

# Occupational Information Included in the *Handbook*

The *Occupational Outlook Handbook* is best used as a reference; it is not meant to be read from cover to cover. Instead, start by looking at the table of contents, in which related occupations are grouped in clusters, or look in the alphabetical index in the back of the *Handbook* for specific occupations that interest you. For any occupation that sounds interesting, use the Handbook to learn about the type of work that is performed in the occupation, the working conditions, the education and training requirements, the possibilities for advancement, earnings in the occupation, the job outlook, and related occupations. Each occupational statement, or description, in the *Handbook* follows a standard format, making it easier for you to compare occupations.

Two previous sections—“Tomorrow’s Jobs” and “Sources of Career Information”—highlight the forces that are likely to determine employment opportunities in industries and occupations through the year 2012 and indicate where to obtain additional information. The current section is an overview of how the occupational statements are developed and organized. It highlights information presented in each section of a *Handbook* statement and the source of the information, gives examples of specific occupations in some cases, and offers some hints on how to interpret the information provided.

**Unless otherwise noted, the source of employment and earnings data presented in the *Handbook* is the Bureau of Labor Statistics.** Nearly all *Handbook* statements cite employment and earnings data from the Occupational Employment Statistics (OES) survey. Some statements include data from outside sources. OES data may be used to compare earnings among occupations; however, outside data may not be used in this manner, because characteristics of these data vary widely.

## About those numbers at the beginning of each statement

The numbers in parentheses that appear just below the title of every detailed occupational statement are from the Occupational Information Network (O\*NET)—a system used by State employment service offices to classify applicants and job openings, and by some career information centers and libraries to file occupational information.

Occupational Information Network Coverage, a section beginning on page 665, cross-references O\*NET codes to occupations covered in the *Handbook*. O\*NET codes are based on the 2000 Standard Occupational Classification (SOC) system.

## Significant Points

This section highlights key occupational characteristics discussed in the statement.

## Nature of the Work

This section discusses what workers do on the job, what tools and equipment they use, and how closely they are supervised. Individual job duties may vary by industry or employer. For instance, workers in larger firms tend to be more specialized, whereas those in smaller firms often have a wider variety of duties. Most occupations have several levels of skills and responsibilities through which

workers may progress. Beginners may start as trainees performing routine tasks under close supervision. Experienced workers usually undertake more difficult tasks and are expected to perform with less supervision.

Some statements mention common alternative job titles or occupational specialties. For example, the statement on accountants and auditors discusses a few specialties, such as public accountants, management accountants, and internal auditors. Some statements—such as that on advertising, marketing, promotions, public relations, and sales managers—discuss titles or specialties that are detailed OES survey occupations. For these occupations, such as sales managers or marketing managers, separate employment projections are developed and their O\*NET codes appear at the beginning of the statement.

Information in this section may be updated for several reasons. One is the emergence of occupational specialties. For instance, Webmasters—who are responsible for the technical aspects of operating a Web site—constitute a specialty within computer systems analysts, database administrators, and computer scientists. Information also may be updated due to changing technology that affects the way in which a job is performed. For example, the Internet allows purchasers to acquire supplies with a click of the mouse, saving time and money. Furthermore, job duties may be affected by modifications to business practices, such as organizational restructuring or changes in response to government regulations. An example is paralegals and legal assistants, who are increasingly being utilized by law firms in order to lower costs and increase the efficiency and quality of legal services.

Many sources are consulted in researching changes to the nature of the work section or any other section of a Handbook statement. Usual sources include articles in newspapers, magazines, and professional journals. Useful information also appears on the Web sites of professional associations, unions, and trade groups. Information found on the Internet or in periodicals is verified through interviews with individuals employed in the occupation, professional associations, unions, and others with occupational knowledge, such as university professors and counselors in career assistance centers.

## Working Conditions

This section identifies the typical hours worked, the workplace environment, physical activities and susceptibility to injury, special equipment, and the extent of travel required. In many occupations, people work regular business hours—40 hours a week, Monday through Friday—but many do not. For example, waiters and waitresses often work evenings and weekends.

The work setting can range from a hospital, to a mall, to an offshore oil rig. Truck drivers might be susceptible to injury, while paramedics have high job-related stress. Semiconductor processors may wear protective clothing or equipment, some construction laborers do physically demanding work, and top executives may travel frequently.

Information on various worker characteristics, such as the average number of hours worked per week, is obtained from the Current Population Survey (CPS)—a survey of households conducted by the U.S. Census Bureau for BLS.

## Employment

This section reports the number of jobs that the occupation provided in 2002, the key industries in which those jobs were found, and the number or proportion of self-employed workers in the occupation, if significant. Self-employed workers accounted for about 8 percent of the workforce in 2002; however, they were concentrated in a small number of occupations, such as farmers and ranchers, childcare workers, lawyers, health practitioners, and the construction trades.

BLS develops the National Employment Matrix, which presents current and projected employment for 284 detailed industries and 725 detailed occupations over the 2002–12 period. Data in the matrix come primarily from the OES survey, which reports employment of wage and salary workers for each occupation in almost all industries. The CPS survey provides information on the total number of self-employed and unpaid family workers in each occupation. The CPS also provides employment data on agriculture and private households. The Office of Personnel Management (OPM) furnishes employment data on Federal Government workers.

Because total employment in each occupation combines data from several different sources, employment numbers cited in the *Handbook* often differ from employment data provided by the OES, CPS, and other employment surveys. This may be a source of confusion for some readers.

When significant, the geographic distribution of jobs and the proportion of part-time workers (those working less than 35 hours a week) are mentioned, reflecting CPS data. On the basis of OES survey data, some *Handbook* statements, such as those on textile, apparel, and furnishings occupations, list States that employ substantial numbers of workers in the occupation.

## Training, Other Qualifications, and Advancement

After knowing what a job is all about, it is important to understand how to train for it. This section describes the most significant sources of education and training, including the education or training preferred by employers, the typical length of training, and the possibilities for advancement. Job skills sometimes are acquired through high school, informal on-the-job training, formal training (including apprenticeships), the U.S. Armed Forces, home study, hobbies, or previous work experience. For example, sales experience is particularly important for many sales jobs. Many professional jobs, on the other hand, require formal postsecondary education—postsecondary vocational or technical training, or college, postgraduate, or professional education.

In addition to training requirements, the *Handbook* mentions desirable skills, aptitudes, and personal characteristics. For some entry-level jobs, personal characteristics are more important than formal training. Employers generally seek people who read, write, and speak well; compute accurately; think logically; learn quickly; get along with others; and demonstrate dependability.

Some occupations require certification or licensing to enter the field, to advance in the occupation, or to practice independently. Certification or licensing generally involves completing courses and passing examinations. Many occupations increasingly are requiring workers to participate in continuing education or training in relevant skills, either to keep up with the changes in their job or to improve their advancement opportunities.

Revisions to the training section may focus on changes in educational, certification, or licensing requirements, such as an increase in the number of hours of required training or in the number of States requiring a license. Information also is updated if new skills are needed to complete the job, such as those arising from the adoption of new technology.

Information in this section comes from personal interviews with individuals employed in the occupation or from Web sites, published training materials, and interviews with the organizations that grant the degree, certification, or license. Some occupations have numerous professional designations granted by different organizations. Generally, the most widely recognized organizations are listed in the *Handbook*.

Some statements list the number of training programs. For example, the statement on pharmacists indicates the number of colleges of pharmacy accredited by the American Council on Pharmaceutical Education. The minimum requirements for Federal Government employment cited in some statements are based on standards set by the U.S. Office of Personnel Management.

## Job Outlook

In planning for the future, it is important to consider potential job opportunities. This section describes the factors that will result in employment growth or decline. Projecting occupational employment is the final step in the employment projections process. (A more detailed description of the projections process is discussed in the *Handbook* section entitled “Assumptions and Methods Used in Preparing Employment Projections.”) The job outlook section reflects the occupational projections in the National Employment Matrix. Each occupation is assigned a descriptive phrase on the basis of its projected percent change in employment over the 2002–12 period. (All of the phrases are listed at the end of this section.)

A number of factors are examined in developing employment projections and updating the job outlook section. One factor is job growth or decline in industries that employ a significant percentage of workers in the occupation. If workers are concentrated in a rapidly growing industry, their employment will likely also grow quickly. For example, the growing need for business expertise is fueling demand for consulting services. Hence, management, scientific, and technical consulting services is projected to be among the fastest growing industries through 2012. Projected rapid growth in this industry helps to spur faster than average growth in employment of management analysts.

Demographic changes, which affect what services are required, can influence occupational growth or decline. For example, an aging population demands more healthcare workers, from registered nurses to pharmacists.

Technological change is another key factor. New technology can either create new job opportunities or eliminate jobs by making workers obsolete. The Internet has increased the demand for workers in the computer and information technology fields, such as computer support specialists and systems administrators. However, the Internet also has adversely affected travel agents, because many people now book tickets, hotels, and rental cars online.

Another factor affecting job growth or decline is changes in business practices, such as the outsourcing of work or the restructuring of businesses. In the past few years, insurance carriers have been outsourcing sales and claims adjuster jobs to large, 24-hour call centers in order to reduce costs. Corporate restructuring also has made many organizations “flatter,” resulting in fewer middle management positions.

The substitution of one product or service for another can affect employment projections. For example, consumption of plastic products has grown as they have been substituted for metal goods in many consumer and manufactured products in recent years. The process is likely to continue and should result in stronger demand for machine operators in plastics than in metal.

Competition from foreign trade usually has a negative impact on employment. Often, foreign manufacturers can produce goods

U.S. manufacturers cannot compete. Increased international competition is a major reason for the decline in employment among textile, apparel, and furnishings workers.

In some cases, the *Handbook* mentions that an occupation is likely to provide numerous job openings or, in others, that an occupation likely will afford relatively few openings. This information reflects the projected change in employment, as well as replacement needs. Large occupations that have high turnover, such as food and beverage serving occupations, generally provide the most job openings—reflecting the need to replace workers who transfer to other occupations or who stop working.

Some *Handbook* statements discuss the relationship between the number of jobseekers and the number of job openings. (The phrases used to describe that relationship appear at the end of this section.) In some occupations, there is a rough balance between jobseekers and job openings, resulting in good opportunities. In other occupations, employers may report difficulty finding qualified applicants, resulting in excellent job opportunities. Still other occupations are characterized by a surplus of applicants, leading to keen competition for jobs. On the one hand, limited training facilities, salary regulations, or undesirable aspects of the work—as in the case of private household workers—can result in an insufficient number of entrants to fill all job openings. On the other hand, glamorous or potentially high-paying occupations, such as actors or musicians, generally have surpluses of jobseekers. Variation in job opportunities by industry, educational attainment, size of firm, or geographic location also may be discussed. Even in crowded fields, job openings do exist. Good students or highly qualified individuals should not be deterred from undertaking training for, or seeking entry into, those occupations.

### Earnings

This section discusses typical earnings and how workers are compensated—by means of annual salaries, hourly wages, commissions, piece rates, tips, or bonuses. Within every occupation, earnings vary by experience, responsibility, performance, tenure, and geographic area. Almost every statement in the *Handbook* contains 2002 OES-survey earnings data for wage and salary workers. Information on earnings in the major industries in which the occupation is employed, also supplied by the OES survey, may be given as well.

In addition to presenting earnings data from the OES survey, some statements contain additional earnings data from non-BLS sources. Starting and average salaries of Federal workers are based on 2003 data from the U.S. Office of Personnel Management. The National Association of Colleges and Employers supplies information on average salary offers in 2003 for students graduating with a bachelor's, master's, or Ph.D. degree in certain fields. A few statements contain additional earnings information from other sources, such as unions, professional associations, and private companies. These data sources are cited in the text.

Benefits account for a significant portion of total compensation costs to employers. Benefits such as paid vacation, health insurance, and sick leave may not be mentioned, because they are so widespread. Although not as common as traditional benefits, flexible hours and profit-sharing plans may be offered to attract and

### Key phrases in the *Handbook*

This box explains how to interpret the key phrases used to describe projected changes in employment. It also explains the terms used to describe the relationship between the number of job openings and the number of jobseekers. The description of this relationship in a particular occupation reflects the knowledge and judgment of economists in the BLS Office of Occupational Statistics and Employment Projections.

#### Changing employment between 2002 and 2012

If the statement reads:	Employment is projected to:
Grow much faster than average	increase 36 percent or more
Grow faster than average	increase 21 to 35 percent
Grow about as fast as average	increase 10 to 20 percent
Grow more slowly than average	increase 3 to 9 percent
Little or no growth	increase 0 to 2 percent
Decline	decrease 1 percent or more

#### Opportunities and competition for jobs

If the statement reads:	Job openings compared with jobseekers may be:
Very good to excellent opportunities	More numerous
Good or favorable opportunities	In rough balance
May face, or can expect, keen competition	Fewer

retain highly qualified workers. Less common benefits also include childcare, tuition for dependents, housing assistance, summers off, and free or discounted merchandise or services. For certain occupations, the percentage of workers affiliated with a union is listed. These data come from the CPS survey.

### Related Occupations

Occupations involving similar duties, skills, interests, education, and training are listed.

### Sources of Additional Information

No single publication can describe all aspects of an occupation. Thus, the *Handbook* lists the mailing addresses of associations, government agencies, unions, and other organizations that can provide occupational information. In some cases, tollfree telephone numbers and Internet addresses also are listed. Free or relatively inexpensive publications offering more information may be mentioned; some of these publications also may be available in libraries, in school career centers, in guidance offices, or on the Internet. Most of the organizations listed in this section were sources of information on the nature of the work, training, and job outlook discussed in the *Handbook*.

For additional sources of information, also read the earlier chapter, "Sources of Career Information."