2,360	.11	8	5
All other professional workers	3,810	.18	n.a.	n.a.
Technical occupations	4,660	.22	n.a.	n.a.
Computer programmer	2,030	.09	10	2
Drafter	570	.03	33	1
Electrical and electronic technicians	390	.02	24	(³)
Pharmacy helper	570	.03	21	1
All other technicians	1,100	.05	n.a.	n.a.
Service occupations	124,990	5.81	n.a.	n.a.
Janitors, porters and cleaners	32,990	1.53	3	36
Guards and doorkeepers	8,120	.38	6	11
Food service workers, total	42,030	1.95	n.a.	n.a.
Baker, bread and/or pastry	400	.02	16	1
Dining room attendant, bartender helper, or cafeteria attendant	2,090	.10	8	3
Butcher and/or meat cutter	560	.03	33	1
Host/hostess, restaurant, lounge or coffee shop	1,720	.08	7	5
Kitchen helper	5,230	.24	7	7
Waiter/waitress	15,100	.70	6	10
Counter attendant, lunchroom, coffee shop, or cafeteria	6,890	.32	7	8
Cook, short order and/or specialty fast foods	3,350	.16	8	7
Cook, restaurant	2,780	.13	8	7
Food preparation and service worker, fast food restaurant	1,470	.07	16	1
Pantry, sandwich and/or coffee maker	650	.03	11	2
Cook, institution or cafeteria	560	.03	18	1
All other food service workers	1,230	.06	n.a.	n.a.
Cosmetologist and/or hairstylist	13,830	.64	6	6
Supervisor, nonworking-service only	1,480	.07	12	5
Checker, fitting room	7,530	.35	5	9
Store detective	14,720	.68	3	19
All other service workers	4,290	.20	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	239,200	11.12	n.a.	n.a.
Mechanics and repairers, total	45,530	2.12	n.a.	n.a.
Mechanic, automotive	10,680	.50	5	11
Bicycle repairer	720	.03	8	4
Laundry machine mechanic	770	.04	17	1

See footnotes at end of table.

Table 19. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 53)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Mechanic, maintenance	6,410	0.30	6	7
Television servicer and repairer, radio repairer and/or tape recorder repairer	1,380	.06	13	2
Gas and electric appliance repairer	18,490	.86	8	6
All other mechanics and repairers	7,080	.33	n.a.	n.a.
Truck driver	4,640	.22	8	7
Carpet cutter and/or carpet layer	250	.01	24	1
Carpenter	1,020	.05	11	3
Delivery and/or route worker	3,300	.15	12	6
Merchandise displayer and window trimmer	9,490	.44	3	20
Electrician	830	.04	13	2
Supervisor, nonworking	6,310	.29	5	13
Industrial truck operator	2,050	.10	12	2
Maintenance repairer, general utility	7,960	.37	6	14
Helper, trades	1,080	.05	12	2
Order filler	3,730	.17	12	3
Painter, maintenance	520	.02	11	2
Production packager, hand or machine	550	.03	19	1
Custom sewer	1,330	.06	12	2
Sewing machine operator, regular equipment-garment	250	.01	25	(³)
Stationary engineer	710	.03	9	2
Alteration tailor	7,690	.36	5	16
Watchmaker	270	.01	11	1
Bagger	870	.04	29	(³)
Service station attendant, fuel pump attendant and/or lubricator	1,470	.07	12	3
Tire changer	8,610	.40	5	9
Optician, dispensing and/or optical mechanic	370	.02	26	1
Drapery and upholstery measurer	380	.02	14	1
Household appliance installer	1,630	.08	14	2
Stock clerk, sales floor	88,810	4.13	5	36
Furniture finisher	820	.04	17	3
All-around tailor	770	.04	14	1
Baker	240	.01	27	(³)
Truck driver helper	880	.04	19	1
All other skilled craft and kindred workers	11,480	.53	n.a.	n.a.
All other operatives and semiskilled workers	7,120	.33	n.a.	n.a.
All other laborers and unskilled workers	18,240	.85	n.a.	n.a.
Clerical occupations	529,290	24.61	n.a.	n.a.
Office clerical workers, total	404,730	18.82	n.a.	n.a.
Bookkeeping and/or billing machine operator	2,020	.09	12	2
Computer operator	2,820	.13	10	4
Keypunch operator	5,760	.27	7	5
Peripheral EDP equipment operator	2,130	.10	9	4
All other office machine operators	3,900	.18	n.a.	n.a.
Stenographer	750	.03	26	1
Accounting clerk	21,520	1.00	5	21
Bookkeeper, hand	11,380	.53	5	25
Adjustment clerk	26,570	1.24	5	17
Cashier	137,070	6.37	4	58
Collector	6,330	.29	23	4
File clerk	3,690	.17	12	3
General office clerk	45,920	2.14	4	33
Credit authorizer	10,570	.49	8	9
Order clerk	10,490	.49	9	8
Payroll and/or timekeeping clerk	3,910	.18	6	12
Personnel clerk	4,720	.22	4	15
Procurement clerk	1,260	.06	25	1
Credit reference clerk	4,900	.23	8	5
Receptionist	970	.05	21	3
Secretary	14,990	.70	6	22
Service clerk	16,720	.78	5	11
Switchboard operator	8,710	.41	4	15
Switchboard operator/receptionist	3,480	.16	8	6

See footnotes at end of table.

Table 19. General merchandise stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 53)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Typist	3,970	0.18	14	4
Clerical supervisor, office or plant	12,740	.59	6	17
All other office clerical workers	37,440	1.74	n.a.	n.a.
Plant clerical workers, total	124,560	5.79	n.a.	n.a.
Shipping packer	10,620	.49	6	11
Shipping and/or receiving clerk	21,630	1.01	5	31
Stock clerk, stockroom, warehouse or storage yard	51,280	2.38	4	34
Dispatcher, vehicle, service or work	610	.03	11	2
Marking clerk	37,940	1.76	4	21
All other plant clerical workers	2,480	.12	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	1,000,780	46.54	n.a.	n.a.
Sales clerk	269,590	12.54	2	31
Demonstrator	664,820	30.91	1	74
Sales clerk supervisor	4,490	.21	17	4
All other sales workers	35,790	1.66	6	14
	26,090	1.21	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 20. Food stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 54)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	2,466,270	100.00	--	--
Managers and officers	257,440	10.44	n.a.	n.a.
Manager, merchandise	5,220	.21	13	4
Manager, retail store	230,920	9.36	2	78
Wholesaler	270	.01	24	(³)
Manager, eating and/or drinking establishment	540	.02	18	1
All other managers	20,490	.83	n.a.	n.a.
Professional occupations	34,920	1.42	n.a.	n.a.
Engineers	270	.01	n.a.	n.a.
Systems analyst, electronic data processing	660	.03	26	1
Purchasing agent and/or buyer	470	.02	32	1
Buyer, retail and/or wholesale trade	22,650	.92	6	14
Accountants and auditors	2,040	.08	15	2
Commercial artist	600	.02	17	1
Personnel and labor relations specialists	840	.03	14	2
Pharmacist	2,910	.12	11	2
Designer	490	.02	32	1
All other professional workers	3,990	.16	n.a.	n.a.
Technical occupations	2,380	.10	n.a.	n.a.
Computer programmer	680	.03	17	1
Drafter	270	.01	34	(³)
Pharmacy helper	490	.02	18	1
All other technicians	940	.04	n.a.	n.a.
Service occupations	273,840	11.10	n.a.	n.a.
Janitors, porters and cleaners	22,870	.93	5	19
Guards and doorkeepers	2,890	.12	14	1
Food service workers, total	242,760	9.84	n.a.	n.a.
Baker, bread and/or pastry	27,040	1.10	6	14
Dining room attendant, bartender helper, or cafeteria attendant	900	.04	34	1
Butcher and/or meat cutter	129,810	5.26	2	37
Host/hostess, restaurant, lounge or coffee shop	320	.01	31	(³)
Kitchen helper	10,240	.42	10	7
Waiter/waitress	14,440	.59	12	4
Counter attendant, lunchroom, coffee shop, or cafeteria	17,660	.72	23	5
Cook, short order and/or specialty fast foods ..	11,640	.47	13	6
Cook, restaurant	4,450	.18	14	1
Food preparation and service worker, fast food restaurant	3,020	.12	19	1
Pantry, sandwich and/or coffee maker	8,290	.34	14	1
Cook, institution or cafeteria	600	.02	28	(³)
All other food service workers	14,350	.58	n.a.	n.a.
Supervisor, nonworking--service only	490	.02	24	(³)
Store detective	1,640	.07	19	1
All other service workers	3,190	.13	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	679,100	27.54	n.a.	n.a.
Mechanics and repairers, total	2,180	.09	n.a.	n.a.
Mechanic, automotive	820	.03	19	1
Diesel mechanic	540	.02	19	(³)
Refrigeration mechanic and/or air conditioning mechanic	360	.01	19	1
All other mechanics and repairers	460	.02	n.a.	n.a.
Truck driver	12,750	.52	9	5
Carpenter	300	.01	25	1
Delivery and/or route worker	9,510	.39	15	7
Supervisor, nonworking	3,140	.13	26	1
Industrial truck operator	3,030	.12	15	1
Maintenance repairer, general utility	5,800	.24	9	6
Helper, trades	270	.01	29	(³)
Order filler	7,580	.31	17	1
Production packager, hand or machine	28,700	1.16	6	14

See footnotes at end of table.

Table 20. Food stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 54)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
Bagger	183,710	7.45	3	23
Service station attendant, fuel pump attendant and/or lubricator	580	.02	41	(³)
Stock clerk, sales floor	368,310	14.93	2	40
Baker	16,800	.68	8	9
Cake decorator	3,660	.15	10	4
Doughnut maker and/or doughnut machine operator	10,670	.43	7	9
Truck driver helper	380	.02	35	(³)
All other skilled craft and kindred workers	1,600	.06	n.a.	n.a.
All other operatives and semiskilled workers	3,720	.15	n.a.	n.a.
All other laborers and unskilled workers	16,410	.67	n.a.	n.a.
Clerical occupations	806,040	32.68	n.a.	n.a.
Office clerical workers, total	746,780	30.28	n.a.	n.a.
Bookkeeping and/or billing machine operator	370	.02	29	(³)
Computer operator	1,000	.04	11	2
Keypunch operator	1,360	.06	16	1
Peripheral EDP equipment operator	410	.02	23	(³)
All other office machine operators	510	.02	n.a.	n.a.
Accounting clerk	14,380	.58	12	8
Bookkeeper, hand	26,660	1.08	4	24
Adjustment clerk	970	.04	21	1
Cashier	654,340	26.53	1	54
File clerk	340	.01	34	1
General office clerk	21,410	.87	6	13
Order clerk	1,380	.06	30	1
Payroll and/or timekeeping clerk	1,180	.05	9	2
Personnel clerk	670	.03	14	1
Procurement clerk	310	.01	23	(³)
Receptionist	530	.02	21	1
Secretary	9,750	.40	8	9
Service clerk	1,150	.05	21	1
Switchboard operator/receptionist	460	.02	15	1
Typist	1,010	.04	18	1
Clerical supervisor, office or plant	2,510	.10	18	2
All other office clerical workers	6,080	.25	n.a.	n.a.
Plant clerical workers, total	59,260	2.40	n.a.	n.a.
Shipping packer	1,730	.07	29	1
Shipping and/or receiving clerk	3,460	.14	10	3
Weigher, recordkeeping	250	.01	37	(³)
Stock clerk, stockroom, warehouse or storage yard	46,450	1.88	7	12
Dispatcher, vehicle, service or work	310	.01	17	1
Marking clerk	3,670	.15	20	1
All other plant clerical workers	3,390	.14	n.a.	n.a.
Sales occupations	412,550	16.73	n.a.	n.a.
Sales agent, associate, and/or representative	27,740	1.12	17	8
Sales clerk	368,100	14.93	3	53
Demonstrator	1,200	.05	21	1
Sales clerk supervisor	4,200	.17	24	1
All other sales workers	11,310	.46	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 21. Automotive dealers and gasoline service stations: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 55)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,637,690	100.00	--	--
Managers and officers	242,780	14.82	n.a.	n.a.
Manager, merchandise	900	.05	20	1
Manager, retail store	132,450	8.09	2	65
Manager, automobile service department	52,210	3.19	2	37
Manager, automotive parts department	35,200	2.15	3	29
Wholesaler	390	.02	23	1
Manager, eating and/or drinking establishment	320	.02	25	(³)
All other managers	21,310	1.30	n.a.	n.a.
Professional occupations	19,440	1.19	n.a.	n.a.
Buyer, retail and/or wholesale trade	250	.02	28	(³)
Accountants and auditors	17,890	1.09	4	17
All other professional workers	1,300	.08	n.a.	n.a.
Technical occupations	2,240	.14	n.a.	n.a.
Computer programmer	230	.01	21	(³)
Electrical and electronic technicians	240	.01	47	(³)
All other technicians	1,770	.11	n.a.	n.a.
Service occupations	46,240	2.82	n.a.	n.a.
Janitors, porters, and cleaners	21,650	1.32	4	14
Guards and doorkeepers	480	.03	30	1
Dining room attendant, bartender helper, or cafeteria attendant	280	.02	36	(³)
Kitchen helper	3,790	.23	16	1
Waiter/waitress	10,180	.62	14	2
Cook, short order and/or specialty fast foods	5,780	.35	16	2
Cook, restaurant	1,200	.07	27	(³)
All other food service workers	910	.06	n.a.	n.a.
Supervisor, nonworking-service only	180	.01	34	(³)
All other service workers	1,790	.11	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	775,370	47.35	n.a.	n.a.
Mechanics and repairers, total	323,600	19.76	n.a.	n.a.
Mechanic, aircraft	1,220	.07	13	(³)
Mechanic, automotive	262,410	16.02	1	57
Automotive body repairer	41,070	2.51	3	15
Diesel mechanic	7,960	.49	12	4
Gasoline engine or mower repairer	200	.01	47	(³)
Marine mechanic and/or repairer	2,950	.18	11	2
Mechanic, maintenance	170	.01	31	(³)
Motorboat mechanic	4,550	.28	8	3
Gas and electric appliance repairer	450	.03	38	(³)
All other mechanics and repairers	2,620	.16	n.a.	n.a.
Truck driver	13,840	.85	8	7
Automobile repair service estimator	5,430	.33	8	5
Carpenter	340	.02	26	(³)
Cleaner, vehicle	43,400	2.65	4	21
Delivery and/or route worker	18,550	1.13	6	11
Supervisor, nonworking	14,280	.87	5	12
Machinist	690	.04	29	1
Maintenance repairer, general utility	7,970	.49	8	6
Helper, trades	28,020	1.71	5	14
Order filler	690	.04	34	(³)
Painter, automotive	13,200	.81	5	9
Painter, maintenance	200	.01	30	(³)
Tire fabricator and/or repairer	7,370	.45	11	3
Service station attendant, fuel pump attendant and/or lubricator	240,340	14.68	2	28
Tire changer	41,900	2.56	5	14
Stock clerk, sales floor	950	.06	27	(³)
Mobile home repairer	2,560	.16	13	2
All other skilled craft and kindred workers	1,010	.06	n.a.	n.a.
All other operatives and semiskilled workers	3,550	.22	n.a.	n.a.
All other laborers and unskilled workers	7,480	.46	n.a.	n.a.

See footnotes at end of table.

Table 21. Automotive dealers and gasoline service stations: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 55)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Clerical occupations	291,610	17.81	n.a.	n.a.
Office clerical workers, total	251,120	15.33	n.a.	n.a.
Bookkeeping and/or billing machine operator	510	.03	18	1
Computer operator	760	.05	16	1
Keypunch operator	580	.04	16	1
Peripheral EDP equipment operator	360	.02	26	(³)
Accounting clerk	22,150	1.35	4	18
Bookkeeper, hand	43,160	2.64	3	34
Adjustment clerk	260	.02	28	(³)
Cashier	89,350	5.46	5	24
Collector	660	.04	25	1
File clerk	880	.05	13	1
General office clerk	47,450	2.90	3	30
Credit authorizer	220	.01	24	(³)
Order clerk	560	.03	28	(³)
Payroll and/or timekeeping clerk	1,000	.06	11	2
Personnel clerk	200	.01	21	(³)
Credit reference clerk	210	.01	27	(³)
Receptionist	480	.03	27	1
Secretary	16,750	1.02	4	16
Service clerk	19,630	1.20	5	13
Switchboard operator	1,020	.06	13	1
Switchboard operator/receptionist	1,070	.07	13	2
Typist	920	.06	15	1
Clerical supervisor, office or plant	630	.04	21	1
All other office clerical workers	2,310	.14	n.a.	n.a.
Plant clerical workers, total	40,490	2.47	n.a.	n.a.
Shipping packer	300	.02	21	(³)
Shipping and/or receiving clerk	780	.05	20	1
Stock clerk, stockroom, warehouse or storage yard	38,200	2.33	4	22
Dispatcher, vehicle, service or work	790	.05	14	1
All other plant clerical workers	420	.03	n.a.	n.a.
Sales occupations	260,010	15.88	n.a.	n.a.
Sales agent, associate, and/or representative	199,430	12.18	2	47
Sales clerk	57,220	3.49	5	17
Sales clerk supervisor	870	.05	29	(³)
All other sales workers	2,490	.15	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 22. Apparel and accessory stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 56)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	933,620	100.00	--	--
Managers and officers	158,760	17.00	n.a.	n.a.
Manager, merchandise	12,800	1.37	5	16
Manager, retail store	137,490	14.73	1	86
All other managers	8,470	.91	n.a.	n.a.
Professional occupations	24,230	2.60	n.a.	n.a.
Systems analyst, electronic data processing	250	.03	21	(³)
Purchasing agent and/or buyer	140	.01	33	(³)
Buyer, retail and/or wholesale trade	20,330	2.18	5	19
Accountants and auditors	930	.10	11	1
Commercial artist	640	.07	15	1
Writer and/or editor	130	.01	26	(³)
Personnel and labor relations specialists	500	.05	11	1
Designer	300	.03	24	(³)
All other professional workers	1,010	.11	n.a.	n.a.
Technical occupations	490	.05	n.a.	n.a.
Computer programmer	410	.04	15	1
All other technicians	80	.01	n.a.	n.a.
Service occupations	12,980	1.39	n.a.	n.a.
Janitors, porters, and cleaners	8,290	.89	5	11
Guards and doorkeepers	790	.08	16	1
Waiter/waitress	550	.06	33	(³)
Counter attendant, lunchroom, coffee shop, or cafeteria	140	.01	45	(³)
All other food service workers	510	.05	n.a.	n.a.
Cosmetologist and/or hairstylist	860	.09	28	(³)
Checker, fitting room	520	.06	20	(³)
Store detective	710	.08	16	1
All other service workers	610	.07	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	74,540	7.98	n.a.	n.a.
Truck driver	550	.06	15	1
Delivery and/or route worker	2,100	.22	15	3
Merchandise displayer and window trimmer	3,640	.39	8	6
Supervisor, nonworking	290	.03	22	1
Maintenance repairer, general utility	1,370	.15	12	2
Order filler	830	.09	34	(³)
Custom sewer	1,470	.16	25	1
Sewing machine operator, regular equipment-garment	2,250	.24	28	(³)
Sewing machine operator, special equipment and/or automatic equipment-garment	410	.04	42	(³)
Alteration tailor	28,570	3.06	4	20
Custom tailor	290	.03	45	(³)
Stock clerk, sales floor	24,980	2.68	7	13
All-around tailor	500	.05	22	(³)
All other skilled craft and kindred workers	830	.09	n.a.	n.a.
All other operatives and semiskilled workers	4,300	.46	n.a.	n.a.
All other laborers and unskilled workers	2,160	.23	n.a.	n.a.
Clerical occupations	122,790	13.15	n.a.	n.a.
Office clerical workers, total	94,520	10.12	n.a.	n.a.
Bookkeeping and/or billing machine operator	310	.03	33	(³)
Computer operator	730	.08	15	1
Keypunch operator	1,090	.12	13	1
Peripheral EDP equipment operator	260	.03	21	(³)
Accounting clerk	7,920	.85	6	9
Bookkeeper, hand	15,830	1.70	4	23
Adjustment clerk	590	.06	20	(³)
Cashier	38,480	4.12	4	18
Collector	830	.09	16	1
File clerk	330	.04	25	(³)

See footnotes at end of table.

Table 22. Apparel and accessory stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 56)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
General office clerk	16,150	1.73	6	14
Credit authorizer	900	.10	12	1
Order clerk	450	.05	34	(³)
Payroll and/or timekeeping clerk	700	.07	14	1
Personnel clerk	330	.04	10	1
Credit reference clerk	600	.06	14	1
Receptionist	130	.01	25	(³)
Secretary	4,340	.46	8	7
Service clerk	530	.06	19	(³)
Switchboard operator	460	.05	11	1
Switchboard operator/receptionist	360	.04	15	1
Typist	440	.05	16	(³)
Clerical supervisor, office or plant	810	.09	15	1
All other office clerical workers	1,950	.21	n.a.	n.a.
Plant clerical workers, total	28,270	3.03	n.a.	n.a.
Shipping packer	1,130	.12	18	1
Shipping and/or receiving clerk	11,020	1.18	8	12
Stock clerk, stockroom, warehouse or storage yard	12,570	1.35	8	9
Marking clerk	3,100	.33	12	1
All other plant clerical workers	450	.05	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	539,830	57.82	n.a.	n.a.
Sales agent, associate, and/or representative	126,930	13.60	4	27
Sales clerk	408,900	43.80	2	72
Sales clerk supervisor	2,470	.26	26	1
All other sales workers	1,530	.16	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Table 23. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 57)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	573,880	100.00	--	--
Managers and officers	89,230	15.55	n.a.	n.a.
Manager, merchandise	10,840	1.89	5	18
Manager, retail store	70,350	12.26	2	80
All other managers	8,040	1.40	n.a.	n.a.
Professional occupations	24,180	4.21	n.a.	n.a.
Engineers	80	.01	n.a.	n.a.
Systems analyst, electronic data processing	100	.02	26	(³)
Buyer, retail and/or wholesale trade	9,160	1.60	6	15
Accountants and auditors	570	.10	18	1
Commercial artist	320	.06	24	1
Writer and/or editor	70	.01	30	(³)
Musician, instrumental	330	.06	44	(³)
Personnel and labor relations specialists	100	.02	20	(³)
Public relations practitioner	60	.01	42	(³)
Designer	12,330	2.15	8	10
All other professional workers	1,060	.18	n.a.	n.a.
Technical occupations	2,910	.51	n.a.	n.a.
Computer programmer	260	.05	34	1
Engineering technicians, total	1,600	.28	n.a.	n.a.
Electrical and electronic technicians	1,510	.26	35	1
All other engineering technicians	90	.02	n.a.	n.a.
All other technicians	1,050	.18	n.a.	n.a.
Service occupations	13,560	2.36	n.a.	n.a.
Janitors, porters, and cleaners	8,600	1.50	6	15
Guards and doorkeepers	300	.05	48	(³)
Food service workers	4,190	.73	n.a.	n.a.
All other service workers	470	.08	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	143,840	25.06	n.a.	n.a.
Mechanics and repairers, total	30,850	5.38	n.a.	n.a.
Refrigeration mechanic and/or air conditioning mechanic	3,190	.56	12	4
Television servicer and repairer, radio repairer and/or tape recorder repairer	18,240	3.18	7	16
Gas and electric appliance repairer	7,860	1.37	7	11
All other mechanics and repairers	1,560	.27	n.a.	n.a.
Truck driver	7,840	1.37	7	9
Cabinetmaker	7,940	1.38	14	3
Carpet cutter and/or carpet layer	10,610	1.85	9	6
Carpenter	1,500	.26	24	2
Delivery and/or route worker	31,620	5.51	4	27
Merchandise displayer and window trimmer	150	.03	34	(³)
Electrician	460	.08	37	(³)
Supervisor, nonworking	2,990	.52	9	5
Industrial truck operator	220	.04	47	(³)
Maintenance repairer, general utility	1,990	.35	16	3
Musical instrument repairer	3,130	.55	16	4
Order filler	520	.09	31	(³)
Sewing machine operator, regular equipment- nongarment	2,890	.50	19	2
Sewing machine operator, special and/or automatic equipment-nongarment	3,550	.62	20	2
Furniture assembler and installer	5,020	.87	11	5
Drapery hanger	830	.14	24	1
Household appliance installer	7,550	1.32	10	8
Stock clerk, sales floor	7,140	1.24	10	7
Furniture finisher	3,270	.57	10	5
Furniture upholsterer	1,740	.30	18	2
Ceiling tile installer and/or floor layer	2,070	.36	22	1
Truck driver helper	790	.14	21	1
Picture framer	730	.13	45	(³)

See footnotes at end of table.

Table 23. Furniture, home furnishings, and equipment stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 57)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
All other skilled craft and kindred workers	1,280	0.22	n.a.	n.a.
All other operatives and semiskilled workers	2,420	.42	n.a.	n.a.
All other laborers and unskilled workers	4,740	.83	n.a.	n.a.
Clerical occupations	122,130	21.28	n.a.	n.a.
Office clerical workers, total	96,440	16.80	n.a.	n.a.
Bookkeeping and/or billing machine operator	100	.02	50	(³)
Computer operator	420	.07	21	1
Keypunch operator	400	.07	20	1
Peripheral EDP equipment operator	190	.03	27	(³)
All other office machine operators	100	.02	n.a.	n.a.
Accounting clerk	9,720	1.69	8	13
Bookkeeper, hand	20,360	3.55	4	34
Adjustment clerk	390	.07	33	1
Cashier	14,280	2.49	7	12
Collector	1,280	.22	20	1
File clerk	180	.03	27	(³)
General office clerk	27,150	4.73	4	30
Credit authorizer	410	.07	29	1
Order clerk	380	.07	40	1
Payroll and/or timekeeping clerk	170	.03	17	1
Personnel clerk	70	.01	25	(³)
Credit reference clerk	530	.09	22	1
Receptionist	1,670	.29	13	4
Secretary	9,800	1.71	6	16
Service clerk	590	.10	16	1
Switchboard operator	720	.13	23	2
Switchboard operator/receptionist	1,840	.32	10	4
Typist	160	.03	38	(³)
Clerical supervisor, office or plant	4,660	.81	8	9
All other office clerical workers	870	.15	n.a.	n.a.
Plant clerical workers, total	25,690	4.48	n.a.	n.a.
Shipping packer	3,110	.54	13	4
Shipping and/or receiving clerk	6,810	1.19	7	11
Stock clerk, stockroom, warehouse or storage yard	15,490	2.70	6	15
All other plant clerical workers	280	.05	n.a.	n.a.
Sales occupations	178,030	31.02	n.a.	n.a.
Sales agent, associate, and/or representative	105,680	18.41	3	55
Sales clerk	71,160	12.40	4	29
Demonstrator	220	.04	35	(³)
Sales clerk supervisor	200	.03	44	(³)
All other sales workers	770	.13	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 24. Eating and drinking places: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 58)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	4,985,150	100.00	--	--
Managers and officers	380,520	7.63	n.a.	n.a.
Director, food and beverage and/or catering manager	30,350	.61	9	12
Manager, retail store	14,300	.29	18	3
Manager, eating and/or drinking establishment	314,170	6.30	2	71
All other managers	21,700	.44	n.a.	n.a.
Professional occupations	21,470	.43	n.a.	n.a.
Purchasing agent and/or buyer	1,070	.02	23	1
Accountants and auditors	2,390	.05	23	3
Musician, instrumental	9,600	.19	18	2
Personnel and labor relations specialists	960	.02	27	2
All other professional workers	7,450	.15	n.a.	n.a.
Technical occupations	920	.02	n.a.	n.a.
Computer programmer	520	.01	49	1
All other technicians	400	.01	n.a.	n.a.
Service occupations	4,254,510	85.34	n.a.	n.a.
Janitors, porters and cleaners	66,750	1.34	7	23
Guards and doorkeepers	12,390	.25	14	3
Food service workers, total	4,133,070	82.91	n.a.	n.a.
Baker, bread and/or pastry	17,860	.36	10	7
Bartender	249,020	5.00	4	36
Dining room attendant, bartender helper, or cafeteria attendant	177,870	3.57	5	24
Butcher and/or meat cutter	3,200	.06	23	1
Host/hostess, restaurant, lounge or coffee shop	95,810	1.92	5	26
Kitchen helper	396,520	7.95	3	49
Waiter/waitress	1,210,110	24.27	1	60
Counter attendant, lunchroom, coffee shop, or cafeteria	164,810	3.31	9	10
Cook, short order and/or specialty fast foods ..	339,050	6.80	5	32
Cook, restaurant	303,610	6.09	3	43
Food preparation and service worker, fast food restaurant	1,080,020	21.66	1	28
Pantry, sandwich and/or coffee maker	44,380	.89	9	11
Cook, institution or cafeteria	10,080	.20	31	2
All other food service workers	40,730	.82	n.a.	n.a.
Supervisor, nonworking-service only	31,440	.63	8	11
All other service workers	10,860	.22	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	54,230	1.09	n.a.	n.a.
Mechanics and repairers	1,330	.03	n.a.	n.a.
Truck driver	1,580	.03	39	1
Delivery and/or route worker	24,940	.50	25	3
Supervisor, nonworking	690	.01	36	1
Maintenance repairer, general utility	14,470	.29	10	8
Baker	1,250	.03	47	1
All other skilled craft and kindred workers	1,190	.02	n.a.	n.a.
All other operatives and semiskilled workers	2,980	.06	n.a.	n.a.
All other laborers and unskilled workers	5,800	.12	n.a.	n.a.
Clerical occupations	211,660	4.25	n.a.	n.a.
Office clerical workers, total	209,200	4.20	n.a.	n.a.
Computer operator	630	.01	36	1
All other office machine operators	880	.02	n.a.	n.a.
Accounting clerk	9,690	.19	13	7
Bookkeeper, hand	31,360	.63	5	17
Cashier	132,600	2.66	6	22
General office clerk	14,330	.29	9	8
Payroll and/or timekeeping clerk	1,650	.03	16	3
Personnel clerk	560	.01	26	1
Secretary	11,320	.23	10	8
Switchboard operator	990	.02	45	(³)

See footnotes at end of table.

Table 24. Eating and drinking places: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 58)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Switchboard operator/receptionist	600	0.01	38	1
Clerical supervisor, office or plant	1,080	.02	26	1
All other office clerical workers	3,510	.07	n.a.	n.a.
Plant clerical workers, total	2,460	.05	n.a.	n.a.
Stock clerk, stockroom, warehouse or storage yard	1,820	.04	36	1
All other plant clerical workers	640	.01	n.a.	n.a.
Sales occupations	61,840	1.24	n.a.	n.a.
Sales agent, associate, and/or representative	5,060	.10	31	2
Sales clerk	55,570	1.11	13	3
All other sales workers	1,210	.02	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

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

Table 25. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982

(SIC 59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	1,899,320	100.00	--	--
Managers and officers	243,020	12.80	n.a.	n.a.
Director, food and beverage and/or catering manager	200	.01	23	(⁹)
Manager, merchandise	26,420	1.39	4	15
Manager, retail store	193,240	10.17	1	69
Wholesaler	310	.02	31	(⁹)
Manager, eating and/or drinking establishment	460	.02	21	(⁹)
All other managers	22,390	1.18	n.a.	n.a.
Professional occupations	150,600	7.93	n.a.	n.a.
Engineers	280	.01	n.a.	n.a.
Statistician	200	.01	25	(⁹)
Systems analyst, electronic data processing	470	.02	16	(⁹)
Purchasing agent and/or buyer	240	.01	19	(⁹)
Buyer, retail and/or wholesale trade	25,550	1.35	4	12
Accountants and auditors	1,920	.10	9	1
Commercial artist	860	.05	21	1
Writer and/or editor	370	.02	20	(⁹)
Optometrist	890	.05	36	(⁹)
Personnel and labor relations specialists	640	.03	10	1
Pharmacist	75,300	3.96	2	14
Public relations practitioner	290	.02	25	(⁹)
Designer	39,700	2.09	5	10
All other professional workers	3,890	.20	n.a.	n.a.
Technical occupations	10,000	.53	n.a.	n.a.
Computer programmer	820	.04	13	1
Electrical and electronic technicians	760	.04	36	(⁹)
Pharmacy helper	5,990	.32	11	1
All other technicians	2,430	.13	n.a.	n.a.
Service occupations	54,840	2.89	n.a.	n.a.
Janitors, porters and cleaners	19,530	1.03	5	10
Guards and doorkeepers	2,640	.14	13	1
Food service workers, total	26,230	1.38	n.a.	n.a.
Bartender	1,470	.08	31	(⁹)
Dining room attendant, bartender helper, or cafeteria attendant	750	.04	24	(⁹)
Host/hostess, restaurant, lounge or coffee shop	790	.04	31	(⁹)
Kitchen helper	1,410	.07	23	(⁹)
Waiter/waitress	2,780	.15	24	1
Counter attendant, lunchroom, coffee shop, or cafeteria	4,130	.22	14	1
Cook, short order and/or specialty fast foods	2,710	.14	22	1
Cook, restaurant	780	.04	28	(⁹)
Food preparation and service worker, fast food restaurant	2,510	.13	20	(⁹)
Pantry, sandwich and/or coffee maker	2,330	.12	17	(⁹)
Cook, institution or cafeteria	920	.05	24	(⁹)
All other food service workers	5,650	.30	n.a.	n.a.
Cosmetologist and/or hairstylist	830	.04	30	(⁹)
Supervisor, nonworking-service only	510	.03	16	(⁹)
Store detective	200	.01	42	(⁹)
All other service workers	4,900	.26	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations	317,450	16.71	n.a.	n.a.
Mechanics and repairers, total	43,300	2.28	n.a.	n.a.
Mechanic, automotive	7,610	.40	12	4
Bicycle repairer	4,980	.26	17	1
Mechanic, maintenance	710	.04	16	(⁹)
Office machine servicer and/or cash register servicer	2,090	.11	23	1
Coin machine servicer and/or vending machine repairer	15,550	.82	9	3
Gas and electric appliance repairer	8,230	.43	7	5

See footnotes at end of table.

Table 25. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
All other mechanics and repairers	4,130	0.22	n.a.	n.a.
Truck driver	20,120	1.06	5	8
Carpenter	210	.01	38	(³)
Delivery and/or route worker	77,360	4.07	3	21
Supervisor, nonworking	7,810	.41	7	4
Industrial truck operator	1,120	.06	16	(³)
Jeweler and/or silversmith	8,450	.44	9	3
Machinist	300	.02	34	(³)
Maintenance repairer, general utility	9,400	.49	9	4
Helper, trades	2,170	.11	34	(³)
Oil burner installer and servicer	10,280	.54	5	3
Order filler	20,880	1.10	7	5
Production packager, hand or machine	1,340	.07	27	(³)
Alteration tailor	230	.01	44	(³)
Watchmaker	3,920	.21	12	2
Service station attendant, fuel pump attendant and/or lubricator	2,560	.13	15	1
Optician, dispensing and/or optical mechanic	12,280	.65	20	1
Stock clerk, sales floor	44,740	2.36	5	10
Truck driver helper	320	.02	35	(³)
Picture framer	830	.04	35	(³)
All other skilled craft and kindred workers	7,370	.39	n.a.	n.a.
All other operatives and semiskilled workers	15,030	.79	n.a.	n.a.
All other laborers and unskilled workers	27,430	1.44	n.a.	n.a.
Clerical occupations	436,820	23.00	n.a.	n.a.
Office clerical workers, total	382,250	20.13	n.a.	n.a.
Bookkeeping and/or billing machine operator	13,050	.69	5	8
Computer operator	2,000	.11	11	1
Key punch operator	3,370	.18	9	1
Peripheral EDP equipment operator	860	.05	18	(³)
All other office machine operators	2,200	.12	n.a.	n.a.
Accounting clerk	21,900	1.15	4	12
Bookkeeper, hand	45,900	2.42	3	26
Adjustment clerk	1,690	.09	10	(³)
Cashier	162,090	8.53	3	20
Collector	1,380	.07	23	(³)
File clerk	2,010	.11	14	(³)
General office clerk	57,150	3.01	4	20
Credit authorizer	590	.03	22	(³)
Order clerk	22,820	1.20	6	7
Payroll and/or timekeeping clerk	1,120	.06	9	1
Personnel clerk	400	.02	10	1
Procurement clerk	220	.01	22	(³)
Credit reference clerk	440	.02	38	(³)
Receptionist	1,080	.06	24	1
Secretary	23,590	1.24	4	13
Service clerk	1,440	.08	20	(³)
Switchboard operator	470	.02	13	1
Switchboard operator/receptionist	750	.04	11	1
Typist	3,030	.16	10	1
Clerical supervisor, office or plant	2,950	.16	15	1
All other office clerical workers	9,750	.51	n.a.	n.a.
Plant clerical workers, total	54,570	2.87	n.a.	n.a.
Shipping packer	6,340	.33	11	1
Shipping and/or receiving clerk	16,540	.87	6	8
Stock clerk, stockroom, warehouse or storage yard	28,430	1.50	6	9
Dispatcher, vehicle, service or work	640	.03	17	1
Marking clerk	1,000	.05	38	(³)
All other plant clerical workers	1,620	.09	n.a.	n.a.
Sales occupations	686,590	36.15	n.a.	n.a.
Sales agent, associate, and/or representative	179,780	9.47	3	27

See footnotes at end of table.

Table 25. Miscellaneous retail stores: Employment, relative error, and percent of establishments reporting selected occupations, June 1982—Continued

(SIC 59)

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Sales occupations—Continued				
Sales clerk	498,540	26.25	2	49
Sales clerk supervisor	2,930	.15	30	(³)
All other sales workers	5,340	.28	n.a.	n.a.

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

State government

For this survey, State government employment includes government 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 institutions are excluded.

There were 1.7 million employees in State government in 1982, representing about 2 percent of all nonagricultural wage and salary employment in the Nation.

Professional workers, the largest occupational group, accounted for 29 percent of the employment in State government. (See table A-1.) Caseworkers and accountants and auditors were the two largest occupations in this group. Clerical workers accounted for 26 percent of the employment in State government. Typists and general office clerks had the largest employment in this major group with 5 percent and 4 percent, respectively. Service occupations ranked third, with 19 percent of total surveyed employment. Correction officers and jailers accounted for 4 percent of the employment in this group.

The remaining occupational employment was distributed as follows: Operating, maintenance, construction, repair, material handling, and powerplant workers, 11 percent; managers and officers, 9 percent; technical workers, 6 percent; and sales occupations, less than 1 percent of total surveyed employment in this industry.

Local government

For purposes of this survey, local government includes government establishments engaged in providing the same services as those listed under State government.

Employment in local government totaled 3.6 million in 1982, representing about 4 percent of all nonagricultural wage and salary employment in the Nation. (In 1979, local government employment was approximately 3.9 million.)

The two largest occupational groups in local government in 1982 were service workers and operating, maintenance, construction, repair, material handling, and powerplant workers, with about 1.1 million workers and 931,000, respectively. (See table A-2.) These two groups together accounted for 57 percent of total employment. Highway maintenance men accounted for 11 percent of the employment in operating occupations and police patrol officers were 27 percent of service worker employment.

Clerical workers accounted for 20 percent of employment in local government. Typists made up the largest occupation in this group. They accounted for 13 percent of the employment. Professional occupations ranked fourth, with 12 percent of total surveyed employment. Caseworker was the largest occupation in this major group, accounting for 12 percent of professional employment.

The remaining occupational employment was distributed as follows: Managers and officers, 9 percent; technical workers, 3 percent; and sales workers, less than 1 percent.

Table A-1. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982

Occupation	Employment ¹	Percent of total employment	Percent of establishments reporting the occupation
Total	1,748,410	100.00	--
Managers and officers	148,900	8.52	n.a.
Public administration inspectors, except construction	37,380	2.14	100
Construction inspector	5,840	.33	88
Chief executives, general administrators, and legislators	14,560	.83	98
All other managers	91,120	5.21	n.a.
Professional occupations	499,100	28.55	n.a.
Engineers, total	38,820	2.22	n.a.
Civil engineer	25,170	1.44	100
Electrical and electronic engineers	840	.05	78
Mechanical engineer	740	.04	80
Safety engineer	730	.04	59
Traffic engineer	5,180	.30	63
All other engineers	6,160	.35	n.a.
Mathematical scientists, total	5,240	.30	n.a.
Financial analyst	1,550	.09	84
Statistician	2,480	.14	94
All other mathematical scientists	1,210	.07	n.a.
Physical scientists, total	6,530	.37	n.a.
Chemist	2,770	.16	100
All other physical scientists	3,760	.22	n.a.
Life scientists, total	15,570	.89	n.a.
Agricultural scientist	1,790	.10	90
Biological scientist	6,700	.38	100
Forester and conservation scientist	4,680	.27	98
All other life scientists	2,400	.14	n.a.
Social scientists, total	16,860	.96	n.a.
Economist	3,860	.22	96
Psychologist	5,240	.30	100
Sociologist	1,400	.08	31
Urban and regional planner	3,230	.18	92
All other social scientists	3,130	.18	n.a.
Therapists, total	8,880	.51	n.a.
Physical therapist	2,140	.12	80
Occupational therapist	1,580	.09	80
Manual arts, music, and/or recreational therapist	1,460	.08	73
All other therapists	3,700	.21	n.a.
Occupational therapist	1,580	.09	80
All other therapists	3,700	.21	n.a.
Systems analyst, electronic data processing	8,040	.46	98
Audio visual specialist	880	.05	57
Claims taker, unemployment benefits	22,510	1.29	92
Speech pathologist and/or audiologist	1,400	.08	84
Teacher and/or instructor, vocational education or training	12,710	.73	86
Vocational and educational counselor	13,150	.75	100
Photographer	810	.05	94
Purchasing agent and/or buyer	2,590	.15	100
Accountants and auditors	33,430	1.91	100
Landscape architect	700	.04	88
Architect	980	.06	94
Budget analyst	3,780	.22	100
Caseworker	72,250	4.13	100
Commercial artist	920	.05	94
Dietitian and/or nutritionist	1,810	.10	100
Writer and/or editor	1,130	.06	92
Employment interviewer	22,260	1.27	96
Law clerk	3,140	.18	98
Lawyer	16,860	.96	100
Librarian, professional	2,400	.14	100
Curator, museum	430	.02	75
Nurse, professional	20,630	1.18	98
Paralegal personnel	3,500	.20	100
Personnel and labor relations specialists	10,160	.58	100
Physician and/or surgeon	5,050	.29	100

See footnotes at end of table.

Table A-1. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Percent of establishments reporting the occupation
Professional occupations—Continued			
Public relations practitioner	3,380	0.19	100
Right-of-way agent	2,320	.13	80
Veterinarian	730	.04	96
Designer	370	.02	53
Community organization worker	2,990	.17	88
Welfare investigator	3,910	.22	76
Judge	9,410	.54	92
Magistrate	1,180	.07	31
Tax examiner, collector and/or revenue agent	12,530	.72	94
Assessor	1,200	.07	53
Appraiser, real estate	2,110	.12	86
Group recreation worker	3,590	.21	82
All other professional workers	101,960	5.83	n.a.
Technical occupations			
Computer programmer	100,340	5.74	n.a.
Engineering technicians, total	8,950	.51	100
Drafter	40,270	2.30	n.a.
Electrical and electronic technicians	4,930	.28	94
Surveyor	2,360	.13	92
Traffic technician	1,870	.11	75
Civil engineering technician	2,510	.14	67
All other engineering technicians	15,830	.91	88
Science technicians	12,770	.73	n.a.
Licensed practical nurse	7,460	.43	96
Physician's assistant	10,740	.61	96
Museum technician and/or restorer	960	.05	65
Radio operator	410	.02	69
Technical assistant, library	2,500	.14	69
Medical and dental technicians and technologists	1,020	.06	78
Emergency medical technician	11,110	.64	98
All other technicians	350	.02	27
All other technicians	16,570	.95	n.a.
Service occupations			
Janitors, porters, and cleaners	330,160	18.88	n.a.
Guards and doorkeepers	25,080	1.43	98
Kitchen helper	7,350	.42	98
Cook, institution or cafeteria	4,480	.26	65
All other food service workers	5,670	.32	96
Supervisor, nonworking-service only	7,500	.43	n.a.
Nurse aide and/or orderly	11,170	.64	96
Recreation facility attendant	36,520	2.09	76
Usher, lobby attendant, ticket taker and/or drive-in theater attendant	3,610	.21	65
Forest conservation worker	590	.03	14
Fish and game wardens	7,880	.45	82
Child-care worker	5,790	.33	86
Lifeguard	9,470	.54	65
Social service aide	1,000	.06	31
Police and detective supervisor	15,440	.88	90
Detective, police	11,330	.65	98
Police patrol officer	6,340	.36	86
Parking enforcement officer	40,720	2.33	96
Correction officer and/or jailer	1,240	.07	16
Sheriff	77,750	4.45	96
Bailiff	180	.01	14
Fire inspector	690	.04	41
Fire fighter	730	.04	55
Fire fighting and prevention supervisor	4,690	.27	45
All other service workers	990	.06	47
All other service workers	43,950	2.51	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations			
Mechanics and repairers, total	199,680	11.42	n.a.
Mechanic, automotive	19,480	1.11	n.a.
Diesel mechanic	7,910	.45	94
Engineering equipment mechanic	1,070	.06	43
Engineering equipment mechanic	2,090	.12	55

See footnotes at end of table.

Table A-1. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued			
Hydroelectric machinery mechanic, powerhouse repairer, and/or gas plant repairer	310	0.02	16
Mechanic, maintenance	4,930	.28	84
Radio mechanic	600	.03	53
All other mechanics and repairers	2,570	.15	n.a.
Truck driver	7,950	.45	82
Bus driver	2,170	.12	22
Carpenter	2,970	.17	96
Cement mason	230	.01	41
Crane, derrick, and hoist operators	240	.01	27
Delivery and/or route worker	640	.04	37
Electrician	3,370	.19	100
Supervisor, nonworking	16,850	.96	96
Ground worker, utilities	1,000	.06	22
Heavy equipment operator	22,090	1.26	90
Industrial truck operator	340	.02	31
Instrument repairer	460	.03	51
Machinist	550	.03	84
Maintenance repairer, general utility	8,620	.49	92
Helper, trades	2,810	.16	78
Painter, maintenance	2,320	.13	96
Plumber and/or pipefitter	1,770	.10	96
Press operator and/or plate printer	1,500	.09	82
Sewage plant operator	400	.02	29
Stationary boiler firer	1,470	.08	69
Stationary engineer	2,820	.16	78
Substation operator	250	.01	16
Animal caretaker	650	.04	49
Water treatment plant operator	180	.01	25
Welder and/or flamecutter	840	.05	90
Service station attendant, fuel pump attendant and/or lubricator	1,060	.06	43
Highway maintenance man	39,120	2.24	84
Surveyor helper	2,520	.14	59
Gardeners and groundskeepers	5,210	.30	94
All other skilled craft and kindred workers	5,740	.33	n.a.
All other operatives and semiskilled workers	16,770	.96	n.a.
All other laborers and unskilled workers	27,290	1.56	n.a.
Clerical occupations			
Office clerical workers, total	458,920	26.25	n.a.
Bookkeeping and/or billing machine operator	445,800	25.50	n.a.
Bookkeeping and/or billing machine operator	690	.04	69
Computer operator	5,130	.29	100
Keypunch operator	15,090	.86	90
Peripheral EDP equipment operator	6,060	.35	84
All other office machine operators	9,040	.52	n.a.
Stenographer	34,640	1.98	96
Accounting clerk	23,330	1.33	100
Bookkeeper, hand	2,590	.15	61
Cashier	9,120	.52	86
File clerk	10,760	.62	80
General office clerk	65,300	3.73	96
Library assistant	1,120	.06	84
Payroll and/or timekeeping clerk	1,900	.11	67
Personnel clerk	4,200	.24	92
Procurement clerk	770	.04	73
Receptionist	2,680	.15	84
Secretary	64,090	3.67	100
Statistical clerk	5,440	.31	86
Survey worker	420	.02	20
Switchboard operator	2,540	.15	92
Switchboard operator/receptionist	1,260	.07	53
Typist	87,010	4.98	100
Clerical supervisor, office or plant	17,840	1.02	96
Eligibility worker, welfare	28,150	1.61	75

See footnotes at end of table.

Table A-1. State government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Percent of establishments reporting the occupation
Office clerical workers—Continued			
Court clerk	9,050	0.52	80
License clerk	6,500	.37	80
All other office clerical workers	31,080	1.78	n.a.
Plant clerical workers, total	13,120	.75	n.a.
Production clerk and/or coordinator	630	.04	59
Shipping and/or receiving clerk	440	.03	53
Weigher, recordkeeping	690	.04	29
Stock clerk, stockroom, warehouse or storage yard	7,430	.42	98
Dispatcher, vehicle, service or work	830	.05	51
Dispatcher, police, fire and ambulance	2,300	.13	73
All other plant clerical workers	800	.05	n.a.
Sales occupations			
Sales agent, associate, and/or representative	11,310	.65	n.a.
Sales clerk	900	.05	63
Sales clerk	10,410	.60	67

¹ Estimates of fewer than 50 workers, or with less than 0.01 percent of industry employment, or with a relative error greater than 50 are generally not shown separately since such estimates are considered

unreliable. Estimates that are not shown have been counted in the appropriate "All other" categories.
n.a. = not available.

Table A-2. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Total	3,621,670	100.00	--	--
Managers and officers	325,190	8.98	n.a.	n.a.
Public administration inspectors, except construction	29,950	.83	20	25
Construction inspector	24,550	.68	7	32
Chief executives, general administrators, and legislators	124,810	3.45	3	62
All other managers	145,880	4.03	n.a.	n.a.
Professional occupations	420,130	11.60	n.a.	n.a.
Engineers, total	30,120	.83	n.a.	n.a.
Civil engineer	20,520	.57	14	27
Electrical and electronic engineers	4,150	.11	28	4
Mechanical engineer	1,460	.04	46	2
Safety engineer	440	.01	22	2
Traffic engineer	1,110	.03	14	5
All other engineers	2,440	.07	n.a.	n.a.
Life scientists, total	4,170	.12	n.a.	n.a.
Agricultural scientist	1,590	.04	22	5
Biological scientist	1,290	.04	32	3
Forester and conservation scientist	900	.02	19	4
All other life scientists	390	.01	n.a.	n.a.
Financial analyst	1,080	.03	19	3
Statistician	740	.02	25	2
Chemist	2,360	.07	28	5
Social scientists, total	15,600	.43	n.a.	n.a.
Economist	890	.02	22	2
Psychologist	2,110	.06	28	3
Urban and regional planner	10,440	.29	13	15
All other social scientists	2,160	.06	n.a.	n.a.
Therapists, total	3,460	.10	n.a.	n.a.
Physical therapist	930	.03	35	3
Occupational therapist	930	.03	47	2
Manual arts, music, and/or recreational therapist	680	.02	39	2
All other therapists	920	.03	n.a.	n.a.
Systems analyst, electronic data processing	5,120	.14	20	10
Audio visual specialist	370	.01	38	2
Claims taker, unemployment benefits	370	.01	21	1
Teacher and/or instructor, vocational education or training	3,560	.10	38	3
Vocational and educational counselor	2,630	.07	30	3
Photographer	1,220	.03	31	4
Purchasing agent and/or buyer	5,000	.14	10	18
Accountants and auditors	24,660	.68	20	31
Landscape architect	1,210	.03	22	4
Appraiser, general merchandise and related	610	.02	31	2
Architect	1,660	.05	37	2
Budget analyst	4,160	.11	16	10
Caseworker	48,960	1.35	3	17
Commercial artist	1,170	.03	18	3
Dietitian and/or nutritionist	2,230	.06	21	7
Writer and/or editor	480	.01	24	2
Employment interviewer	1,520	.04	14	5
Law clerk	2,980	.08	16	6
Lawyer	32,090	.89	18	40
Librarian, professional	21,350	.59	12	23
Curator, museum	820	.02	21	3
Nurse, professional	30,120	.83	22	16
Paralegal personnel	3,620	.10	47	7
Personnel and labor relations specialists	6,640	.18	19	14
Public relations practitioner	2,150	.06	15	8
Right-of-way agent	1,400	.04	17	4
Community organization worker	14,820	.41	45	10
Judge	10,770	.30	8	21
Magistrate	9,100	.25	16	8
Tax examiner, collector and/or revenue agent	12,170	.34	13	18
Assessor	18,460	.51	10	24
Appraiser, real estate	4,610	.13	16	6

See footnotes at end of table.

Table A-2. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Professional occupations—Continued				
Group recreation worker	43,190	1.19	13	19
All other professional workers	43,380	1.20	n.a.	n.a.
Technical occupations				
Computer programmer	102,110	2.82	n.a.	n.a.
Engineering technicians, total	7,020	.19	29	12
Drafter	31,660	.87	n.a.	n.a.
Electrical and electronic technicians	9,270	.26	10	17
Surveyor	3,870	.11	21	5
Traffic technician	3,300	.09	12	10
Civil engineering technician	2,080	.06	12	5
All other engineering technicians	7,320	.20	18	11
Science technicians	5,820	.16	n.a.	n.a.
Licensed practical nurse	2,910	.08	20	5
Physician's assistant	12,510	.35	20	8
Museum technician and/or restorer	760	.02	48	2
Radio operator	880	.02	29	2
Technical assistant, library	2,060	.06	20	3
Emergency medical technician	11,290	.31	20	10
All other medical and dental technologists and technicians	17,460	.48	15	7
All other technicians	6,900	.19	n.a.	n.a.
All other technicians	8,660	.24	n.a.	n.a.
Service occupations				
Janitors, porters and cleaners	1,130,220	31.21	n.a.	n.a.
Guards and doorkeepers	76,960	2.12	2	52
Food service workers, total	12,040	.33	19	9
Kitchen helper	21,910	.60	n.a.	n.a.
Cook, institution or cafeteria	7,130	.20	18	6
All other food service workers	8,990	.25	16	14
Supervisor, nonworking—service only	5,790	.16	n.a.	n.a.
Nurse aide and/or orderly	15,170	.42	23	12
Recreation facility attendant	44,120	1.22	12	7
Forest conservation worker	31,150	.86	15	15
Fish and game wardens	1,530	.04	28	2
School crossing guard	600	.02	42	1
Child—care worker	47,930	1.32	11	16
Lifeguard	5,560	.15	26	3
Social service aide	26,760	.74	13	8
Police and detective supervisor	20,990	.58	21	10
Detective, police	82,790	2.29	2	36
Police patrol officer	36,920	1.02	16	22
Parking enforcement officer	308,070	8.51	1	46
Correction officer and/or jailer	5,840	.16	14	11
Sheriff	45,720	1.26	8	15
Bailliff	24,710	.68	16	18
Fire inspector	5,580	.15	16	9
Fire fighter	7,310	.20	26	14
Fire fighting and prevention supervisor	224,330	6.19	3	23
All other service workers	54,990	1.52	3	16
All other service workers	29,240	.81	n.a.	n.a.
Operating, maintenance, construction, repair, material handling and powerplant occupations				
Mechanics and repairers, total	930,960	25.71	n.a.	n.a.
Mechanic, automotive	78,130	2.16	n.a.	n.a.
Diesel mechanic	31,280	.86	12	28
Electric meter installer, cut-in, cut-out, or outside	8,530	.24	48	7
Gas meter installer	2,200	.06	17	3
Engineering equipment mechanic	980	.03	39	1
Hydroelectric machinery mechanic, powerhouse repairer, and/or gas plant repairer	3,300	.09	19	6
Mechanic, maintenance	2,250	.06	41	1
Radio mechanic	10,100	.28	17	10
Treatment plant mechanic	1,540	.04	20	3
Water meter installer	6,720	.19	12	8
Water meter installer	6,060	.17	13	8

See footnotes at end of table.

Table A-2. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Operating, maintenance, construction, repair, material handling and powerplant occupations—Continued				
All other mechanics and repairers	5,170	0.14	n.a.	n.a.
Truck driver	49,040	1.35	12	24
Bus driver	56,090	1.55	6	9
Carpenter	6,960	.19	18	11
Cement mason	1,940	.05	18	4
Crane, derrick, and hoist operators	1,910	.05	45	2
Delivery and/or route worker	1,000	.03	35	2
Electrician	15,210	.42	39	12
Supervisor, nonworking	46,970	1.30	9	30
Ground worker, utilities	5,760	.16	24	3
Heavy equipment operator	65,740	1.82	6	36
Industrial truck operator	4,560	.13	23	3
Instrument repairer	1,870	.05	20	3
Line installer repairer	11,970	.33	15	4
Maintenance repairer, general utility	49,180	1.36	9	32
Helper, trades	13,840	.38	28	10
Subway/streetcar operator	4,500	.12	19	(³)
Painter, maintenance	6,670	.18	16	9
Pipelayer	11,680	.32	17	6
Plumber and/or pipefitter	6,500	.18	22	7
Press operator and/or plate printer	1,040	.03	14	4
Refuse collector	63,860	1.76	10	20
Sewage plant operator	37,380	1.03	8	25
Stationary engineer	8,630	.24	25	4
Animal caretaker	5,490	.15	14	11
Trouble shooter, power line	1,910	.05	21	2
Water treatment plant operator	27,800	.77	8	22
Pump station operator, waterworks	4,350	.12	15	6
Welder and/or flamecutter	3,310	.09	39	7
Service station attendant, fuel pump attendant and/or lubricator	4,100	.11	32	5
Highway maintenance man	101,400	2.80	6	33
Surveyor helper	3,970	.11	13	8
Gardeners and groundskeepers	56,010	1.55	9	28
Bus driver, school	1,260	.03	43	1
Ambulance driver and/or attendant	8,690	.24	20	3
All other skilled craft and kindred workers	18,560	.51	n.a.	n.a.
All other operatives and semiskilled workers	36,560	1.01	n.a.	n.a.
All other laborers and unskilled workers	107,120	2.96	n.a.	n.a.
Clerical occupations	709,280	19.58	n.a.	n.a.
Office clerical workers, total	613,710	16.95	n.a.	n.a.
Bookkeeping and/or billing machine operator	4,620	.13	11	9
Computer operator	6,790	.19	10	18
Keypunch operator	7,180	.20	17	11
Peripheral EDP equipment operator	2,950	.08	49	4
All other office machine operators	3,760	.10	n.a.	n.a.
Stenographer	17,130	.47	18	14
Accounting clerk	37,920	1.05	6	39
Bookkeeper, hand	16,000	.44	8	27
Cashier	24,750	.68	17	19
File clerk	16,480	.46	21	11
General office clerk	89,140	2.46	3	39
Library assistant	40,890	1.13	13	19
Payroll and/or timekeeping clerk	7,650	.21	15	23
Personnel clerk	4,560	.13	13	13
Procurement clerk	1,800	.05	18	7
Receptionist	5,760	.16	19	11
Secretary	77,520	2.14	7	57
Statistical clerk	5,150	.14	18	7
Switchboard operator	4,630	.13	16	9
Switchboard operator/receptionist	4,510	.12	14	15
Typist	95,440	2.64	3	37
Clerical supervisor, office or plant	24,250	.67	10	16
Eligibility worker, welfare	18,500	.51	37	6
Court clerk	23,630	.65	12	22

See footnotes at end of table.

Table A-2. Local government: Employment, relative error, and percent of establishments reporting selected occupations, May 1982—Continued

Occupation	Employment ¹	Percent of total employment	Relative error (in percentage) ²	Percent of establishments reporting the occupation
Office clerical workers—Continued				
Town clerk	18,840	0.52	5	35
License clerk	6,610	.18	30	8
All other office clerical workers	47,250	1.30	n.a.	n.a.
Plant clerical workers, total	95,570	2.64	n.a.	n.a.
Meter reader, utilities	21,790	.60	6	23
Production clerk and/or coordinator	1,040	.03	36	2
Shipping and/or receiving clerk	400	.01	24	2
Weigher, recordkeeping	580	.02	19	2
Stock clerk, stockroom, warehouse or storage yard	10,740	.30	18	16
Dispatcher, police, fire and ambulance	53,280	1.47	6	35
All other plant clerical workers	7,740	.21	n.a.	n.a.
Sales occupations				
Sales agent, associate, and/or representative	610	.02	41	1
Sales clerk	3,170	.09	42	1

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

² Relative standard errors apply equally to data on estimated

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

³ Less than 0.5 percent.

n.a. = not available.

Appendix B. Survey Methods and Reliability of Estimates

Scope of survey

The survey covered selected private nonmanufacturing establishments in Standard Industrial Classification (SIC) codes 41-59, (excluding 43), and State and local government units excluding hospitals and education. The reference date of the survey was the week that included April 12, May 12, or June 12, 1982, depending on the SIC of the sampled unit as shown below:

SIC	Reference date
41	June 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
State government	May 12
Local government	May 12

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

Occupational and industrial classification

The OES classification system combines two widely used systems—the *Dictionary of Occupational Titles* (DOT) and the system used for the 1970 Census of Population. Occupational titles and descriptions in the survey are based primarily on the *Dictionary of Occupational Titles*.¹ The DOT was used to develop the definitions of occupations because it is the most detailed classification available. Summary categories and residual groups generally follow the categories used in

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

the 1970 Census. 'Crosswalks' have been developed between the two systems so that users may integrate OES data with data from sources using the Census classification.

The industrial classification system is that described in the 1972 edition of the *Standard Industrial Classification Manual*,² 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.

² *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 one year and non-manufacturing industries in the other two years. Data are collected from a sample of establishments primarily by mail; telephone followups and personal visits are made when an establishment response is critical to the survey. The survey is based on a probability sample, stratified by industry and size of employment, designed to represent the total or "universe" of establishments covered by the survey. Data are requested for the pay period including the 12th of the reference month, which is standard for all Federal agencies collecting employment data. The reference months for the 1982 survey were April, May, and June.

For the 1982 survey, 10 separate questionnaires were used, each having detailed occupations related specifically to a particular industry's activity. For example, "security checker" was surveyed in only one industry—air transportation.

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 agencies. Because each cooperating State selected its own sample, the reference date of the sampling frame varied depending on when the last updates to the frame were made and when sampling took place. The reference date for the frame used for sampling in the three supplemental States was the first quarter of 1981.

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

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

Reporting units with 1-3 employees were not sampled in all States, but units with 4-9 employees were given larger weights to represent the employment in the smaller size class. Reporting units with 250 or more employees were included in the sample with certainty in cooperating States; units with 1,000 or more employees were included with certainty in the three supplemental States. 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 for a set of typical occupations. This SIC sample size was allocated to the size classes in proportion to size class employment. The sample was selected systematically with equal probability within each State/SIC size class cell.

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

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

The above allocations resulted in a total initial sample size of 239,580 reporting units.

Response

There were 228,244 final eligible units in the sample (i.e., excluding establishments that were out of business, out of scope, etc.). Usable responses were obtained from 239,598 units, producing a response rate of 74.8 percent based on units and 73.8 percent based on weighted employment. Subsequent to the national estimates, States received additional data to prepare State estimates.

Estimation

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

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

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

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

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

Where: \hat{p} = 2-digit industry occupational employment estimate
 i = 3-digit industry within a 2-digit industry
 j = size class
 k = establishment
 w_{ijk} = weight after nonresponse adjustment in i -th industry, j -th size class and k -th establishment
 P_{ijk} = occupational employment in i -th industry, j -th size class and k -th establishment
 e_{ijk} = total employment in i -th industry, j -th size class and k -th establishment
 M_i = population total employment in i -th industry

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

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

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

Where: $V(\hat{p})$ = variance of \hat{p}
 i = 3-digit industry within a 2-digit industry
 j = size class
 N_{ij} = total number of units in the i -th industry and j -th size class

f_{ij} = sampling fraction in the i -th industry and j -th size class
 n_{ij} = number of sample units in the i -th industry and j -th size class
 S_{pij} = standard deviation of p within the i -th industry and j -th size class
 S_{eij} = standard deviation of e within the i -th industry and j -th size class
 K_{ij} = correlation coefficient between p and e within the i -th industry and j -th size class.

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

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

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

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

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

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

Reliability of estimates

Estimates developed from the sample may differ from the results of a complete survey of all the establishments in the sampled lists. Two types of errors, sampling and nonsampling, are possible in an estimate based on a sample survey. Sampling error occurs because observations are made only on a sample, not on the entire

population. Nonsampling error can be attributed to many sources, e.g., inability to obtain information about all cases in the sample; differences in the respondents' interpretation of questions; inability of respondents to provide correct information; errors in recording, coding, or processing the data; errors in estimating values for missing data; and failure to represent all units in the population.

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

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

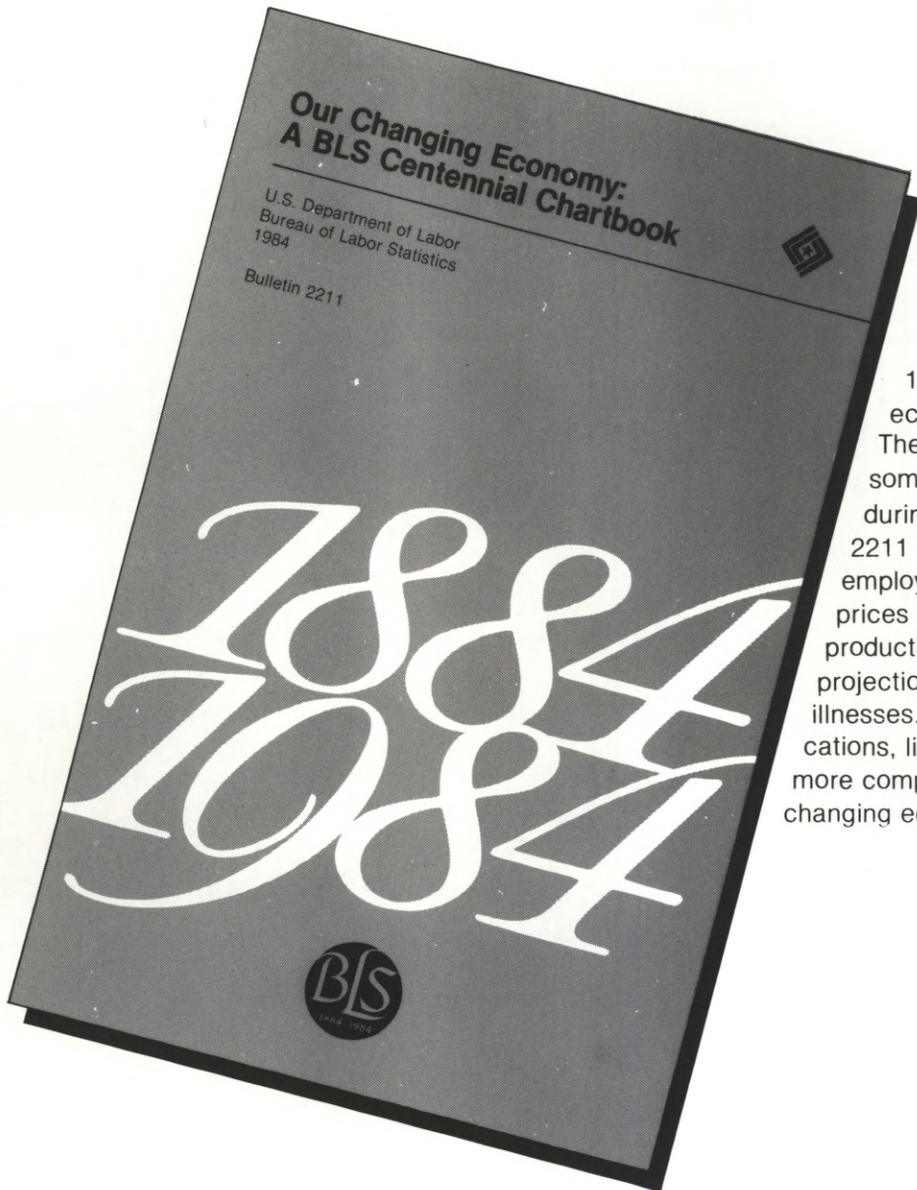
Appendix C. OES Survey Data Available from State Agencies

State data on occupational employment in the industries covered in this bulletin are available as indicated in the following table. These data may be ob-

tained from the State employment security agencies listed on the next page of this publication.

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

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



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State Agencies Cooperating In the OES Program

BLS Region	
IV ALABAMA	-Department of Industrial Relations, Industrial Relations Building, Room 427, Montgomery 36130
X ALASKA	-Department of Labor, Employment Security Division, P.O. Box 1149, Juneau 99801
IX ARIZONA	-Department of Economic Security, Labor Market Information, P.O. Box 6123, Phoenix 85005
VI ARKANSAS	-Department of Labor, Employment Security Division, P.O. Box 2981, Little Rock 72203
IX CALIFORNIA	-Employment Development Department, P.O. Box 1679, Sacramento 95808
VIII COLORADO	-Division of Employment and Training, 251 East 12th Avenue, Denver 80203
I CONNECTICUT	-Department of Labor, Employment Security Division, 200 Folly Brook Boulevard, Wethersfield 06109
III DELAWARE	-Department of Labor, Office of Planning, Research and Evaluation, P.O. Box 9092, Newark 19711
III DIST. OF COL.	-Department of Employment Services, Division of Labor Market Information, Research, and Analysis, 500 C Street, N.W.—Room 201, Washington 20001
IV FLORIDA	-Department of Labor and Employment Security, Caldwell Bldg., Tallahassee 32302
IV GEORGIA	-Department of Labor, Labor Information Systems, 254 Washington Street, S.W., Atlanta 30334
IX HAWAII	-Department of Labor and Industrial Relations, P.O. Box 3680, Honolulu 96811
X IDAHO	-Department of Employment, Research and Analysis Division, P.O. Box 35, Boise 83707
V ILLINOIS	-Bureau of Employment Security, Research and Analysis Division, 910 South Michigan Avenue, 12th Floor, Chicago 60605
V INDIANA	-Employment Security Division, 10 North Senate Avenue, Indianapolis 46204
VIII IOWA	-Department of Job Service, Research and Analysis—LMI Unit, 1000 E. Grand Avenue, Des Moines 50319
VII KANSAS	-Department of Human Resources, Research and Analysis Section, Division of Staff Services, 401 Topeka Avenue, Topeka 66603
IV KENTUCKY	-Department of Human Resources, 275 E. Main Street, 2nd Floor West, Frankfort 40621
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I MAINE	-Department of Manpower Affairs, Employment Security Commission, 20 Union Street, Augusta 04330
III MARYLAND	-Department of Human Resources, 1100 North Eutaw Street, Baltimore 21201
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VIII UTAH	-Department of Employment Security, LMI Services Section, P.O. Box 11249, Salt Lake City 84147
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X WASHINGTON	-State Employment Security Department, Research and Statistics, 212 Maple Park, Olympia 98504
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