

### Earnings

Salaries in broadcasting vary widely but in general are relatively low, except for announcers who work for large stations in major markets or for networks. Earnings are higher in television than in radio and higher in commercial than in public broadcasting.

Median hourly earnings of announcers in 2000 were \$9.52. The middle 50 percent earned between \$6.84 and \$14.28. The lowest 10 percent earned less than \$5.94, and the highest 10 percent earned more than \$24.35. Median hourly earnings of announcers in 2000 were \$9.54 in the radio and television broadcasting industry.

### Related Occupations

The success of announcers depends upon how well they communicate. Others who must be skilled at oral communication include news analysts, reporters, and correspondents; interpreters and translators; sales and related occupations; public relations specialists; and teachers. Many announcers also must entertain their audience, so their work is similar to other entertainment-related occupations such as actors, directors, and producers; dancers and choreographers; and musicians, singers, and related workers.

### Sources of Additional Information

General information on the broadcasting industry is available from:  
 ▶ National Association of Broadcasters, 1771 N St. NW., Washington, DC 20036. Internet: <http://www.nab.org>

## Broadcast and Sound Engineering Technicians and Radio Operators

(O\*NET 27-4011.00, 27-4012.00, 27-4013.00, 27-4014.00)

### Significant Points

- Job applicants will face strong competition for the better paying jobs at radio and television stations serving large cities.
- Television stations employ, on average, many more technicians than do radio stations.
- Evening, weekend, and holiday work is common.

### Nature of the Work

Broadcast and sound engineering technicians install, test, repair, set up, and operate the electronic equipment used to record and transmit radio and television programs, cable programs, and motion pictures. They work with television cameras, microphones, tape recorders, lighting, sound effects, transmitters, antennas, and other equipment. Some broadcast and sound engineering technicians produce movie soundtracks in motion picture production studios, control the sound of live events, such as concerts, or record music in a recording studio.

In the control room of a radio or television-broadcasting studio, these technicians operate equipment that regulates the signal strength, clarity, and range of sounds and colors of recordings or broadcasts. They also operate control panels to select the source of the material. Technicians may switch from one camera or studio to another, from film to live programming, or from network to local programming. By means of hand signals and, in television, telephone headsets, they give technical directions to other studio personnel.

*Audio and video equipment operators* operate specialized electronic equipment to record stage productions, live programs or events, and studio recordings. They edit and reproduce tapes for



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compact discs, records and cassettes, for radio and television broadcasting and for motion picture productions. The duties of audio and video equipment operators can be divided into two categories: technical and production activities used in the production of sound and picture images for film or videotape from set design to camera operation and post production activities where raw images are transformed to a final print or tape.

*Radio operators* mainly receive and transmit communications using a variety of tools. They are also responsible for repairing equipment using such devices as electronic testing equipment, hand tools, and power tools. These help to maintain communication systems in an operative condition.

Broadcast and sound engineering technicians and radio operators perform a variety of duties in small stations. In large stations and at the networks, technicians are more specialized, although job assignments may change from day to day. The terms “operator,” “engineer,” and “technician” often are used interchangeably to describe these jobs. *Transmitter operators* monitor and log outgoing signals and operate transmitters. *Maintenance technicians* set up, adjust, service, and repair electronic broadcasting equipment. *Audio control engineers* regulate volume and sound quality of television broadcasts, while *video control engineers* regulate their fidelity, brightness, and contrast. *Recording engineers* operate and maintain video and sound recording equipment. They may operate equipment designed to produce special effects, such as the illusions of a bolt of lightning or a police siren. *Sound mixers* or *re-recording mixers* produce the sound track of a movie, television, or radio program. After filming or recording, they may use a process called dubbing to insert sounds. *Field technicians* set up and operate broadcasting portable field transmission equipment outside the studio. Television news coverage requires so much electronic equipment, and the technology is changing so rapidly, that many stations assign technicians exclusively to news.

*Chief engineers, transmission engineers, and broadcast field supervisors* supervise the technicians who operate and maintain broadcasting equipment.

### Working Conditions

Broadcast, sound engineering, audio and video equipment technicians, and radio operators generally work indoors in pleasant surroundings. However, those who broadcast news and other programs from locations outside the studio may work outdoors in all types of

weather. Technicians doing maintenance may climb poles or antenna towers, while those setting up equipment do heavy lifting.

Technicians in large stations and the networks usually work a 40-hour week under great pressure to meet broadcast deadlines, but may occasionally work overtime. Technicians in small stations routinely work more than 40 hours a week. Evening, weekend, and holiday work is usual, because most stations are on the air 18 to 24 hours a day, 7 days a week.

Those who work on motion pictures may be on a tight schedule to finish according to contract agreements.

### Employment

Broadcast and sound engineering technicians and radio operators held about 87,000 jobs in 2000. Their employment was distributed among the following detailed occupations:

Audio and video equipment technicians .....	37,000
Broadcast technicians .....	36,000
Sound engineering technicians .....	11,000
Radio operators .....	2,900

About 1 out of 3 worked in radio and television broadcasting. Almost 15 percent worked in the motion picture industry. About 4 percent worked for cable and other pay-television services. A few were self-employed. Television stations employ, on average, many more technicians than do radio stations. Some technicians are employed in other industries, producing employee communications, sales, and training programs. Technician jobs in television are located in virtually all cities, whereas jobs in radio are also found in many small towns. The highest paying and most specialized jobs are concentrated in New York City, Los Angeles, Chicago, and Washington, DC—the originating centers for most network programs. Motion picture production jobs are concentrated in Los Angeles and New York City.

### Training, Other Qualifications, and Advancement

The best way to prepare for a broadcast and sound engineering technician job is to obtain technical school, community college, or college training in broadcast technology or in engineering or electronics. This is particularly true for those who hope to advance to supervisory positions or jobs at large stations or the networks. In the motion picture industry people are hired as apprentice editorial assistants and work their way up to more skilled jobs. Employers in the motion picture industry usually hire experienced freelance technicians on a picture-by-picture basis. Reputation and determination are important in getting jobs.

Beginners learn skills on the job from experienced technicians and supervisors. They often begin their careers in small stations and, once experienced, move on to larger ones. Large stations usually only hire technicians with experience. Many employers pay tuition and expenses for courses or seminars to help technicians keep abreast of developments in the field.

Audio and video equipment technicians generally need a high school diploma. Many recent entrants have a community college degree or various other forms of post-secondary degrees, although that is not always a requirement. They may substitute on-the-job training for formal education requirements. Experience in a recording studio, as an assistant, is a great way of getting experience and knowledge simultaneously.

Radio operators do not usually require any formal training. This is an entry-level position that generally requires on-the-job training.

The Federal Communications Commission no longer requires the licensing of broadcast technicians, as the Telecommunications Act of 1996 eliminated this licensing requirement. Certification by

the Society of Broadcast Engineers is a mark of competence and experience. The certificate is issued to experienced technicians who pass an examination. By offering the Radio Operator and the Television Operator levels of certification, the Society of Broadcast Engineers has filled the void left by the elimination of the FCC license.

Prospective technicians should take high school courses in math, physics, and electronics. Building electronic equipment from hobby kits and operating a “ham,” or amateur radio, are good experience, as is work in college radio and television stations.

Broadcast and sound engineering technicians and radio operators must have manual dexterity and an aptitude for working with electrical, electronic, and mechanical systems and equipment.

Experienced technicians can become supervisory technicians or chief engineers. A college degree in engineering is needed to become chief engineer at a large TV station.

### Job Outlook

People seeking entry-level jobs as technicians in the field of radio and television broadcasting are expected to face strong competition in major metropolitan areas, where pay generally is higher and the number of qualified job seekers exceed the number of openings. There, stations seek highly experienced personnel. Prospects for entry-level positions generally are better in small cities and towns for beginners with appropriate training.

The overall employment of broadcast and sound engineering technicians and radio operators is expected to grow about as fast as the average for all occupations through the year 2010. An increase in the number of programming hours should require additional technicians. However, employment growth in radio and television broadcasting may be tempered somewhat because of slow growth in the number of new radio and television stations and laborsaving technical advances, such as computer-controlled programming and remote control of transmitters. Technicians who know how to install transmitters will be in demand as television stations replace existing analog transmitters with digital transmitters. Stations will begin broadcasting in both analog and digital formats, eventually switching entirely to digital.

Employment of broadcast and sound engineering technicians is expected to grow about as fast as average through 2010. The advancements in technology will enhance the capabilities of technicians to help produce a higher quality of programming for radio and television. Employment of audio and video equipment technicians also is expected to grow about as fast as average through 2010. Not only will these workers have to set up audio and video equipment, but it will be necessary for them to maintain and repair this machinery. Employment of radio operators, on the other hand, will grow more slowly than other areas in this field of work. Automation will negatively impact these workers as many stations now operate transmitters and control programming remotely.

Employment of broadcast and sound engineering technicians and radio operators in the cable industry should grow rapidly because of new products coming to market, such as cable modems, which deliver high-speed Internet access to personal computers, and digital set-top boxes, which transmit better sound and pictures, allowing cable operators to offer many more channels than in the past. These new products should cause traditional cable subscribers to sign up for additional services.

Employment in the motion picture industry also will grow fast. However, job prospects are expected to remain competitive, because of the large number of people attracted to this relatively small field.

Numerous job openings also will result from the need to replace experienced technicians who leave the occupations. Many leave

these occupations for electronic jobs in other areas, such as computer technology or commercial and industrial repair.

### Earnings

Television stations usually pay higher salaries than radio stations; commercial broadcasting usually pays more than public broadcasting; and stations in large markets pay more than those in small ones.

Median annual earnings of broadcast technicians in 2000 were \$26,950. The middle 50 percent earned between \$18,060 and \$44,410. The lowest 10 percent earned less than \$13,860, and the highest 10 percent earned more than \$63,340.

Median annual earnings of sound engineering technicians in 2000 were \$39,480. The middle 50 percent earned between \$24,730 and \$73,720. The lowest 10 percent earned less than \$17,560, and the highest 10 percent earned more than \$119,400.

Median annual earnings of audio and video equipment technicians in 2000 were \$30,310. The middle 50 percent earned between \$21,980 and \$44,970. The lowest 10 percent earned less than \$16,630, and the highest 10 percent earned more than \$68,720.

Median annual earnings of radio operators in 2000 were \$29,260. The middle 50 percent earned between \$23,090 and \$39,830. The lowest 10 percent earned less than \$17,570, and the highest 10 percent earned more than \$54,590.

### Related Occupations

Broadcast and sound engineering technicians and radio operators need the electronics training and hand coordination necessary to operate technical equipment, and they generally complete specialized postsecondary programs. Similar occupations include engineering technicians, science technicians, health technologists and technicians, electrical and electronics installers and repairers, and communications equipment operators.

### Sources of Additional Information

For information on careers for broadcast and sound engineering technicians and radio operators, write to:

► National Association of Broadcasters, 1771 N St. NW., Washington, DC 20036. Internet: <http://www.nab.org>

For information on certification, contact:

► Society of Broadcast Engineers, 9247 North Meridian St., Suite 305, Indianapolis, IN 46260. Internet: <http://www.sbe.org>

For information on careers in the motion picture and television industry, contact:

► Society of Motion Picture and Television Engineers (SMPTE), 595 West Hartsdale Ave., White Plains, NY 10607. Internet: <http://www.smpete.org>

## News Analysts, Reporters, and Correspondents

(O\*NET 27-3021.00, 27-3022.00)

### Significant Points

- Most employers prefer individuals with a bachelor's degree in journalism and experience.
- Competition will be keen for jobs at large metropolitan newspapers and broadcast stations and on national magazines; most entry-level openings arise on small publications.
- Jobs often are stressful because of irregular hours, frequent night and weekend work, and pressure to meet deadlines.

### Nature of the Work

News analysts, reporters, and correspondents play a key role in our society. They gather information, prepare stories, and make broadcasts that inform us about local, State, national, and international events; present points of view on current issues; and report on the actions of public officials, corporate executives, special-interest groups, and others who exercise power.

*News analysts* examine, interpret, and broadcast news received from various sources, and also are called *newscasters* or *news anchors*. News anchors present news stories and introduce videotaped news or live transmissions from on-the-scene reporters. Some newscasters at large stations and networks usually specialize in a particular type of news, such as sports or weather. *Weathercasters*, also called weather reporters, report current and forecasted weather conditions. They gather information from national satellite weather services, wire services, and local and regional weather bureaus. Some weathercasters are trained meteorologists and can develop their own weather forecasts. (See the statement on atmospheric scientists elsewhere in the *Handbook*.) *Sportscasters* select, write, and deliver sports news. This may include interviews with sports personalities and coverage of games and other sporting events.

In covering a story, *reporters* investigate leads and news tips, look at documents, observe events at the scene, and interview people. Reporters take notes and also may take photographs or shoot videos. At their office, they organize the material, determine the focus or emphasis, write their stories, and edit accompanying video material. Many reporters enter information or write stories on laptop computers, and electronically submit them to their offices from remote locations. In some cases, *newswriters* write a story from information collected and submitted by reporters. Radio and television reporters often compose stories and report "live" from the scene. At times, they later tape an introduction or commentary to their story in the studio. Some journalists also interpret the news or offer opinions to readers, viewers, or listeners. In this role, they are called *commentators* or *columnists*.

General assignment reporters write news, such as an accident, a political rally, the visit of a celebrity, or a company going out of business, as assigned. Large newspapers and radio and television stations assign reporters to gather news about specific categories or beats, such as crime or education. Some reporters specialize in fields such as health, politics, foreign affairs, sports, theater, consumer affairs, social events, science, business, and religion. Investigative



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