

## LICENSE REQUIREMENTS (Cont.)

The General Class license requires a 35 question, multiple choice written examination (different than the Technician test). This grants all the Technician privileges plus permission to use all modes, including Morse code, on specified portions of the HF bands between 30 and 300 MHz.

The Extra Class license requires a more extensive, 50 question, written examination. Extra Class hams have all available privileges on all available ham bands.

The American Radio Relay League (ARRL) web site, [www.arrl.org](http://www.arrl.org), has lots of information to help you obtain an Amateur Radio license, including license study guides and many technical ham radio publications to guide the beginning to advanced ham radio operator.

## HAM RADIO EQUIPMENT

In order to use your license, a ham needs a transceiver (all in one) or a separate transmitter and receiver, an antenna, and a means of communicating with the radio, such as a microphone, Morse code key or computer.



Ham antennas can be as simple as a piece of wire hung from a tree or as complex as a rotatable, large beam on a tower.



Most hams purchase commercially made equipment, but some build their own from kits or from scratch. Transceivers are available in low, medium and high output power, and may operate on a number of bands. Find out more at these radio manufacturers' web sites:

[www.kenwood.com/usa/com/amateur](http://www.kenwood.com/usa/com/amateur)

[www.icomamerica.com/en/amateur](http://www.icomamerica.com/en/amateur)

[www.yaesu.com](http://www.yaesu.com)

[www.elecraft.com](http://www.elecraft.com)

[www.tentec.com](http://www.tentec.com)

[www.alinco.com](http://www.alinco.com)

## WE WANT TO MEET YOU

The Washington Area Amateur Radio Club, Inc. meets at 7 PM, the third Thursday of each month (usually at the Washington Library), preceded by an informal dinner at 5:30 PM at the Frontier Restaurant in Washington, Iowa. For more information, visit us at one of our meetings, or visit the website: [www.waarc.net](http://www.waarc.net) or phone: (319) 855-4007 or e-mail: [AB0DX@arrl.net](mailto:AB0DX@arrl.net)



The purpose of WAARC, Inc. is to promote radio knowledge, fraternalism, and individual operating efficiency among radio hams, to conduct club programs and activities that advance the general interest and welfare of Amateur Radio in the community, and to provide assistance to non-profit and emergency management organizations.

## WHAT IS AMATEUR RADIO?

Amateur Radio, or “ham” radio, is a world wide radio service governed, in the United States, by the Federal Communications Commission (FCC). Hams communicate with each other across the nation and around the world using voice communication, Morse code, teletype, television, FAX, and various other computer-enhanced digital modes of communication. There are approximately 733,000 amateur radio operators in the United States, and more than 2.6 million around the world.

**Look inside to learn more.**

## WHAT DO HAMS DO?

The radio spectrum of frequencies extends from “long wave” frequencies (those below the AM broadcast band) all the way through microwave frequencies used by radar and microwave ovens. The FCC assigns hams specific bands of frequencies throughout this spectrum. Hams use the special characteristics of each band to communicate with each other efficiently over short, medium and long distances.

The bands between 1.8 megahertz (MHz) and 30 MHz are often called the high frequency (HF) or shortwave bands. Depending upon time of day and season, these bands allow hams to talk to each other in the next town or state, across the nation, or even around the world! Hams communicate with many modes on these HF bands, including radiotelephone, Morse code, teletype, and many more. Some hams even send and receive slow scan television pictures across long distances on these bands.

Bands between 30 and 300 MHz are called the very high frequency (VHF) bands. VHF communication distances are often limited, but useful for talking directly between hams and by way of a “repeater” station at high elevation to link more distant hams by providing stronger, more reliable signals. At times, these bands can even provide exciting, long distance communications over

hundreds or thousands of miles!

The ultra high frequency (UHF) and microwave bands are those above 300 MHz. In addition to ordinary modes on these bands, hams even communicate by bouncing signals off the moon!

## PUBLIC SERVICE

The Washington Area Amateur Radio Club, Inc. is affiliated with the American Radio Relay League (ARRL) and our members have a strong desire to participate in public service activities.

Hams who engage in public service and emergency preparedness activities practice transmitting and relaying messages in the National Traffic System within the ARRL, as well as communicating for activities like marathon races, parades and fairs. The heart of public service within the Amateur Radio Emergency Service is assisting disaster service, sheriff, police, fire, and public safety officials during natural disasters, including tornado and storm spotting, as well as when additional communication is needed when official radio services are taxed to their limit or have failed.



Hams often practice emergency skills by participating in regularly scheduled radio networks on the HF, VHF, and UHF bands, and also at Simulated Emergency Tests (SET) in cooperation with local, regional, and even national disaster services officials. In a SET, officials design a mock disaster or event for practicing communication and emergency response skills. Police, fire, public safety, medical personnel, hams, and additional public services participate

## HAM LICENSE REQUIREMENTS

An easy to learn and obtain license is required and granted by the FCC to legally transmit on a ham radio frequency. There is no age restriction, so boys and girls in grade school as well as people well past retirement age can be hams. There are 3 ham radio license classes in the U.S.: Technician, General, and Extra Class. As you advance from Technician to Extra Class, you earn the right to use more bands and frequencies.

The Technician Class license only requires a 35 question, multiple choice written examination. This grants all ham radio privileges above 30 MHz, including the very popular 2-meter band where hand-held radios are used between area hams. Technicians may operate AM, single-sideband and FM voice, digital modes, and even internationally via orbiting satellites.