
Fire Fighting Occupations

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Significant Points

- Fire fighting involves hazardous conditions and long, irregular hours.
- About 9 out of 10 fire fighting workers were employed by local governments.
- Applicants for city fire fighting jobs generally must pass written, physical, and medical examinations.
- Although employment is expected to grow faster than the average, keen competition for jobs is expected because this occupation attracts many qualified candidates.

Nature of the Work

Every year, fires and other emergencies take thousands of lives and destroy property worth billions of dollars. Fire fighters help protect the public against these dangers by responding to fires and a variety of other emergencies. In addition to putting out fires, they are frequently the first emergency personnel at the scene of a traffic accident or medical emergency and may be called upon to treat injuries or perform other vital functions.

During duty hours, fire fighters must be prepared to respond immediately to a fire or others emergency. Fighting fires is dangerous and complex, therefore requires organization and teamwork. At every emergency scene, fire fighters perform specific duties assigned by a superior officer. At fires, they connect hose lines to hydrants and operate a pump to send water to high-pressure hoses. Some carry hoses, climb ladders, and enter burning buildings—using systematic and careful procedures—to put out fires. At times, they may need to use tools, like an ax, to make their way through doors, walls, and debris sometimes with the aid of information about a building's floor plan. Some find and rescue occupants who are unable to safely leave the building without assistance. They also provide emergency medical attention, ventilate smoke-filled areas, and attempt to salvage the contents of buildings. Fire fighters' duties may change several times while the company is in action. Sometimes they remain at the site of a disaster for days at a time, rescuing trapped survivors, and assisting with medical treatment.

Fire fighters work in a variety of settings, including metropolitan areas, rural areas with grasslands and forests, airports, chemical plants and other industrial sites. They have also assumed a range of responsibilities, including emergency medical services. In fact, most calls to which fire fighters respond involve medical emergencies. In addition, some fire fighters work in hazardous materials units that are specially trained for the control, prevention, and cleanup of hazardous materials, such as oil spills or accidents involving the transport of chemicals. (For more information, see the *Handbook* section on hazardous material removal workers.)

Workers specializing forest fires utilize different methods and equipment than other fire fighters. In national forests and parks,

forest fire inspectors and prevention specialists spot fires from watchtowers and report the fires to headquarters by telephone or radio. Forest rangers also patrol to ensure that travelers and campers comply with fire regulations. When fires break out, crews of fire fighters are brought in to suppress the blaze with heavy equipment and water hoses. Fighting forest fires, like fighting urban fires, is rigorous work. One of the most effective means of fighting a forest fire is creating fire lines—cutting down trees and digging out grass and all other combustible vegetation in the path of the fire—to deprive it of fuel. Elite fire fighters called smoke jumpers parachute from airplanes to reach otherwise inaccessible areas. This tactic, however, can be extremely hazardous. When they aren't responding to fires and other emergencies, fire fighters clean and maintain equipment, study fire science and fire fighting techniques, conduct practice drills and fire inspections, and participate in physical fitness activities. They also prepare written reports on fire incidents and review fire science literature to stay informed about technological developments and changing administrative practices and policies.

Most fire departments have a fire prevention division, usually headed by a fire marshal and staffed by *fire inspectors*. Workers in this division conduct inspections of structures to prevent fires by ensuring compliance with fire codes. These inspectors also work with developers and planners to check and approve plans for new buildings and inspect buildings under construction.

Some fire fighters become *fire investigators*, who determine the causes of fires. They collect evidence, interview witnesses, and prepare reports on fires in cases where the cause may be arson or criminal negligence. They often are asked to testify in court. In some cities, these investigators work in police departments, and some are employed by insurance companies.

Work environment. Fire fighters spend much of their time at fire stations, which are usually similar to dormitories. When an alarm sounds, fire fighters respond, regardless of the weather or hour. Fire fighting involves the risk of death or injury from floors caving in, walls toppling, traffic accidents, and exposure to flames and smoke. Fire fighters also may come into contact with poisonous, flammable, or explosive gases and chemicals and radioactive materials, which may have immediate or long-term effects on their health. For these reasons, they must wear protective gear that can be very heavy and hot.

Work hours of fire fighters are longer and more varied than the hours of most other workers. Many fire fighters work more than 50 hours a week, and sometimes they may work longer. In some agencies, fire fighters are on duty for 24 hours, then off for 48 hours, and receive an extra day off at intervals. In others, they work a day shift of 10 hours for 3 or 4 days, a night shift of 14 hours for 3 or 4 nights, have 3 or 4 days off, and then repeat the cycle. In addition, fire fighters often work extra hours at fires and other emergencies and are regularly assigned to work on holidays. Fire lieutenants and fire captains often work the same hours as the fire fighters they supervise.

Training, Other Qualifications, and Advancement

Applicants for fire fighting jobs are usually required to have at least a high school diploma, but candidates with some education after high school are increasingly preferred. Most municipal jobs require passing written and physical tests. All fire fighters receive extensive training after being hired.

Education and training. Most fire fighters have a high school diploma, however, the completion of community college courses, or in some cases, an associate degree, in fire science may improve an applicant's chances for a job. A number of colleges and universities offer courses leading to 2- or 4-year degrees in fire engineering or fire science. In recent years, an increasing proportion of new fire fighters have had some education after high school.

As a rule, entry-level workers in large fire departments are trained for several weeks at the department's training center or academy. Through classroom instruction and practical training, the recruits study fire fighting techniques, fire prevention, hazardous materials control, local building codes, and emergency medical procedures, including first aid and cardiopulmonary resuscitation (CPR). They also learn how to use axes, chain saws, fire extinguishers, ladders, and other fire fighting and rescue equipment. After successfully completing this training, the recruits are assigned to a fire company, where they undergo a period of probation.

Many fire departments have accredited apprenticeship programs lasting up to 4 years. These programs combine formal instruction with on-the-job training under the supervision of experienced fire fighters.

Almost all departments require fire fighters to be certified as emergency medical technicians. (For more information, see the section of the *Handbook* on emergency medical technicians and paramedics.) Although most fire departments require the lowest level of certification, Emergency Medical Technician-Basic (EMT-Basic), larger departments in major metropolitan areas increasingly require paramedic certification. Some departments include this training in the fire academy, whereas others prefer that recruits earn EMT certification on their own but will give them up to 1 year to do it.

In addition to participating in training programs conducted by local fire departments, some fire fighters attend training sessions sponsored by the U.S. National Fire Academy. These training sessions cover topics such as executive development, anti-arson techniques, disaster preparedness, hazardous materials control, and public fire safety and education. Some States also have either voluntary or mandatory fire fighter training and certification programs. Many fire departments offer fire fighters incentives such as tuition reimbursement or higher pay for completing advanced training.

Other qualifications. Applicants for municipal fire fighting jobs usually must pass a written exam; tests of strength, physical stamina, coordination, and agility; and a medical examination that includes a drug screening. Workers may be monitored on a random basis for drug use after accepting employment. Examinations are generally open to people who are at least 18 years of age and have a high school education or its equivalent. Those who receive the highest scores in all phases of testing have the best chances of being hired.

Among the personal qualities fire fighters need are mental alertness, self-discipline, courage, mechanical aptitude, endurance, strength, and a sense of public service. Initiative and good judgment also are extremely important because fire fighters make quick decisions in emergencies. Members of a crew live and work closely together under conditions of stress and

danger for extended periods, so they must be dependable and able to get along well with others. Leadership qualities are necessary for officers, who must establish and maintain discipline and efficiency, as well as direct the activities of the fire fighters in their companies.

Advancement. Most experienced fire fighters continue studying to improve their job performance and prepare for promotion examinations. To progress to higher level positions, they acquire expertise in advanced fire fighting equipment and techniques, building construction, emergency medical technology, writing, public speaking, management and budgeting procedures, and public relations.

Opportunities for promotion depend upon the results of written examinations, as well as job performance, interviews, and seniority. Hands-on tests that simulate real-world job situations are also used by some fire departments.

Usually, fire fighters are first promoted to engineer, then lieutenant, captain, battalion chief, assistant chief, deputy chief, and, finally, chief. For promotion to positions higher than battalion chief, many fire departments now require a bachelor's degree, preferably in fire science, public administration, or a related field. An associate degree is required for executive fire officer certification from the National Fire Academy.

Employment

In 2006, total paid employment in firefighting occupations was about 361,000. Fire fighters held about 293,000 jobs, first-line supervisors/managers of fire fighting and prevention workers held about 52,000, and fire inspectors and investigators held about 14,000 jobs. These employment figures include only paid career fire fighters—they do not cover volunteer fire fighters, who perform the same duties and may constitute the majority of fire fighters in a residential area. According to the U.S. Fire Administration, about 71 percent of fire companies were staffed entirely by volunteer fire fighters in 2005.

About 9 out of 10 fire fighting workers were employed by local government. Some large cities have thousands of career fire fighters, while many small towns have only a few. Most



Fire fighters respond to emergencies, such as car accidents and fires.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Fire fighting occupations.....	—	361,000	404,000	43,000	12
First-line supervisors/managers of fire fighting and prevention workers.....	33-1021	52,000	58,000	6,000	11
Fire fighting and prevention workers	33-2000	308,000	345,000	37,000	12
Fire fighters	33-2011	293,000	328,000	35,000	12
Fire inspectors.....	33-2020	16,000	17,000	1,600	10
Fire inspectors and investigators.....	33-2021	14,000	15,000	1,500	11
Forest fire inspectors and prevention specialists.....	33-2022	1,800	1,900	0	2

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

of the remainder worked in fire departments on Federal and State installations, including airports. Private fire fighting companies employ a small number of fire fighters.

In response to the expanding role of fire fighters, some municipalities have combined fire prevention, public fire education, safety, and emergency medical services into a single organization commonly referred to as a public safety organization. Some local and regional fire departments are being consolidated into countywide establishments to reduce administrative staffs, cut costs, and establish consistent training standards and work procedures.

Job Outlook

Although employment is expected to grow as fast as the average for all jobs, candidates for these positions are expected to face keen competition as these positions are highly attractive and sought after.

Employment change. Employment of workers in fire fighting occupations is expected to grow by 12 percent over the 2006-2016 decade, which is as fast as the average for all occupations. Most job growth will stem from volunteer fire fighting positions being converted to paid positions. In recent years, it has become more difficult for volunteer fire departments to recruit and retain volunteers. This may be the result of the considerable amount of training and time commitment required. Furthermore, a trend towards more people living in and around cities has increased the demand for fire fighters. When areas develop and become more densely populated, emergencies and fires affect more buildings and more people and therefore require more fire fighters.

Job prospects. Prospective fire fighters are expected to face keen competition for available job openings. Many people are attracted to fire fighting because, it is challenging and provides the opportunity to perform an essential public service; a high school education is usually sufficient for entry; and a pension is usually guaranteed after 25 years work. Consequently, the number of qualified applicants in most areas far exceeds the number of job openings, even though the written examination and physical requirements eliminate many applicants. This situation is expected to persist in coming years. Applicants with the best chances are those who are physically fit and score the highest on physical conditioning and mechanical aptitude exams. Those who have completed some fire fighter education

at a community college and have EMT or paramedic certification will have an additional advantage.

Earnings

Median annual earnings of fire fighters were \$41,190 in May 2006. The middle 50 percent earned between \$29,550 and \$54,120. The lowest 10 percent earned less than \$20,660, and the highest 10 percent earned more than \$66,140. Median annual earnings were \$41,600 in local government, \$41,070 in the Federal Government, and \$37,000 in State governments.

Median annual earnings of first-line supervisors/managers of fire fighting and prevention workers were \$62,900 in May 2006. The middle 50 percent earned between \$50,180 and \$79,060. The lowest 10 percent earned less than \$36,820, and the highest 10 percent earned more than \$97,820. First-line supervisors/managers of fire fighting and prevention workers employed in local government earned a median of about \$64,070 a year.

Median annual earnings of fire inspectors and investigators were \$48,050 in May 2006. The middle 50 percent earned between \$36,960 and \$61,160 a year. The lowest 10 percent earned less than \$29,840, and the highest 10 percent earned more than \$74,930. Fire inspectors and investigators employed in local government earned a median of about \$49,690 a year.

According to the International City-County Management Association, average salaries in 2006 for sworn full-time positions were as follows:

Rank	Minimum annual base salary	Maximum annual base salary
Fire chief	\$73,435	\$95,271
Deputy chief.....	66,420	84,284
Battalion chief.....	62,199	78,611
Assistant fire chief.....	61,887	78,914
Fire captain.....	51,808	62,785
Fire lieutenant	47,469	56,511
Fire prevention/code inspector.....	45,951	58,349
Engineer	43,232	56,045

Fire fighters who average more than a certain number of work hours per week are required to be paid overtime. The hours threshold is determined by the department. Fire fighters often earn overtime for working extra shifts to maintain minimum staffing levels or during special emergencies.

Fire fighters receive benefits that usually include medical and liability insurance, vacation and sick leave, and some paid holidays. Almost all fire departments provide protective clothing (helmets, boots, and coats) and breathing apparatus, and many also provide dress uniforms. Fire fighters generally are covered by pension plans, often providing retirement at half pay after 25 years of service or if the individual is disabled in the line of duty.

Related Occupations

Like fire fighters, emergency medical technicians and paramedics and police and detectives respond to emergencies and save lives.

Sources of Additional Information

Information about a career as a fire fighter may be obtained from local fire departments and from either of the following organizations:

► International Association of Fire Fighters, 1750 New York Ave. NW., Washington, DC 20006.

Internet: <http://www.iaff.org>

► U.S. Fire Administration, 16825 South Seton Ave., Emmitsburg, MD 21727.

Internet: <http://www.usfa.dhs.gov>

Information about professional qualifications and a list of colleges and universities offering 2- or 4-year degree programs in fire science or fire prevention may be obtained from:

► National Fire Academy, 16825 South Seton Ave., Emmitsburg, MD 21727.

Internet: <http://www.usfa.dhs.gov/nfa/index.htm>

