



## Section Manager



**Alan K. Shuman, K1AKS**  
Post Office Box 681  
New Boston, New Hampshire 03070-0681  
603.413.6605  
E-mail: [k1aks@arrl.org](mailto:k1aks@arrl.org)

### What is Amateur Radio?

A unique mix of fun, public service and convenience is the distinguishing characteristic of the hobby called Amateur Radio. Although hams get involved in Amateur Radio for many reasons, they all have in common a basic knowledge of radio technology, operating principles and regulations, demonstrated by passing an examination for a license to operate on radio frequencies known as the "Amateur Bands." These frequencies are allocated by the Federal Communications Commission for use by hams from just above the AM broadcast band all the way up into extremely high microwave frequencies. Many hams still enjoy CW and there are certain frequency bands that are reserved for code only operations. Although knowledge of the Morse code (CW) is no longer a requirement in getting a license.

### What's The Appeal Of Ham Radio?

A retired military officer in North Carolina makes friends over the radio with a ham in Lithuania. An Ohio teenager uses her computer to upload a chess move through an orbiting space satellite, where it's retrieved by a fellow chess enthusiast in Japan. An aircraft engineer in Florida participating in a DX contest swaps call signs with hams in 100 countries in a weekend. In California, volunteers work to save lives as part of their involvement in an emergency communications net. And at the scene of a traffic accident on a Chicago freeway, a ham calls for help by using a pocket-sized hand-held radio.

Some hams are attracted by the ability to communicate across the country, around the globe, even with astronauts on space missions. Others build and experiment with electronics. Computer hobbyists find packet radio to be a low-cost way to expand their ability to communicate. Those with a competitive streak enjoy DX contests with contests of some kind almost every weekend. The object is to see how many distant locations they can contact. Some like the convenience of a technology that gives them portable communication carrying a hand-talkie in their briefcase, purse or on their belt. Others use it to open the door to new friendships over the air or through participation in one or more than 2000 Amateur Radio clubs throughout the country.

## **Why Do They Call Themselves "Hams?"**

Although the origin of the word "ham" has become obscure through the years, there are a number of theories. One holds that early Amateurs were called hams because they liked to "perform" on the air, as in "hamming it up." Another suggests that the name came from the "ham-fisted" way some early Amateurs handled their code keys. The easiest to accept is that "ham" is a contraction of "Am," as in Amateur. One of the most exotic holds that "ham" is an acronym from the initials of three college students who were among the first Radio Amateurs.

## **Who's The Typical Ham?**

Amateur radio operators come from all walks of life -- movie stars, missionaries, doctors, students, politicians, truck drivers and just plain folks. They are all ages, sexes, income levels and nationalities. But whether they prefer voice communication on a hand-held radio or computer messages transmitted through satellites or Morse code on an old brass telegraph key through a low power transmitter, they all have an interest in what's happening in the world, and they use radio to reach out.

## **A Noble History**

Nobody knows when Amateur Radio operators were first called "hams," but we do know that Amateur Radio is as old as the history of radio itself. Not long after Guglielmo Marconi, an Italian experimenter, transmitted from Newfoundland to England in 1901, amateur experimenters throughout the world were trying out the capabilities of the first "spark gap" transmitters. In 1912 Congress passed the first laws regulating radio transmissions in the U.S. By 1914, Amateur experimenters were communicating nation-wide, and setting up a system to relay messages from coast to coast. In 1927, the FCC was created by Congress and specific frequencies were assigned for various uses, including ham bands.

## **Why A License?**

Although the main purpose of Amateur Radio is fun, it is called the "Amateur Radio Service" because it also has a serious side. The FCC created this "Service" to fill the need for a pool of electronic and radio experts who could provide backup emergency communications. The FCC acknowledges the ability of Amateur Radio to advance the communication and technical skills of radio, and to enhance international goodwill. This philosophy has paid off. Countless lives have been saved where skilled hobbyists act as emergency communicators to render aid, whether it's an earthquake in Italy, a flood in India or a hurricane in the U.S.

## What's The Right License For Me?

Recently the FCC reduced the number license levels. There are now only three, Technician, General and Extra license classes. Knowledge of the Morse code (CW) is no longer a requirement in getting a license.

Earning each license requires passing an examination. Although regulated by the FCC, license exams are given by volunteer groups of Amateur Radio operators. Operating under organizations called Volunteer Examiner Coordinators. VEs administer and grade tests and report results to the FCC, which then issues the license. U.S. licenses are good for 10 years before renewal, and anyone may hold one except a representative of a foreign government.

The higher the class license you have, the more privileges and modes of operation you are allowed to operate. Each higher class license requires progressively more knowledge of technology, rules and regulations. So, you can learn the basics now and become an expert as you go and still enjoy the hobby.

The Technician Class is today's "entry level" license for Radio Amateurs is the easy-to-learn easy-to-earn which requires passing examinations on radio theory, regulations and operations. The Technician class license requires passing 35-question multiple-choice examination, which covers basic regulations, operating practices, and electronics theory, with a focus on VHF and UHF applications. Technician Class operators are authorized to use all amateur VHF and UHF frequencies (all frequencies above 50 MHz) including access to Amateur Radio Orbiting Satellites (OSCARs) which opens up communication world-wide and beyond. Technicians also may operate on the 80, 40, and 15 meter HF bands using Morse code, and on the 10 meter band using Morse code, voice, and digital modes. No Morse code test is required.

The General Class license offers a giant step up in operating privileges. The high-power HF privileges granted to General licensees allow for cross-country and worldwide communication. Technicians may upgrade to General by passing a 35-question multiple-choice examination. The written exam covers intermediate regulations, operating practices, and electronics theory, with a focus on HF applications. You must successfully pass the Technician exam to be eligible to take for the General class exam. No Morse code test is required.

The Extra Class License authorizes to operate on all frequencies and all modes allocated to the Amateur Service. The HF bands can be awfully crowded, particularly at the top of the solar cycle. Once you earn HF privileges, you may quickly yearn for more room. The Extra Class license is the answer. General licensees may upgrade to Extra Class by passing a 50-question multiple-choice examination. No Morse code test is required. In addition to some of the more obscure regulations, the test covers specialized operating practices, advanced electronics theory, and radio equipment design.

## **What Are The Amateur Radio Bands?**

Look at the dial on an old AM radio and you'll see frequencies marked from 535 to 1605 kilohertz. This segment of frequencies is called a radio band. Imagine that band extended out many thousands of kilohertz, and you'll have some idea of how much additional radio spectrum is available for amateur, government and commercial radio interests. It is here you'll find aircraft, ship, fire and police communication, as well as the so-called "shortwave" stations, which are worldwide commercial and government broadcast stations from the U.S. and overseas.

Amateurs are allocated ten bands or groups of frequencies in the high frequency range between 1800 and 29,700 kilohertz, and another seven bands in the Very High Frequency (VHF) and Ultra High Frequency (UHF) ranges. Many Amateur Radio conversations may be heard around the world, given the right frequency and atmospheric conditions, Amateur Radio is basically two-way communication.

## **Where Do I Get More Information?**

The three best ways to learn about Amateur Radio are to listen to hams on the Amateur bands, read about Amateur Radio in the numerous books and magazines devoted to the subject and, best of all, talk to hams face-to-face. Hams take pride in their ability to "Elmer" (teach) newcomers the ropes to get them started. Most will welcome your interest.

To find out how to get started and who to contact in your area, go to [www.arrl-nh.org](http://www.arrl-nh.org) or call or write me. My contact information is at the top of this document. You may also call or write to The American Radio Relay League, 225 Main Street, Newington, CT 06111. Telephone: 1-800-32NEW HAM.

**Hope to hear from you soon.**

Al Shuman  
NH Section Manager