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in cooperation with

FEDERAL SECURITY AGENCY

UNITED STATES OFFICE OF EDUCATION

Occupational Data for Counselors

**A Handbook of Census Information
Selected for Use in Guidance**



Bulletin No. 817

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Letter of Transmittal

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., February 27, 1945.

THE SECRETARY OF LABOR:

I have the honor to transmit herewith a bulletin presenting occupational information selected and arranged for the use of counselors and other persons engaged in giving vocational or educational guidance and information to veterans, young people in school, and others.

The bulletin was prepared by the Occupational Outlook Division of the Bureau of Labor Statistics in cooperation with the United States Office of Education, Vocational Division, Occupational Information and Guidance Service. The text was written by Walter J. Greenleaf, of the Office of Education, and by Cora E. Taylor and Harold Goldstein, of the Bureau of Labor Statistics. The data in the tables, based on publications of the Bureau of the Census, were selected and arranged and the computations made by the Bureau of Labor Statistics under the direction of Cora E. Taylor.

A. F. HINRICHS, *Acting Commissioner.*

HON. FRANCES PERKINS,
Secretary of Labor.

(11)

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Occupational Data for Counselors

PART I.—Use of Census Occupational Data in Guidance Work

Particularly useful in guidance programs is a considerable amount of information about occupations and workers to be found in the various publications of the Bureau of the Census. Published census tables, however, fill several large volumes which are not generally accessible to counselors, and even when available in libraries, require both time and patience to extract occupational data that are useful and comparable. With these facts in mind, material from the mass of census statistics has been carefully selected, summarized, and interpreted to supply a need on the part of counselors and others who are helping young people and veterans to choose a vocation.

The census data selected are condensed into five tables with discussions and interpretations intended to be useful to counselors, personnel workers, employment officials, and deans of students. Teachers in classes in occupations who are helping students find answers to questions concerning workers in the United States will find ready reference in these summaries, and those studying curriculum planning in schools, stability of employment, relative employment opportunities of men and of women, and similar subjects will find essential data and references for further study.

Persons seeking guidance in vocations constantly ask questions that require the study of occupational trends if they are to be adequately answered. Typical of such questions are the following extracted from a counselor's letter: "Many people are asking for counseling to help determine further educational plans. 'Will the nursing field be overcrowded in the postwar era?' 'What chance will there be for employment in the field of interior decorating or commercial art?' 'Will office occupations be flooded after the war?' These are just a few of the questions."

In choosing a career it is well to state at the outset that there is no set formula and no test or scientific measuring instrument that a counselor or anyone else may use to indicate the one occupation that an individual should enter for his life work. It is not too difficult for a counselor to examine a person's potentialities and suggest several broad fields of work in which he might be interested, but the final choice of work rests squarely with the individual. The counselor on

the other hand must actively give the best possible information about alternative occupations in an effort to aid in a final decision, but he cannot tell the individual whether or not he should enter a particular field. If he has good information on occupational trends and labor-market prospects, particularly in his local area, this is useful in counseling when supplemented with other occupational materials. Personal factors, preferences, and abilities, however, are often important enough in a vocational choice to outweigh the prospects of difficult competitive situations.

Among the facts that a counselor should present about an occupation are: Nature of the work; number of workers engaged; need for workers; duties; qualifications; preparation; methods of entering the work; earnings; typical places of employment; organizations promoting the work; and labor-market conditions affecting one's ability to get a job, keep it, and advance in it.

Furnishing information on some of these topics requires a knowledge of occupational trends and outlook, and to this end census statistics most useful to the counselor have been selected to present significant facts. To avoid misinterpreting the data, one should read carefully the definitions and explanations outlined in Part III. These statistics represent only one phase of occupational information and by no means tell the whole story about any particular occupation. To interpret the data adequately, the counselor will also want as much descriptive information as possible about occupations and industrial trends.

Use of National Data in Local Situations

As given in general census statistics, national averages, figures, and trends indicate the condition of affairs for the country as a whole rather than for any particular region. It is common knowledge that occupational opportunities in every line of work vary greatly in different areas and communities. Such occupations as barber, clerk, physician, teacher, or shoe repairer are characteristic of every community both large and small, and opportunities in these occupations are to be found in every State. On the other hand, certain occupations in such industries as forestry, mining, and various kinds of manufacturing are concentrated in a few regions, and workers seeking employment in these fields must go where the centers of industry are located.

National data must then be related to local situations before proper interpretations can be made for those who wish to become acquainted with opportunities in a definite location. To supplement national figures the Census has compiled data on employment in each occupation in 1940 for individual States and for cities of 100,000 population and over. The guidance counselor may obtain such local information by asking the Bureau of the Census for a copy of the release, Series P-11, for his State.

Detailed occupation and industry statistics for these large areas are presented in the third series of 1940 Population bulletins for each State. Condensed occupation and industry statistics for cities of less than 100,000 population and counties are given in the second series of 1940 Population bulletins for each State. Both of these publications are available in most libraries, either in bulletin form or as bound

Volumes III and II, respectively, of the 1940 Census Reports on Population. Copies of State bulletins are available in the Bureau of the Census for free distribution in limited number.

The counselor in a smaller city may wish to sponsor a local occupational survey in order to determine what occupations are carried on in the local community. Helpful suggestions are offered in Community Occupational Surveys, Vocational Division Bulletin No. 223 of the United States Office of Education (obtainable from the Superintendent of Documents, Washington 25, D. C., price 35 cents).

PART II.—Suggestions for Interpreting Census Data

Significant facts about the labor-market situations which may be expected in each occupation are revealed in the tables, if properly interpreted together with other information.

One of the most important items of information is the number of people employed in the occupation or industry. The greatest source of new job openings, generally, is the replacement demand arising from deaths and retirements. The replacement rate varies, depending upon the nature of each occupation and the ages of all the workers employed in it, but usually amounts to several percent a year. In addition to this factor, openings are created by people leaving one job to take another. It is, therefore, obvious that the mere size of an occupation or an industry is a clue to the number of job opportunities it will offer. Size may even be more important in this respect than growth; each year more new workers will have the opportunity to enter an occupation such as that of carpenters (employing several hundred thousand), even though there is no increase in the number of carpenters, than will be able to enter a small occupation like that of aviators, which may be growing rapidly.

Interpreting Population and Labor Force Data (Table 1)

A nation's population—its size and the way it is used—is of fundamental importance, as we have learned in wartime, to its industrial and military strength. In occupational analysis, interest centers upon that part of the population constituting its working force. The number in the labor force depends in part upon the proportion of the population that is of working age, its age composition, and institutional factors affecting employment of women, school attendance, retirement, etc. Of our 132 million population in 1940 (table 1), more than 100 million were 14 years of age and over, of which about 53 million were working or looking for work. In the war years the increase in the labor force has been disproportionate to the natural increase in the population of working age.

The data in table 1 simply give an accounting of the activity of the population 14 years and over, whether employed or unemployed, whether engaged in home housework, in school, unable to work, etc. On the sample basis, current data are available from the Bureau of the Census, Special Surveys Division, which publishes the Monthly Report on the Labor Force and The Labor Force Bulletin. These surveys provide a starting point for any broad understanding of the changes occurring in the economy with respect to employment status of the population.

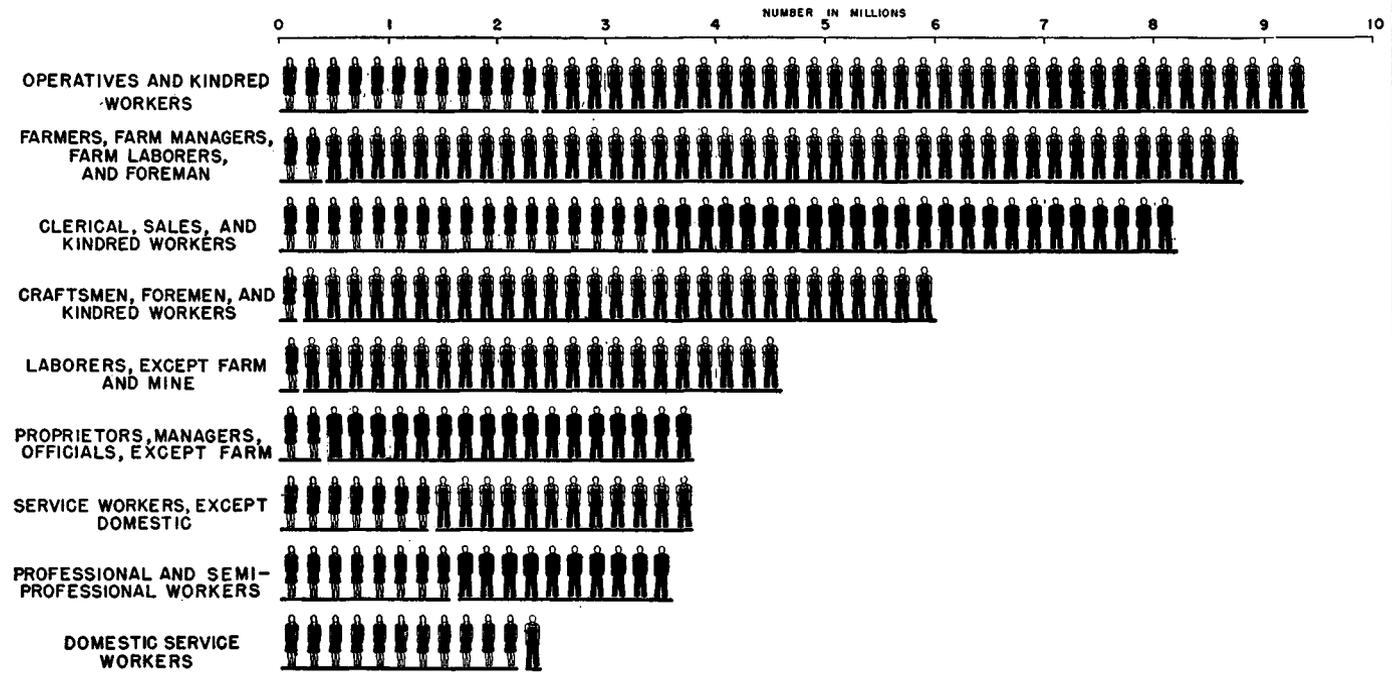
Interpreting Information on Major Occupation Groups (Table 2)

The experienced labor force in 1940 may be divided into 11 major occupation groups. Four of the major groups included more than half the total experienced labor force—operatives and kindred workers; clerical, sales, and kindred workers; craftsmen, foremen, and kindred workers; and farmers and farm managers. More than half of the men were also in these four fields, but the women were concentrated in

CHART 1

MAJOR OCCUPATION GROUPS

NUMBER OF MEN AND WOMEN IN EXPERIENCED LABOR FORCE IN EACH MAJOR OCCUPATION GROUP, 1940



EACH FIGURE = 200,000

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somewhat different fields; three-quarters of the women were clerical, sales, and kindred workers; operatives and kindred workers; domestic service workers; and professional and semiprofessional workers. In the professional field there were nearly as many women (1,439,174) as men (1,609,298), in spite of the fact that in the total experienced labor force men outnumbered women three to one. This is accounted for by the large number of women who are teachers and nurses. While nearly half the professionals and 93 percent of the domestic-service workers were women, only 2 percent of the craftsmen were women. During the war women have gained an increasing proportion of the jobs in each occupation group, particularly in the clerical, sales, and operatives groups.

Those unemployed in the week in which the census was taken in March 1940 may be studied by occupation groups; unemployment rates for the experienced labor force in each occupation group are detailed in table 2. Such groups as professionals, farmers, proprietors, managers, and officials, and protective service workers were less subject to unemployment than the others. One important reason for this is the fact that large numbers in these groups were self-employed or worked for Federal, State, or local government.

Interpreting Information on Industries (Table 3)

The industries in which the experienced labor force worked are summarized in table 3 for the United States as a whole. The counselor will need to gather as much additional local information as possible. Knowledge of the relative importance of each industry is useful in counseling. For instance, there is considerable discussion of employment opportunities in the plastics industry which even in 1943, after a wartime expansion, employed only 30 to 40 thousand workers. In 1940 plastics were only a small part of the whole chemicals industry which employed 440 thousand workers, or about 1 percent of the total employment of 45 million in all industries. More jobs open up each year because of replacement demand in such large industries as construction or retail trade than the *total* number of jobs in the plastics industry.

Census data also reveal the relative employment of men and women by industry (table 3, column 4). Some industries employed very small proportions of women—for example, construction, mining, petroleum and coal products, iron and steel, and transportation. Others employed more women than men—for example, apparel manufacturing, communications (including telephone companies), personal services, and tobacco manufacturing.

From census data we may determine the unemployment rate in the various industries (table 3, column 6). Construction had the highest rate in the census week—41 percent. Other industries had very low rates—communications and utilities are relatively stable and not subject to large seasonal fluctuations. Professional services also had a low rate, reflecting a high proportion of self-employed and government workers in this group.

Interpreting Census Data for Selected Occupations (Tables 4 and 5)

Data on the more than 200 specific occupations shown in tables 4 and 5 are probably most useful to counselors. The occupations,

chosen from the published census data, are those of the greatest practical interest to counselors; the principal omissions are in the unskilled groups. For convenience in reference, the occupations, except professional and semiprofessional, are grouped under the industries in which the workers were principally employed.

Trends in the number of experienced workers may be traced through census data from 1910 to 1940 (table 4, columns 2, 3, 4, and 5). Such trends are useful in judging whether an occupation is expanding rapidly or slowly, or even growing smaller. In general, it is likely that there will be better employment opportunities in expanding occupations than in those which are contracting. Most occupations on the list grew in numbers from 1910 to 1940, but at widely varying rates. It must be remembered that the total population itself increased over the period, rising by 43.2 percent from 1910 to 1940. In evaluating the trend in an occupation it may be useful to compare its growth with that of the population. For the past 3 decades, population has increased as follows:

	<i>Population</i>	<i>Percent of gain over previous census</i>
1910.....	91,972,266	21.0
1920.....	105,710,620	14.9
1930.....	122,775,046	16.1
1940.....	131,669,275	7.2

Great changes have taken place since 1940 as a result of the war. Unfortunately there is no general information on changes in numbers in most occupations since then, although there are statistics on some, and rough estimates can be made in certain cases. No attempt, therefore, is made here to summarize the scattered information that is available.

The unemployment rate in each occupation in 1940 is shown in table 4, column 6. In interpreting such rates, it is necessary to follow the discussion in Part III—Definitions and Explanations, to determine exactly what is meant by "unemployed." As pointed out there, the unemployment rates in some occupations in the census week of 1940 are affected by regular seasonal factors, and also by the fact that persons engaged in public emergency work programs (who were counted as "unemployed") tended to concentrate in certain occupations because of the nature of the work programs.

The unemployment rate should be evaluated in connection with the information on class of worker (table 4, columns 9, 10, and 11; and table 5). Occupations with large proportions of self-employed persons usually have low unemployment rates for obvious reasons. The effects of economic instability are often felt in such occupations through a reduction in earnings rather than in unemployment.

The number of men and women employed in each occupation in 1940 is summarized in table 4 (number of men, column 7; number of women, column 12; percent of total who were men, column 8). A young woman considering the choice of an occupation will want to know how women have fared in that occupation in the past. The fact that very few women or men were employed in a particular occupation in 1940 does not necessarily mean that members of that sex are virtually barred from the occupation, but it suggests that the opportunities may be limited. In many occupations the number and

proportion of women employed has gradually increased in the past, and this increase has been particularly great during the war.

Class of worker is an item of census data that is of special interest to those who counsel veterans. Veterans are given special opportunities to launch their own business enterprises or to enter the employ of Federal, State, and local government agencies. Certain fields offer many opportunities for self-employment—medicine and related fields, architecture, law, farming, baking, printing, and construction. Opportunities for government employment are relatively important for such occupations as veterinarians, teachers, nurses, civil engineers, and social and welfare workers.

Census data on the class of worker are summarized for men in table 4, columns 9, 10, and 11; and for women in table 5, which covers only occupations employing large numbers of women (those marked “†” in table 4, column 12).

Illustrations of the Use of Census Data in Counseling

To illustrate how the statistical data presented in the tables may be used in guidance work, seven types of workers are selected for discussion: Nurses, mail carriers, brickmasons, telephone operators, teachers, chemists, and welders. It is important to obtain, in addition, descriptive information for any field of work, as the figures tell only a part of the story.

Discussion of each of the seven occupations below is based on a simple outline which may be adapted by the local guidance officer for use in counseling: (1) Census data taken directly from table 4. (As indicated in column 12 by “†”, additional data on “class-of-worker” figures for women in 16 occupations are found in table 5.) (2) Some interpretation of these data on a Nation-wide basis. (3) Local applications for your community.

1.—Nurses¹

Experienced workers:		<i>Table 4</i>
1910.....	82,327	col. 2
1920.....	149,128	col. 3
1930.....	294,189	col. 4
1940: Number.....	371,066	col. 5
Percent unemployed.....	4.1	col. 6
Employed workers, 1940:		
Men:		
Total number.....	7,509	col. 7
Percent of all employed workers.....	2.1	col. 8
Class of worker:*		
Private wage or salary workers.....	4,700	col. 9
Government workers.....	2,740	col. 10
Employers and own-account workers.....	880	col. 11
Women:		
Total number.....	348,277	col. 12
Class of worker:*		<i>Table 5</i>
Private wage or salary workers.....	243,460	col. 2
Government workers.....	70,640	col. 3
Employers and own-account workers.....	25,600	col. 4

* Figures for class of worker do not add to the number employed because the class-of-worker figures are based on a 5-percent sample tabulation, while the figures on number employed are based on a complete count of all persons reported.

¹ See table 4, p. 24.

For the Nation as a whole the occupation of nurse grew rapidly and steadily in the past 3 decades, increasing 350.7 percent, as compared to a population increase of 43.2 percent. Nearly all the employed nurses in 1940 were women (97.9 percent), but there were more male nurses employed in that year than the number of men reported by the census as osteopaths, aviators, and a few other occupations. The number of men graduate nurses employed in nursing work has decreased since 1940 due to Selective Service and better paying war jobs. However, men nurses will be in demand; the Veterans Administration alone is planning on 300,000 beds in the next 20 years. For a woman considering a professional career, nursing is an important possibility, since nurses represented one of every four professional women (table 2, column 4). The unemployment rate in 1940 was quite low for an occupation in which such a large proportion of the workers were private wage and salary workers.

As to the local situation, young people in most towns are generally aware of the Nation-wide recruiting programs for nurses to meet an urgent wartime need, both military and civilian. Local facts about nursing in your community may be readily checked by calling your nearest nurse-training institution. The National League of Nursing Education, 1790 Broadway, New York 19, New York, will give advice concerning any of the 1,300 approved institutions for nurse training. Further information may be obtained from several sources including the State Board of Nurse Examiners at your State Capitol, or the nearest local registry of nurses listed in your telephone directory.

2.—Mail Carriers ²

		<i>Table 4</i>	
Experienced workers:			
1910.....	79,852	col. 2	
1920.....	90,509	col. 3	
1930.....	120,106	col. 4	
1940: Number.....	122,910	col. 5	
Percent unemployed.....	1.7	col. 6	
Employed workers, 1940:			
Men:			
Total number.....	119,246	col. 7	
Percent of all employed workers.....	98.7	col. 8	
Women: Total number.....	1,524	col. 12	

The occupation of mail carrier represents a field of work that has remained fairly stable, since it has increased at approximately the same rate as population. The gain from 1910 to 1940 was 53.9 percent as compared with 43.2 percent for population for the same period. Nearly all the mail carriers are men, and all are classed as government workers. Employment is regular and secure, and the unemployment rate is low because of the year-round nature of the work and the employment practices of the post office, the only employer.

As to the local situation, information may be obtained at your local post office. Mail carriers are Federal employees selected through examinations whenever a given locality needs more workers. Such examinations are open to all races and preference is given to veterans. Vacancies are filled from substitute lists which provide one substitute for every six carriers. Entrance to the occupation is via the sub-

² See table 4, p. 30.

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stitute and as a rule the turnover in the post office is very small. The base salary of a city carrier is \$1,700 a year with a \$100 increase each year until \$2,100 is reached.

3.—*Brickmasons*³

Experienced workers:		<i>Table 4</i>
1910.....	169,402	col. 2
1920.....	131,264	col. 3
1930.....	170,903	col. 4
1940: Number.....	141,690	col. 5
Percent unemployed.....	34.1	col. 6
Employed workers, 1940:		
Men:		
Total number.....	93,024	col. 7
Percent of all employed workers.....	99.7	col. 8
Class of worker (includes stonecutters and stone carvers):		
Private wage or salary workers.....	81,540	col. 9
Government workers.....	3,020	col. 10
Employers and own-account workers.....	20,260	col. 11
Women: Total number.....	306	col. 12

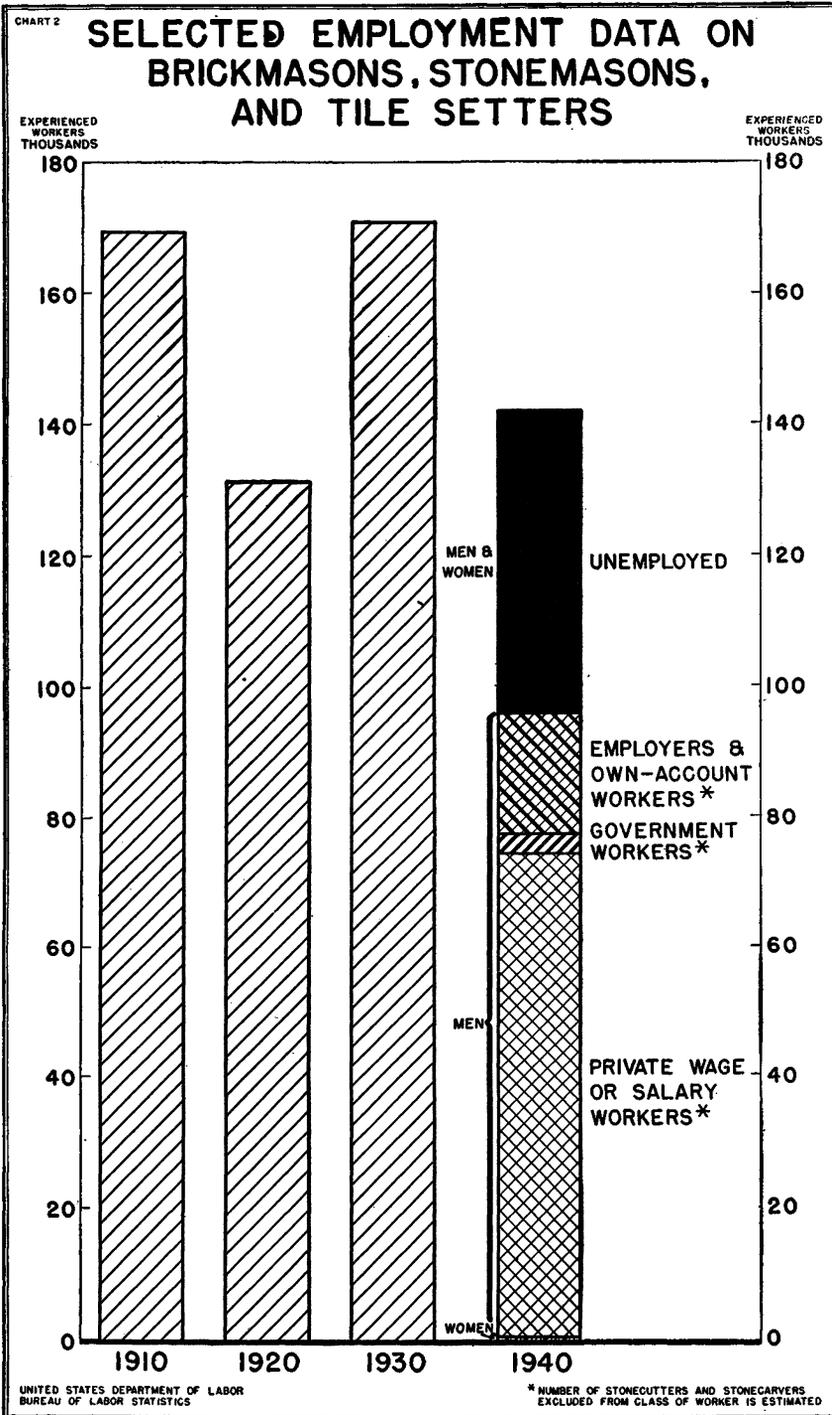
Brickmasons, stonemasons, and tile setters represent an occupational field that has been declining in numbers while population has been increasing. A construction boom in the 1920's raised the number of experienced workers in 1930 to approximately the same as in 1910, but by 1940 more than 29,000 dropped out—a loss of 17.1 percent—and more than a third of those still in the labor force were unemployed. The introduction of various substitutes for brick and stone construction has also affected the trade. The Bureau of the Census makes the following comment with regard to workers in the building trades:

The decrease from 1930 to 1940 in the number of workers in certain of the building trades doubtless resulted in large measure from the marked decline during the decade in the construction industry—a decline, for establishments reporting business of \$25,000 or more, in 1939 as compared with 1929, of 27.4 percent in the dollar value of work performed during the year, and a decline of 35.3 percent in the amount of the annual payroll. In part, the decrease in the number of workers may be accounted for by the fact that to a considerable extent the construction industry is seasonal and, in many sections of the country, was near its lowest ebb at the time of the census in 1940. Of the persons who usually worked in the construction industry, many were not at work at their regular trades during the census week, March 24-30. Some of these doubtless were working at other jobs, and some doubtless were unemployed and not seeking work and were not included in the labor force.⁴

Local details concerning this field of work can be obtained from the nearest office of the union—The Bricklayers, Masons, and Plasterers International—but the trade is not a local one as skilled craftsmen can work anywhere. Many men go through the steps from apprentice to journeyman to foreman to contractor. The opportunities for self-employment are good, as shown by the fact that about one in five was so employed in 1940. Like many other construction trades, this occupation has high hourly wage rates, but is subject to great seasonal and cyclical fluctuations.

³ See table 4, p. 26.

⁴ From *Comparative Occupation Statistics for the United States, 1870 to 1940*.



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4.—Telephone Operators ⁵

Experienced workers:		<i>Table 4</i>
1910.....	97,731	col. 2
1920.....	190,006	col. 3
1930.....	248,817	col. 4
1940: Number.....	208,319	col. 5
Percent unemployed.....	4.1	col. 6
Employed workers, 1940:		
Men:		
Total number.....	10,697	col. 7
Percent of all employed workers.....	5.4	col. 8
Class of worker:		
Private wage or salary workers.....	9,180	col. 9
Government workers.....	1,060	col. 10
Employers and own-account workers.....	80	col. 11
Women:		
Total number.....	189,002	col. 12
Class of worker:		<i>Table 5</i>
Private wage or salary workers.....	184,200	col. 2
Government workers.....	4,680	col. 3
Employers and own-account workers.....	140	col. 4

For the Nation as a whole telephone operators nearly doubled in numbers from 1910 to 1920, and the gain from 1920 to 1930 was 31 percent or nearly twice the rate of increase in population. In 1940, however, there was a loss of 16.3 percent in the number of operators, even though the population increased by 7.2 percent and there were more telephones in use than ever before. The downward trend in the number of operators may be interpreted in the light of the change from the system which required operators to make connections each time the telephone receiver was lifted, to the automatic dial system now installed in the larger cities. On the other hand, private exchanges in business houses, hotels, and other establishments have increased in number, and employed about a quarter of the telephone operators in 1940. The occupation is largely a woman's field as indicated by the low proportion of men employed. Employment is relatively stable as shown by the low unemployment rate.

The local situation may be checked by visiting the offices of the telephone company. Local girls who have had a high-school education are often preferred and many are given 2 to 4 weeks training on the job with pay. Well-managed personnel departments are usually maintained in good sized cities where complete information about local employment may be obtained.

⁵ See table 4, p. 29.

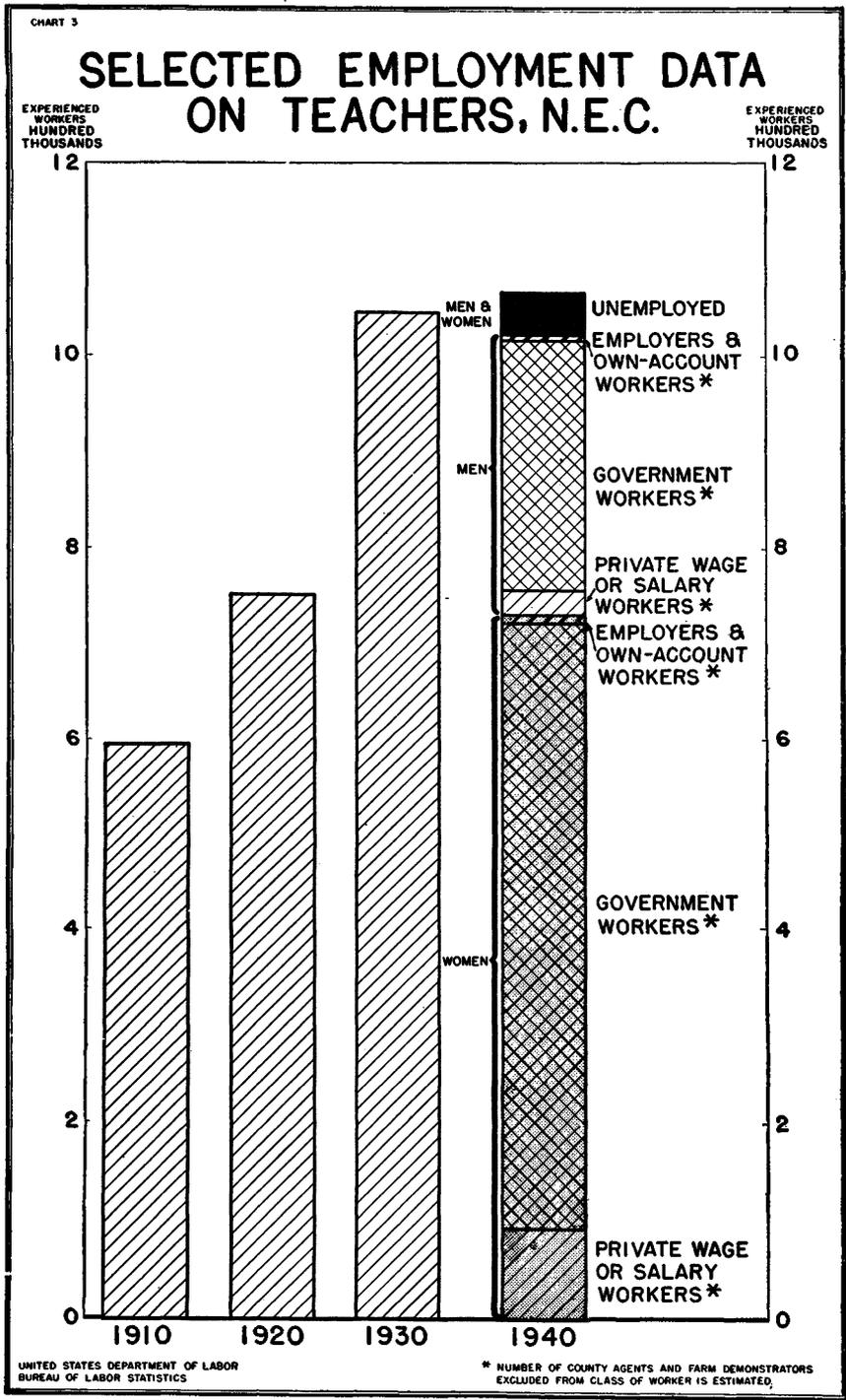
5.—*Teachers* ⁶

Experienced workers:		<i>Table 4</i>
1910	595,285	col. 2
1920	752,055	col. 3
1930	1,044,016	col. 4
1940: Number.....	1,065,280	col. 5
Percent unemployed.....	4.3	col. 6
Employed workers, 1940:		
Men:		
Total number	247,716	col. 7
Percent of all employed workers.....	24.3	col. 8
Class of worker (includes county agents and farm demonstrators):		
Private wage or salary workers.....	23,380	col. 9
Government workers.....	233,400	col. 10
Employers and own-account workers.....	3,580	col. 11
Women:		
Total number	772,044	col. 12
Class of worker (includes county agents and farm demonstrators):		<i>Table 5</i>
Private wage or salary workers.....	91,960	col. 2
Government workers.....	669,900	col. 3
Employers and own-account workers.....	7,400	col. 4

The census term "teachers, n. e. c." means teachers, not elsewhere classified, and does not include college teachers or teachers of music, dancing, or art. Teaching is the largest profession in terms of numbers employed, and the most important profession for women. Although three-fourths of all teachers in 1940 were women, teaching is also one of the larger occupations for men. Since 1910, the occupation has expanded 79 percent, but it is believed unlikely that the number of teachers will increase in the future as it has in the past 3 decades. Population is not increasing as rapidly, and the number of children of school age is not likely to increase much over the next half century, and may decline. High birth rates of the war period will produce a rise in the number of pupils in schools a few years hence, but this may only be temporary. On the other hand, the need for teachers may increase out of proportion to any rise in the school age population, especially if educational standards are raised, if vocational schools, nursery schools, and adult-education facilities are expanded, or if a higher proportion of the young people go to college or professional schools. Teaching has lost many persons during the war because of the attraction of higher paying jobs in industries or Government, and many of the vacancies have been filled with less well-qualified teachers issued emergency certificates. There will probably be a good demand for well-trained teachers immediately after the war.

Local information about the teaching situation in and near your community may be gained from the superintendent of schools, from school board members, from your State Department of Education or Public Instruction, and from the colleges. There are 1,685 institutions of higher education in the United States; a majority of them train teachers and 204 are teachers colleges or normal schools. Regional teachers employment agencies will also give information and accept applications from those qualified to teach.

⁶ See table 4, p. 25.



6.—*Chemists*⁷

Experienced workers:			<i>Table 4</i>
1910.....	16,598		col. 2
1920.....	32,600		col. 3
1930.....	48,009		col. 4
1940: Number.....	60,005		col. 5
Percent unemployed.....	5.0		col. 6
Employed workers, 1940:			
Men:			
Total number.....	55,371		col. 7
Percent of all employed workers.....	97.1		col. 8
Class of worker:			
Private wage or salary workers.....	46,960		col. 9
Government workers.....	4,400		col. 10
Employers and own-account workers.....	2,080		col. 11
Women: Total number.....	1,654		col. 12

Census figures for chemists also include assayers and metallurgists, both relatively small professions. The spectacular growth of the field of chemistry is shown by the nearly fourfold increase in the number of chemists between 1910 and 1940. Opportunities for chemists have increased greatly during the war, and after the war there may be a temporary drop in employment from wartime levels. As chemical research and its industrial applications expand, however, there is every reason to believe that there will continue to be a demand for chemists in research, teaching, and analysis and control operations in industry. Unemployment among chemists in 1940 was relatively low. The large majority of chemists held jobs in private industry, although a few worked for government, either Federal, State, or local, and still fewer acted as employers.

Local information for your community concerning employment of chemists may be obtained from several sources, including the State college or university, industrial plants in your State, offices of the United States Employment Service, and chamber of commerce. In practically every State there are one or more colleges approved in chemistry. The following professional associations will also answer vocational questions: American Chemical Society, 1155 Sixteenth Street N.W., Washington 6, D. C.; and the American Institute of Chemists, 60 East Forty-second Street, New York 17, N. Y.

7.—*Welders*⁸

Experienced workers:			
1910.....	No data		
1920.....	No data		
1930.....	No data		<i>Table 4</i>
1940: Number.....	189,281		col. 5
Percent unemployed.....	10.4		col. 6
Employed workers, 1940:			
Men:			
Total number.....	122,688		col. 7
Percent of all employed workers.....	98.4		col. 8
Class of worker:			
Private wage or salary workers.....	111,360		col. 9
Government workers.....	4,760		col. 10
Employers and own-account workers.....	5,220		col. 11
Women: Total number.....	2,053		col. 12

⁷ See table 4, p. 24.⁸ See table 4, p. 27.

Figures for welders and flame-cutters are not available from the census before 1940. Welding is a good example of an occupation which has expanded greatly during the war, and which will probably contract shortly after the war. In 1940, before the wartime expansion, there were about 125,000 employed of whom about 11,000 were in the shipbuilding and aircraft industries. It is estimated that the number of welders tripled during the war, until more than 350,000 were employed. When munitions employment hit its peak in 1943 about half of these were in shipyards and aircraft plants. After the war, perhaps half of all the welders now employed will be unable to find jobs in that occupation, and those trained during the war to do machine welding and the simpler types of welding will be at a disadvantage when they try to compete with workers who have all-round welding experience.

Local conditions in your community may be determined by making contacts with whatever local metalworking industries, machine shops, shipbuilding and aircraft plants, and vocational schools are nearby. In this work, it will be found that skilled hands and steady nerves are more important assets for employment than any prescribed number of years in school.

PART III.—Definitions and Explanations

While census material represents the only *comprehensive* data in the field of occupations, users of these data should realize their limitations, as indicated in the text and footnotes of the various Census publications.

Census information is obtained by enumerators who go from house to house. Information is frequently obtained, not from the worker directly, but from the housewife or another member of the household who may be unable to describe accurately the worker's occupation and industry. The census enumerator himself may also lack the technical knowledge needed to distinguish closely related occupations and industries, and to select information most essential for accurate classification.

Other factors affecting the interpretation of census data—particularly in comparing statistics of different census years—are the changing practices of the Bureau of the Census in defining and classifying information for tabulation.

Some of the problems in analyzing the data which arise from these limitations are suggested in the following paragraphs.

“Experienced Workers”

In general there are two important considerations which complicate the use of the statistics on “experienced workers” (table 4, columns 2, 3, 4, and 5), especially for purposes of comparison of various census years. These major factors are: (1) Differences between the “gainful worker” concept of 1930 and previous censuses, and the “labor force” concept of 1940, and (2) differences in classification of occupations.

1.—*Concept of Labor Force*

The data presented on “experienced workers” are not fully comparable from year to year for each occupation. This arises because of the introduction in the 1940 census of a new concept of the working population. The figures presented in columns 2, 3, and 4 of table 4 include persons designated as “gainful workers” in the censuses of 1910, 1920, and 1930; but those in column 5 represent persons classified as in the “experienced labor force” in the 1940 census. The principal difference between the two concepts is that “gainful workers” include all persons who were reported as *usually following* a gainful occupation, regardless of whether working or seeking work at the time of the census, whereas “labor force” includes only persons working or seeking work *as of a particular week* to which the census refers.

The “total labor force” was defined in the 1940 census on the basis of the person's activity during the week of March 24 to 30, 1940, and includes all men and women who were—

(1) *Employed* either (a) at work on private or nonemergency government work or (b) not actually at work and not seeking work but with a job from which they were temporarily absent;

(2) *On public emergency work*—at work on, or assigned to, a public emergency work project (WPA, NYA, CCC, and State and local work relief); and

(3) *Seeking work*—without work of any sort and actively seeking work, subdivided into (a) experienced workers and (b) new workers, the latter being persons who had not previously worked full time for 1 month or more.

The “experienced labor force” includes all these groups except “new workers” (3b).

This change in concept leads to a considerable difference in the classification of seasonal workers, retired workers, new workers, and institutionalized persons. The net effect of these differences is that the “gainful worker” figures of 1910, 1920, and 1930 must be reduced by a relatively small amount and the “labor force” figures of 1940 raised slightly to make them comparable in concept. The Bureau of the Census has done this for the 1930 male and female labor force as a whole, but not by occupation. (For detailed discussion, see Sixteenth Census of the United States: 1940, Population, Comparative Occupation Statistics for the United States, 1870 to 1940, pp. 11-16.)

2.—*Classification of Occupations*

The occupational classifications used for the earlier censuses, including 1910, 1920, and 1930, differed in relatively minor respects only, so that the occupational statistics for these censuses are reasonably comparable. On the other hand, the classification adopted for the 1940 census differs considerably from that used for these earlier censuses with respect to both arrangement and content of occupational titles. Differences in classification of occupations are discussed further in the above-mentioned reference. Although adjustments have been made by the Bureau of the Census in the statistics herein presented to take care of differences in classification insofar as possible, certain limitations nevertheless exist. Some of these limitations arise from changes in the work content of occupations and in occupational terminology, others from changes in the Census schedule and in instructions to enumerators, and still others from changes in method of presentation.

A brief discussion of technical engineers may serve to illustrate some of the difficulties encountered in classifying occupations and making statistics over a number of years comparable. A considerable number of men who are trained professional engineers are not included in this classification because they are reported as executives, builders, contractors, and other workers. On the other hand, in each census there are probably men working below the professional level as helpers, assistants, stationary engineers, or other engine operators who were reported as technical engineers. In the 1940 census, but not in previous years, persons under 35 years of age reported as technical engineers were not coded as such unless they had at least 4 years of college education; this procedure probably reduced considerably the number of engineers reported by the census in 1940.

Obviously statistics for some occupations are less accurate than for others. In general, definite occupations such as physician, bricklayer, or plumber are more likely to be reported properly than such

occupations as pharmacist and drug-store proprietor both of which are sometimes reported as "druggist," or registered nurse and practical nurse, which are sometimes reported merely as "nurse." It is also likely that there is always more or less up-grading in enumerated occupational returns.

Unemployed, 1940

Unemployment data are shown by major occupation groups (table 2, column 10), by industries (table 3, columns 5 and 6), and by occupation (table 4, column 6).

The unemployed group, as shown in the tables, includes both persons reported to the Census as on public emergency work (WPA, NYA, CCC, local work relief and similar projects established to provide work for the unemployed), and experienced workers seeking work (see "Concept of Labor Force," p. 17). The occupation shown for an unemployed person refers to the one which he regarded as his usual occupation and at which he was still physically able to work at the time of the census. It should be noted that these figures, when shown for individual occupations, may reflect some seasonal unemployment because of the time of year when the enumeration was made. Also in a few occupations, for example "attendants and assistants, library," and some construction occupations, the data reflect the type of emergency work program in effect in 1940 in that emergency workers who never had other regular employment may have reported their assigned emergency occupations as their usual occupations. This not only affects the labor force figure for such an occupation but also gives a distorted unemployment figure for the particular occupation.

The statistics on the usual occupations of unemployed workers were obtained from a 5-percent sample of all persons enumerated by the Census. A discussion of sampling reliability is given in the introductory text of the 1940 Census publication, *The Labor Force (Sample Statistics), Occupational Characteristics*.

Class of Worker, 1940

Class-of-worker figures (table 4, columns 9, 10, and 11; and table 5) are taken from a 5-percent sample tabulation rather than a complete count. The *wage or salary worker* class consists of persons who worked as employees for wages or salary (in cash or kind). The group is divided into *private wage or salary workers* (column 9) and *government workers*, including all employees of Federal, State, or local governments (column 10). *Employers and own-account workers* (column 11) are persons who operated their own business enterprises. *Unpaid family workers*, a fourth class, are not shown (except in the case of farm laborers), because they are not numerous in most occupations listed. This group consists of persons who assisted without pay in enterprises operated by other members of their families.

Data on class of worker for women in occupations employing large numbers of women (those marked with a dagger "†" in column 12 in table 4) are detailed in table 5.

Major Occupation Groups, 1940

The 451 occupations of the Census classification are arranged into 11 major occupation groups (table 2, column 1). The content of each group is shown in detail in the Census pamphlet, *All Experienced Persons in the Labor Force by Occupation and Industry, for United States, 1940* (Series P-14, No. 13).

The major occupation groups are described as follows:

1. *Professional and semiprofessional workers.*—A professional worker is (1) one who “performs advisory, administrative, or research work which is based upon the established principles of a profession or science, and which requires professional, scientific, or technical training equivalent to that represented by graduation from a college or university of recognized standing”; or (2) one who performs work which is based upon the established facts, or principles, or methods in a restricted field of science or art, and which work requires for its performance an acquaintance with these established facts, or principles, or methods gained through academic study or through extensive practical experience, one or both.

Semiprofessional workers are typically confined to relatively restricted fields of activity: Designers, draftsmen, surveyors, aviators, chiropractors, funeral directors and embalmers, optometrists, photographers, radio and wireless operators, laboratory technicians, healers, dancers, athletes, showmen, and others.

2. *Clerical, sales, and kindred workers.*—Clerical workers, under supervision, perform one or more office activities. A sales person is one who, usually under supervision, sells commodities, insurance, real estate, securities, or services.

3. *Proprietors, managers, and officials, except farm.*—A proprietor is one who owns and operates his own business. A manager carries on all or a part of the business of another person or agency. An official (company, corporation, or agency) has large responsibilities concerning policies, planning, and supervision.

4. *Craftsmen, foremen, and kindred workers.*—A craftsman is one engaged in a manual pursuit usually calling for a high degree of dexterity and judgment and a long period of training or apprenticeship. A foreman directs other workers, under the supervision of a proprietor or a manager.

5. *Operatives and kindred workers.*—One engaged in a routine manual pursuit requiring a relatively short period of training, if any, and usually calling for the exercise of only a moderate degree of judgment or of manual dexterity, or of muscular force.

6. *Domestic service workers.*—One engaged in a personal service pursuit in a private home—housekeepers, laundresses, and servants.

7. *Protective service workers.*—Those engaged in protecting life or property—city firemen, guards, watchmen, detectives, soldiers, and law-enforcing officers.

8. *Service workers, except domestic and protective.*—Those engaged in cleaning and janitor services in buildings other than private homes—charwomen, janitors, or those performing services for other persons—barbers, cooks, waitresses, practical nurses, or ushers.

9. *Laborers, except farm and mine.*—Workers engaged in manual pursuits, usually routine, and requiring no special training, judgment or manual dexterity, and in which the worker usually supplies mainly muscular strength for the performance of coarse, heavy work.

10. *Farmers and farm managers.*—A farmer, as owner or tenant, operates a farm, for the production of crops, rearing of animals and care of their products, or other production. A farm manager performs the same work as a paid employee.

11. *Farm laborers and foremen.*—A farm laborer is a hired worker, or an unpaid member of a farm family who works on the farm. A farm foreman directs farm laborers, under the supervision of a farmer or a farm manager.

PART IV.—Summaries of Occupational Data from the Census

TABLE 1.—Employment Status of the Population, by Sex, for the United States, 1940

Population	Total persons	Males	Females
Total population.....	131,669,275	66,061,592	65,607,683
Under 14 years of age.....	30,566,351	15,507,844	15,058,507
Not in the labor force.....	48,313,425	10,609,508	37,703,917
Engaged in own home housework.....	28,981,869	267,125	28,664,744
In school.....	9,013,342	4,593,630	4,419,712
Unable to work.....	5,268,727	2,966,225	2,302,502
In institutions.....	1,176,993	767,474	409,519
Other and not reported.....	3,922,494	2,015,054	1,907,440
In the labor force.....	52,789,499	39,944,240	12,845,259
Employed.....	45,166,083	34,027,905	11,138,178
Public emergency work (WPA, NYA, CCC, etc.).....	2,529,606	2,072,094	457,512
Seeking work:			
Experienced.....	4,326,469	3,381,881	944,588
New workers.....	767,341	462,360	304,981

SOURCE: Sixteenth Census of Population: 1940. The Labor Force, Part I, U. S. Summary, Vol. III, Introduction, table 1, p. 3.

TABLE 2.—MAJOR OCCUPATION GROUPS (Experienced Labor Force, by Sex, Including Employed and Unemployed Workers, 1940)

Major occupation group ¹	Total ²	Men ²	Women ²	Percent distribution by occupation group			Men and women as a percent of each occupation group		Unemployed as a percent of each occupation group
				Total	Men	Women	Men	Women	
1	2	3	4	5	6	7	8	9	10
Total, all occupations.....	52,020,023	39,445,945	12,574,078	100.0	100.0	100.0	75.8	24.2	13.2
Professional and semiprofessional workers.....	3,558,428	2,012,587	1,545,841	6.8	5.1	12.3	56.6	43.4	6.0
Professional workers.....	3,048,472	1,609,298	1,439,174	5.8	4.1	11.5	52.8	47.2	5.5
Semiprofessional workers.....	509,956	403,289	106,667	1.0	1.0	.8	79.1	20.9	9.1
Farmers and farm managers.....	5,802,774	5,148,695	154,079	10.2	13.1	1.2	97.1	2.9	3.0
Proprietors, managers, and officials, except farm.....	3,854,187	3,423,107	431,080	7.4	8.7	3.4	83.8	11.2	2.7
Clerical, sales, and kindred workers.....	3,270,270	4,791,588	3,478,682	15.9	12.1	27.7	57.9	42.1	9.1
Craftsmen, foremen, and kindred workers.....	5,952,482	5,830,832	121,650	11.4	14.7	1.0	98.0	2.0	15.1
Operatives and kindred workers.....	9,476,597	7,125,098	2,351,499	18.2	18.1	18.7	75.2	24.8	12.9
Domestic service workers.....	2,349,394	161,411	2,187,983	4.5	.4	17.4	6.9	93.1	10.1
Protective service workers.....	714,594	709,873	4,721	1.4	1.8	(³)	99.3	.7	4.6
Service workers, except domestic and protective.....	3,115,740	1,719,702	1,396,038	6.0	4.4	11.1	55.2	44.8	10.9
Farm laborers and foremen.....	3,530,550	3,190,885	339,665	6.8	8.1	2.7	90.4	9.6	12.5
Laborers, except farm and mine.....	4,612,268	4,490,678	121,595	8.9	11.4	1.0	97.4	2.6	33.6
Occupation not reported.....	1,282,739	841,494	441,245	2.5	2.1	3.5	65.6	34.4	70.5

¹ For Census definitions of these groups, see Part III, p. 20.

² Includes employed persons, public emergency workers, and experienced persons seeking work. Figures for other than employed are from a 5-percent sample, and, therefore, totals do not exactly correspond to figures in table 1 on labor force minus new workers.

³ Less than a tenth of 1 percent.

SOURCE: Sixteenth Census of Population: 1940. Columns 2, 3, and 4 from series P-14, No. 13, All Experienced Persons in the Labor Force by Occupation and Industry, for the United States: 1940, Table 1, pp. 3-8. Columns 5, 6, 7, 8, 9, and 10 computed by Bureau of Labor Statistics. (Unemployed, column 10, is a combination of figures for persons on public emergency work and for experienced persons seeking work, taken as a percent of the total experienced labor force for each occupation group).

TABLE 3.—INDUSTRIES (Experienced Labor Force, Including Employed and Unemployed Workers, 1940)

Industry 1	Number ¹ 2	Employed		Unemployed ²	
		Number 3	Men as a percent of total 4	Number 5	Percent of column 2 6
Total, all industries.....	52,020,023	45,166,088	75.3	6,853,940	13.2
Agriculture, forestry, and fishery.....	9,141,112	8,475,432	94.3	665,680	7.3
Mining.....	1,109,860	913,000	98.3	196,860	17.7
Construction.....	3,508,434	2,056,274	98.3	1,452,160	41.4
Manufacturing.....	11,756,382	10,572,842	78.0	1,183,540	10.1
Food and kindred products.....	1,212,423	1,093,628	81.8	118,800	9.8
Tobacco manufactures.....	124,645	107,965	45.8	16,680	13.4
Textile-mill products.....	1,293,104	1,170,024	59.2	123,080	9.5
Apparel and other fabricated textile products.....	958,784	780,664	84.0	178,120	18.6
Lumber, furniture, and lumber products.....	1,069,617	988,577	94.4	181,040	12.3
Paper and allied products.....	350,481	328,241	78.1	22,240	6.3
Printing, publishing, and allied industries.....	683,237	630,677	79.5	52,560	7.7
Chemicals and allied products.....	466,685	439,845	82.4	26,840	5.8
Petroleum and coal products.....	212,020	201,180	92.9	10,840	5.1
Rubber products.....	173,481	159,021	76.9	14,460	8.3
Leather and leather products.....	407,133	364,443	61.9	42,740	10.5
Stone, clay, and glass products.....	372,905	336,745	87.2	36,160	9.7
Iron and steel and their products.....	1,411,715	1,263,215	92.6	148,500	10.5
Nonferrous metals and their products.....	303,074	279,454	85.7	23,620	7.8
Machinery.....	1,148,010	1,072,250	84.8	75,760	6.6
Transportation equipment.....	982,403	880,803	93.2	81,600	8.5
Other manufacturing industries.....	606,610	526,110	71.3	80,500	13.3
Transportation, communication, and other public utilities.....	3,410,553	3,113,353	88.9	297,200	8.7
Transportation.....	2,429,451	2,177,671	96.4	251,780	10.4
Communication.....	410,480	393,300	46.5	17,180	4.2
Utilities.....	570,622	542,382	89.5	28,240	4.9
Trade, wholesale and retail.....	8,201,728	7,538,768	73.1	662,960	8.1
Wholesale trade.....	1,294,001	1,206,761	84.9	87,240	6.7
Retail trade.....	6,907,727	6,332,007	70.8	575,720	8.3
Finance, insurance, and real estate.....	1,548,557	1,467,597	69.0	80,960	5.2
Business and repair services.....	983,614	864,254	91.1	119,360	12.1
Personal services.....	4,439,257	4,009,317	28.3	429,940	9.7
Amusement, recreation, and related services.....	481,482	395,342	79.9	86,140	17.9
Professional and related services.....	3,519,281	3,317,581	44.4	201,700	5.7
Government.....	1,867,507	1,753,487	80.6	114,020	6.1
Industry not reported.....	2,052,256	688,836	65.4	1,363,420	66.4

¹ Includes employed persons, public emergency workers, and experienced persons seeking work. Figures for other than employed are from a 5-percent sample, and, therefore, totals do not exactly correspond to figures in table 1 on labor force minus new workers.

² Includes public emergency workers and experienced persons seeking work.

Source: Sixteenth Census of Population: 1940. Columns 2, 3, and 5 from Series P-14, No. 13, All Experienced Persons in the Labor Force by Occupation and Industry for the United States: 1940, table 2, pp. 9-10. Columns 4 and 6 computed by Bureau of Labor Statistics.

TABLE 4.—Employment Information for Selected Occupations

[For explanation of items marked with an asterisk (*) see Part III; n. e. c.—“not elsewhere classified”]

Selected occupations 1	Experienced workers *					Employed workers, 1940					
	1910 2	1920 3	1930 4	1940		Men					Women 12
				Number 5	Percent unem- ployed * 6	Total number 7	Percent of all em- ployed persons 8	Class of worker			
								Private wage or salary workers * 9	Govern- ment workers * 10	Em- ployers and own- account workers * 11	
Professional and semiprofessional											
Medical and related fields:											
Chiropractors.....	6,971	15,069	30,147	10,869	2.2	8,758	82.4				1,871
Healers and medical service workers, n. e. c. }				20,575	5.0	10,045	51.4				9,510
Dentists.....	39,597	55,590	70,344	70,601	0.7	69,074	98.4	2,420	1,140	65,480	1,047
Optometrists.....				10,357	1.2	9,762	95.4				475
Osteopaths.....		5,030	6,117	6,067	1.0	4,905	81.7	120	20	5,400	1,102
Physicians and surgeons.....	151,132	144,977	153,803	165,629	0.6	157,041	95.4	17,600	14,420	124,460	7,608
Pharmacists.....				89,187	4.6	76,131	95.9	39,580	2,780	35,940	3,216
Trained nurses and student nurses.....	82,327	149,128	294,189	371,066	4.1	7,509	2.1	4,700	2,740	880	† 348,277
Veterinarians.....	11,652	13,494	11,863	10,957	2.2	10,638	99.3	360	1,880	8,000	79
Engineering and technical fields:											
Chemical engineers.....	6,980	6,695	11,970	11,600	4.1	11,081	99.6				39
Mining and metallurgical engineers.....				9,778	9.8	8,739	99.2				74
Civil engineers.....	52,031	64,660	102,086	89,042	9.7	80,171	99.8	33,060	43,440	4,880	191
Surveyors.....				16,444	18.9	13,243	99.2	4,500	7.960		1,180
Electrical engineers.....	15,125	26,806	57,259	55,667	4.3	53,103	99.7	47,780	4,760	1,420	164
Industrial engineers.....				9,803	5.3	9,209	99.2				74
Mechanical engineers.....	15,385	39,950	57,617	85,543	3.6	82,255	99.8	68,600	7,040	5,080	188
Architects.....	17,444	19,094	23,100	21,976	7.3	19,899	97.7	6,700	3,020	9,920	477
Aviators.....		1,417	6,585	6,299	6.7	5,828	99.1				51
Chemists, assayers, and metallurgists.....	16,598	33,600	48,009	60,005	5.0	55,371	97.1	46,960	4,400	2,080	1,654
Designers.....	11,788	15,410	20,508	23,614	9.7	13,643	63.9				7,691
Draftsmen.....	32,315	51,279	77,524	88,191	9.8	73,177	98.2	76,360	12,680	2,960	1,414
Radio and wireless operators.....				11,573	10.2	10,296	99.1				97
Technicians and assistants, laboratory.....				67,158	6.2	41,487	65.9				21,511
Technicians, except laboratory.....				8,088	9.1	6,567	89.4				781

Educational and related fields:				
College presidents, professors, and instructors.....	15,825	33,741	62,524	75,847
Librarians.....	7,849	15,144	29,817	38,607
County agents and farm demonstrators.....			4,590	10,721
Teachers, n. e. c.....	595,285	752,055	1,044,016	1,065,280
Other professional and semiprofessional occupations:				
Actors and actresses.....				19,232
Dancers, dancing teachers, and chorus girls.....				13,773
Athletes.....				9,162
Showmen.....				6,773
Sports instructors and officials.....				24,546
Authors.....	4,324	6,600	12,325	14,126
Editors and reporters.....			61,694	63,493
Clergymen.....	115,658	124,725	145,871	140,077
Funeral directors and embalmers.....	20,734	24,469	34,132	39,590
Lawyers and judges.....	114,704	122,519	160,605	180,483
Artists and art teachers.....	34,094	35,390	57,253	62,485
Musicians and music teachers.....	140,503	131,467	166,694	161,536
Social and welfare workers.....			64,797	75,197
Religious workers.....	16,497	42,444	64,797	35,172
Photographers.....			32,805	37,641
Professional workers, n. e. c.....				90,492
Semiprofessional workers, n. e. c.....				80,131
Clerical and related occupations (not assigned to specific industry groups)				
Agents, n. e. c.....			82,256	92,341
Attendants, physicians' and dentists' offices.....	5,706	12,739	25,799	31,209
Attendants and assistants, library.....			2,010	20,203
Bookkeepers, accountants, and cashiers.....	491,517	742,085	989,954	931,308
Ticket, station, and express agents.....	37,207	39,396	41,194	40,377
Collectors, bill and account.....	36,097	31,036	43,764	43,990
Office machine operators.....			36,182	64,178
Shipping and receiving clerks.....				229,737
Stenographers, typists, and secretaries.....				1,174,886
Clerical and kindred workers, n. e. c.....				1,973,604
Agriculture				
Farmers (owners and tenants).....	6,132,368	6,387,358	6,012,012	5,265,271
Farm managers.....				37,508
Farm foremen.....	52,811	96,940	70,583	25,275
Farm laborers (wage workers).....	2,658,771	2,217,265	2,606,004	2,812,085
Farm laborers (unpaid family workers).....	2,637,549	1,548,132	1,472,618	1,193,240

SUMMARIES OF CENSUS OCCUPATIONAL DATA

25

1.1	55,123	73.5	27,520	27,500	100	19,884
5.9	3,801	10.5				† 32,546
4.5	5,845	57.1				† 4,396
4.3	247,716	24.3	23,380	233,400	3,580	† 772,044
39.2	6,931	59.3	6,120	140	560	† 4,761
18.6	2,180	19.4				9,033
21.6	6,990	97.3				192
21.3	4,498	84.2	17,780	8,340	5,580	840
13.0	17,484	81.9				3,862
16.4	8,020	67.9				3,786
8.3	43,503	74.7	39,880	1,200	10,000	14,750
2.5	133,449	97.7	133,440	480	800	3,148
4.1	35,856	94.4				2,114
1.6	173,456	97.6	27,400	20,600	128,400	4,187
16.8	34,478	66.3	20,740	1,440	11,600	† 17,507
20.0	69,800	54.0	41,760	7,780	19,540	† 59,456
7.3	24,868	35.7				† 44,809
1.4	8,798	25.4	9,040	17,500	120	25,874
10.5	29,078	86.3				4,623
7.2	59,002	70.2				25,010
11.7	61,584	87.1				9,147
4.0	80,040	90.3				8,601
6.1	1,387	4.7				27,922
55.5	1,955	21.8				7,028
8.0	410,243	47.9	388,160	38,440	19,540	† 446,205
2.1	37,363	94.5				† 2,154
5.2	38,374	92.0				3,316
6.9	8,284	13.9	5,260	2,340	100	† 51,454
8.9	200,669	95.9	199,060	1,080		8,668
10.0	68,805	6.5	53,860	15,260	600	† 988,081
10.5	1,134,933	64.3				630,471
3.0	4,955,624	97.0				151,087
1.6	36,091	97.8	36,160	1,360	4,959,260	812
3.2	24,240	99.0				235
17.8	1,803,924	94.9	1,796,720	9,000		96,491
2.4	941,841	80.8				223,279

TABLE 4.—*Employment Information for Selected Occupations—Continued*
 [For explanation of items marked with an asterisk (*) see Part III; n. e. c.—“not elsewhere classified”]

Selected occupations 1	Experienced workers *					Employed workers, 1940					
	1910 2	1920 3	1930 4	1940		Total number 7	Percent of all em- ployed persons 8	Class of worker			Women Total number 12
				Number 5	Percent unem- ployed * 6			Private wage or salary workers * 9	Govern- ment workers * 10	Em- ployers and own- account workers * 11	
Mining											
Foremen, n. e. c.-----			30,073	28,244	6.2	26,443	99.8				41
Inspectors, n. e. c.-----			6,995	7,313	4.6	6,954	99.7				19
Mine operatives and laborers-----	882,587	982,470	887,434	824,098	21.0	649,226	99.7	621,380	1,440	19,540	1,787
Proprietors, managers, and officials, n. e. c.-----			31,241	32,001	3.6	30,447	98.7	14,420	440	16,460	394
Occupations principally employed in construction											
Asbestos and insulation workers-----				6,399	13.4	5,464	93.6				75
Brickmasons, stonemasons, and tile setters-----	169,402	131,264	170,903	141,690	34.1	93,024	99.7	81,540	3,020	20,260	306
Stonecutters and stone carvers-----	32,515	20,110	20,823	14,286	36.3	9,065	99.5				41
Carpenters-----	808,949	878,505	920,132	766,213	27.1	556,918	99.8	403,420	16,800	131,320	1,395
Carpenters' apprentices-----			3,889	7,428	25.6	5,485	99.2				48
Proprietors, managers, and officials, n. e. c., construction-----			191,064	125,696	8.5	113,898	99.0				1,095
Foremen, n. e. c., construction-----			45,326	74,663	39.0	45,394	99.7	23,640	25,100		129
Inspectors, n. e. c., construction-----				5,190	14.3	4,336	97.4				
Painters, construction and maintenance-----			441,390	442,659	27.2	319,948	99.3				2,211
Paperhangers-----	25,577	18,746	23,323	29,994	15.3	23,877	94.0	196,480	9,900	141,900	1,537
Glaziers-----				7,643	13.1	6,547	98.5				
Plasterers-----	47,682	38,255	70,053	52,878	26.3	38,792	99.6	38,260	1,520	12,520	166
Cement and concrete finishers-----		7,773	15,736	26,682	50.6	13,134	99.6				48
Plumbers, and gas and steam fitters-----	146,821	204,651	235,436	210,815	17.5	173,385	99.7	118,320	8,700	46,220	530
Plumbers' apprentices-----			5,639	5,311	12.8	4,518	97.6				113
Roofers and slaters-----	14,078	11,378	23,636	32,720	25.1	24,432	99.6				88
Tinsmiths, coppersmiths, and sheet-metal workers-----	60,431	75,718	84,261	91,595	13.1	79,283	99.6	80,420	5,940	17,880	332
Structural and ornamental metalworkers-----				38,631	27.6	27,769	99.3				24,180

Occupations principally employed in manufacturing				
Food and kindred products:				
Bakers.....	88,258	91,084	180,944	144,296
Foremen, n. e. c.....			28,119	30,355
Millers, grain, flour, feed, etc.....	22,919	28,089	15,787	15,608
Textile-mill products:				
Dyers.....			19,489	24,898
Foremen, n. e. c.....			43,570	49,073
Loom fixers.....			18,639	24,694
Lumber, furniture, and lumber products:				
Cabinetmakers.....	42,311	45,966	58,476	58,837
Pattern and model makers, except paper.....	24,973	29,333	31,535	33,033
Foremen, n. e. c.....			25,521	23,473
Inspectors, scalars, and graders, log and lumber.....				16,558
Sawyers.....	44,992	35,161	37,507	46,915
Upholsterers.....			42,191	42,585
Printing, publishing, and allied industries:				
Apprentices, printing trades.....			9,912	10,020
Compositors and typesetters.....	125,038	137,362	179,959	174,312
Electrotypers and stereotypers.....	4,324	5,489	7,746	8,251
Engravers, except photoengravers.....	21,884	23,042	28,022	8,571
Photoengravers and lithographers.....				22,541
Pressmen and plate printers.....	21,088	19,617	32,776	35,777
Foremen, n. e. c.....			19,027	19,469
Metalworking and related industries:				
Blacksmiths, forgemen, and hammermen.....				37,166
Boilermakers.....			42,435	32,982
Buffers and polishers, metal.....	30,492	30,503	35,202	45,035
Filers, metal.....				10,952
Foremen, n. e. c.....			109,868	112,939
Furnacemen, smeltermen, and pourers.....			20,855	33,932
Grinders, metal.....	8,441	17,582	25,729	45,902
Heat treaters, annealers, and temperers.....				10,377
Heaters, metal.....	9,611	15,640	14,195	11,081
Jewelers, watchmakers, goldsmiths, and silversmiths.....	30,945	37,612	36,729	36,382
Machinists.....				521,093
Millwrights.....	17,442	37,669	42,012	43,595
Tool makers, and die makers and setters.....				14,198
Machinists' apprentices.....			10,848	96,385
Molders, metal.....			94,442	37,624
Rollers and roll hands, metal.....	17,487	23,808	29,227	30,447
Welders and flame-cutters.....				139,281
Occupations principally employed in or related to transportation, communication, and other public utilities				
Baggagemen, transportation.....				6,099
Express messengers and railway mail clerks.....	34,417	37,002	34,914	22,337

SUMMARIES OF CENSUS OCCUPATIONAL DATA

10.6	119,089	92.2	98,160	1,840	21,120	10,017
8.9	25,919	88.8				3,256
5.5	14,667	99.5				81
11.7	21,334	97.1				644
10.8	31,298	71.5				12,455
9.2	22,818	99.6				96
14.0	50,236	99.3	67,960	4,120	10,500	361
5.3	31,027	99.2				246
4.2	22,015	97.9				478
12.6	14,116	97.5				362
10.2	41,864	99.4				271
10.7	36,191	95.1				1,854
6.6	9,140	97.6				220
9.3	150,647	95.3	129,100	2,580	17,400	7,425
3.4	7,893	99.0				78
8.2	7,242	92.0				629
6.9	20,548	97.9				433
8.0	32,389	98.5				508
3.4	16,741	89.0				2,068
17.1	72,034	99.7	41,780	3,040	25,440	212
16.1	27,589	99.7	25,460	1,340	640	73
12.0	37,609	94.9				2,026
13.5	9,027	95.3				445
2.2	107,924	97.7				2,575
10.2	30,225	99.2				247
7.5	41,846	98.5				616
6.3	10,122	99.3				75
16.8	9,085	98.5				136
8.5	31,957	96.1				1,295
8.4	472,769	99.0	566,660	30,500	6,920	4,604
9.0	39,566	99.8				89
4.3	92,371	99.6				374
4.4	13,505	99.5				73
13.4	75,559	99.5	74,300	560	320	845
12.8	26,439	99.6	26,360			108
10.4	122,688	98.4	111,360	4,760	5,220	2,053
2.3	5,959	100.0	10,140	17,040	40	-----
1.9	21,800	99.5				117

TABLE 4.—*Employment Information for Selected Occupations—Continued*

[For explanation of items marked with an asterisk (*) see Part III; n. e. c.—“not elsewhere classified”]

Selected occupations 1	Experienced workers *					Employed workers, 1940					Total number 12	
	1910 2	1920 3	1930 4	1940		Men						Women
				Number 5	Percent unem- ployed * 6	Total number 7	Percent of all em- ployed persons 8	Class of worker				
								Private wage or salary workers * 9	Government workers * 10	Em- ployers and own- account workers * 11		
Occupations principally employed in or related to transportation, communication, and other public utilities—Continued												
Brakemen and switchmen, railroad				116,732	8.0	107,432	100.0	106,860	360			
Chauffeurs and drivers, bus, taxi, truck, and tractor	279,604	463,633	1,173,796	1,339,888	16.3	1,115,157	99.5				5,951	
Deliverymen				428,153	9.5	334,815	99.4	1,209,420	104,920	175,180	2,498	
Conductors, bus and street railway	56,932	63,760	36,699	17,785	4.9	16,751	99.1	14,730	1,440		154	
Conductors, railroad	65,604	74,539	73,332	47,465	2.7	46,135	100.0	46,730	60			
Foremen, n. e. c.:												
Communication	3,574	6,344	10,407	8,474	1.2	8,153	97.4				221	
Miscellaneous transportation				11,566	3.3	11,038	99.3				30	
Railroads (including railroad repair shops)			80,394	49,573	3.1	47,912	99.8				101	
Street railways and bus lines	4,953	6,623	6,177	4,203	1.0	4,143	99.5				20	
Utilities				21,931	2.4	21,120	98.6				291	
Inspectors, n. e. c.:												
Communication and utilities				8,249	2.4	7,234	89.9				815	
Railroads (including railroad repair shops)	27,938	43,148	39,470	29,496	3.9	28,261	99.7				75	
Transportation, except railroad			5,616	5,226	2.7	5,005	98.4				81	
Linemen and servicemen, telegraph, telephone, and power			107,591	110,816	5.7	103,501	99.0	101,100	4,740		995	
Locomotive engineers	108,588	124,305	114,351	72,396	4.0	69,496	100.0	68,480	240			
Locomotive firemen	76,381	91,345	67,096	48,851	10.2	43,851	100.0	43,520	60			
Mechanics and repairmen:												
Airplane				28,334	5.8	26,607	99.6				117	
Railroad and car shop				43,998	8.6	40,218	100.0					
Motormen, street, subway, and elevated railway	56,218	62,959	57,969	38,330	4.2	36,572	99.5				138	

Officers, pilots, pursers, and engineers, ship	43,563	47,065	46,834	35,155
Proprietors, managers, and officials, n. e. c.:				
Communication	9,786	11,255	20,158	23,361
Miscellaneous transportation			10,559	13,303
Railroads (including railroad repair shops)			34,132	32,242
Street railways and bus lines				5,827
Taxicab service	17,490	26,143	43,352	2,892
Trucking service				27,163
Utilities				29,747
Warehousing and storage			7,980	7,599
Sailors and deck hands, except U. S. Navy	34,156	52,066	61,457	46,078
Telegraph operators			53,579	42,562
Telephone operators	97,731	190,006	248,317	208,319
Occupations principally employed in trade, service, and related industries				
Advertising agents				35,692
Attendants, filing station, parking lot, garage, and airport				234,095
Auctioneers			3,767	3,537
Automobile mechanics and repairmen				441,845
Barbers, beauticians, and manicurists	195,124	216,095	374,215	440,111
Buyers and department heads, store				72,436
Canvassers and solicitors				96,394
"Clerks" in stores			393,558	525,591
Country buyers and shippers of livestock and other farm products			45,307	40,416
Credit men			22,490	31,110
Decorators and window dressers			24,532	29,818
Demonstrators	4,511	4,968	7,759	10,521
Dressmakers and seamstresses (not in factory)			194,807	165,031
Floormen and floor managers, store				7,173
Foremen, n. e. c.:				
Business and repair services			8,925	6,164
Personal services			7,514	7,400
Wholesale and retail trade				31,951
Fruit and vegetable graders and packers, except cannery			10,904	25,965
Inspectors, n. e. c., wholesale and retail trade				5,300
Insurance agents and brokers	87,578	118,719	254,358	249,322
Meatcutters, except slaughter and packing houses				156,892
Milliners (not in factory)				12,375
Motion picture projectionists				23,375
Photographic process workers				15,102
Piano and organ tuners	6,633	7,047	6,823	5,219
Proprietors, managers, and officials, n. e. c.:				
Business and repair services				88,231
Eating and drinking places	139,371	114,283	178,633	273,163
Finance, insurance, and real estate				190,608
Personal services				126,387

SUMMARIES OF CENSUS OCCUPATIONAL DATA 29

11.6	30,978	99.7				97
0.4	20,080	86.1				3,231
2.7	12,451	96.2				492
1.2	31,561	99.1				281
2.1	5,543	97.1				164
2.1	2,699	95.3				133
1.8	25,864	96.9				819
1.0	23,850	98.0				597
2.4	7,234	97.5				185
23.3	35,221	99.6	31,000	2,900	260	137
6.5	31,554	79.3	32,080	360		8,228
4.1	10,697	5.4	9,180	1,060	80	† 189,002
5.5	30,110	89.3				3,602
8.9	209,449	98.2	205,440	540	620	3,866
7.4	3,134	95.6				143
14.7	375,796	99.7				1,189
5.5	209,439	50.3	78,740	660	131,220	† 206,592
4.0	51,935	74.7				17,581
6.5	72,995	81.0	54,200	340	17,660	17,099
10.0	271,890	57.5				201,281
4.7	38,007	98.7				509
3.7	26,307	87.8				3,643
8.6	21,106	77.4				6,152
14.8	1,558	17.4				7,408
17.6	2,324	1.7	1,380		1,300	† 183,627
4.2	4,672	68.0				2,201
1.0	5,892	96.5				212
5.4	4,314	61.6				2,686
3.2	28,422	91.9				2,509
14.8	9,333	42.2				12,792
9.1	3,162	65.6				1,658
4.1	226,061	94.5	177,960	240	52,220	13,081
10.1	140,088	99.3				984
9.9	650	5.8				10,505
6.4	22,099	98.9				256
4.6	3,951	62.1				5,471
7.3	4,794	99.1				45
1.9	82,288	95.0				4,303
2.8	200,519	75.5	25,860	120	171,700	† 65,064
1.9	174,668	93.4	137,840	2,580	35,500	12,300
2.5	91,572	74.3	25,140	100	64,980	† 31,655

TABLE 4.—Employment Information for Selected Occupations—Continued

[For explanation of items marked with an asterisk (*) see Part III; n. e. c.—“not elsewhere classified”]

Selected occupations 1	Experienced workers *					Employed workers, 1940					
	1910 2	1920 3	1930 4	1940		Men					Women 12
				Number 5	Percent unem- ployed * 6	Total number 7	Percent of all em- ployed persons 8	Class of worker			
								Private wage or salary workers * 9	Government workers * 10	Em- ployers and own- account workers * 11	
Occupations principally employed in trade, service, and related industries—Continued											
Proprietors, managers, officials, n. e. c.—Con. Wholesale and retail trade, except eating and drinking places:											
Wholesale trade.....				240,686	2.6	227,334	97.0	87,280	-----	140,400	† 6,992
Retail trade (including pharmacists; milliners, not in factory; and meat- cutters, except slaughter and pack- ing house).....	1,278,071	1,423,018	1,800,181	1,686,196	3.0	1,459,192	89.2	-----	-----	-----	176,704
Retail trade (excluding above occupa- tions).....	-----	-----	-----	1,433,762	2.1	1,242,323	88.5	252,020	1,540	989,680	† 161,999
Purchasing agents and buyers, n. e. c.....	-----	-----	28,124	33,359	5.4	28,966	91.8	-----	-----	-----	2,598
Real estate agents and brokers.....	-----	-----	-----	116,990	5.0	100,856	90.8	38,260	60	61,580	10,254
Salesmen, finance, brokerage and commission firms.....	-----	-----	-----	20,307	7.9	18,327	98.0	-----	-----	-----	330
Salesmen and saleswomen, n. e. c.....	-----	-----	-----	1,420,100	11.0	747,881	59.2	-----	-----	-----	515,539
Shoemakers and repairers (not in factory).....	68,856	78,002	75,602	65,675	8.3	59,609	99.0	14,980	200	42,940	586
Tailors and tailoresses.....	202,562	190,310	167,590	118,797	9.4	92,880	86.3	66,460	260	40,200	14,697
Furriers.....	-----	-----	-----	17,155	18.9	12,142	87.3				
Traveling salesmen and sales agents.....	-----	-----	-----	632,667	6.4	579,423	97.8	-----	-----	-----	12,904
Government occupations											
Foremen, n. e. c.....	-----	-----	-----	10,829	9.4	9,411	95.9	-----	-----	-----	398
Firemen, fire department.....	34,894	49,756	71,548	78,322	1.3	77,782	100.0	-----	77,360	-----	-----
Mail carriers.....	79,852	90,509	120,106	122,910	1.7	119,246	98.7	-----	119,700	-----	1,524
Policemen and detectives, government.....	-----	-----	-----	130,958	2.4	126,977	99.3	-----	-----	-----	881
Postmasters.....	27,849	31,985	34,421	39,160	1.4	22,239	57.6	-----	-----	-----	16,381
Miscellaneous government officials, except post- masters.....	80,486	108,074	188,638	200,653	3.5	176,138	91.0	-----	197,440	-----	17,515

Occupations not principally found in any single industry											
Blasters and powdermen				6,988	85.2	4,485	99.7			13	
Firemen, except locomotive and fire department	116,782	151,069	188,659	127,455	11.8	112,612	99.7	99,700	14,100	383	
Motormen (vehicle), mine, factory, logging camp, etc.				17,988	6.9	16,709	99.8			39	
Oilers, machinery			84,643	89,498	9.3	85,643	99.5			195	
Painters, except construction and maintenance			90,557	100,726	11.6	82,768	98.0	77,380	800	6,258	
Cranemen, hoistmen, and construction machinery operators			302,469	120,190	15.2	101,613	99.7	246,040	38,500	1,180	
Stationary engineers				200,095	7.9	183,739	99.7			257	
Electricians	119,089	210,884	277,514	227,102	13.2	196,526	99.6	152,720	17,040	27,160	
Power station operators				22,845	2.0	21,285	97.2	18,520	1,740		620
Electricians' apprentices				4,370	10.5	3,046	99.2				24

† See table 5.

SOURCE: Columns 2, 3, 4, and 5 from Comparative Occupation Statistics for the United States, 1870 to 1940, tables 2 and 3, pp. 49-62. Column 6 computed by Bureau of Labor Statistics from Series P-14, No. 13, All Experienced Persons in the Labor Force by Occupation and Industry for the United States: 1940, table 1, pp. 3-8. Columns 7, 8, and 12 from The Labor Force, Part I, U. S. Summary, Vol. III, table 58, pp. 75-80. Columns 9, 10, and 11 from The Labor Force (Sample Statistics), Occupational Characteristics, table 6, pp. 119-120.

TABLE 5.—*Class of Worker of Employed Women for Selected Occupations, 1940*
[n. e. c.—“not elsewhere classified”]

Selected occupations	Class of worker ¹		
	Private wage or salary workers	Government workers	Employers and own-account workers
Trained nurses and student nurses.....	243,460	70,640	25,600
Librarians.....	7,260	25,000	120
Teachers, n. e. c. (including county agents).....	91,960	669,900	7,400
Actresses.....	4,140	120	700
Artists and art teachers.....	9,500	3,160	5,440
Musicians and music teachers.....	19,320	9,240	31,900
Social and welfare workers.....	15,380	28,580	200
Bookkeepers, accountants, cashiers, and ticket agents.....	414,840	17,980	1,700
Office machine operators.....	46,720	6,600	120
Stenographers, typists, and secretaries.....	827,720	164,400	3,000
Telephone operators.....	184,200	4,680	140
Barbers, beauticians, and manicurists.....	116,560	220	90,100
Dressmakers and seamstresses (not in factory).....	61,740	1,400	70,400
Proprietors, managers, and officials, n. e. c.:			
Eating and drinking places.....	7,600	120	53,620
Other wholesale and retail trade.....	23,900	40	140,380
Personal services.....	7,860	20	21,760

¹ See Part III.

SOURCE: Sixteenth Census of Population: 1940. From The Labor Force (Sample Statistics), Occupational Characteristics, table 6, pp. 121-122.

Selected References

Selected publications from the Sixteenth Decennial Census of Population, 1940

Releases

Single copies of releases are obtainable free of charge from the Bureau of the Census, Washington 25, D. C., as long as the supply lasts.

All Experienced Persons in the Labor Force by Occupation and Industry, for the United States: 1940. Series P-14, No. 13. 10 pp.

Occupations of Employed Persons in Each Industry, for the United States: March 1940. Series P-14, No. 11. 37 pp.

Comparative Occupation and Industry Statistics for the United States: 1940 and 1930. Series P-44, No. 1. 16 pp.

Occupation Statistics for States. Series P-11, available for each State.

Industrial Classification of Persons 14 Years Old and Over in the Labor Force: 1940. Series P-13, available for each State.

Reports

Copies of reports are obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at the price shown.

Comparative Occupation Statistics for the United States, 1870 to 1940. A comparison of the 1930 and 1940 Census occupation and industry classifications and statistics; a comparable series of occupation statistics, 1870 to 1930; and a social-economic grouping of the labor force, 1910 to 1940. 206 pp. \$1.50.

The Labor Force (Sample Statistics), Occupational Characteristics. 256 pp. 50 cents.

The Labor Force (Sample Statistics), Usual Occupation. 63 pp. 15 cents.

The Labor Force (Sample Statistics), Industrial Characteristics. 174 pp. 40 cents.

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Alphabetical Index of Occupations and Industries: 1940. 607 pp. \$1.25.

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