

## **Guide to Choosing your First Ham Radio**

### **To the newly licensed amateur radio operator or those looking to get into Amateur Radio:**

Well you have your ticket, (your amateur radio license), or you are looking to get your amateur radio license. You probably want to know which radio to purchase for your first amateur radio. The best way to answer this question is; what is your budget? What are your operating privileges? What are you looking to do, e.g. public service events, emergency communications, casual conversation, mobile operations/base operations, or where in the world do you wish to operate? Different Radio bands support a variety of transmitting ranges. There is no one correct answer and conversely no wrong answer.

One of your best resources is a knowledgeable friend, or an amateur radio club. Amateur radio clubs for your area can be found by researching the ARRL and doing a search for local clubs. Which radio is the right one is based solely on your budget, needs, operating privileges and personal taste.

The Charter Oak Radio Society (C.O.R.S.) will not discuss the different brands of radios, or models. What C.O.R.S. will try to help you with here is to discuss the various types of radios, e.g. Handhelds (sometimes referred to as HT's or handie talkies), mobiles, and mobiles/base. The right radio, the right brand of radio, or right model of radio is up to you as the operator. This short guide is intended to help you understand the basics of some of the common features. Which radio is best for you is based upon what you find for your budget and what you intend to use the radio for. There is a good publication out from the ARRL and is titled Choosing a Ham Radio • . You should pick up a copy.

**Handhelds FM Transceivers:** Handhelds are the most popular for public service events and for simple emergency communications. Handhelds have a limited power range; generally 3 to 5 watts of transmit power, and are designed for short range communications from radio to radio (simplex) or radio to repeater, where your coverage area is increased. Generally speaking the dual band 2 meter, 70cm (referred to as 440), is the most popular handheld. It is generally a good idea to have a spare rechargeable battery pack, an automotive adapter, and a desk top charger. There are a number of factors which can be used to increase the range of a handie talkie. With the addition purchase of an aftermarket antenna or an amplifier, the range can be increased, to a certain level. A good aftermarket antenna is recommended for emergency communications, as it will make more efficient use of transmit power or may allow you to use less battery power. Other accessories that can be purchased are: speaker microphones, external antennas, carrying cases and more, such as spare batteries. Handhelds do get very warm when in use. One thing that handhelds can do but is seldom mentioned is that it is possible to do some DX (long-distance communication) with a handheld. If you have a certain dual band transceiver it is also possible to do some satellite communications as well. Some of the newest handhelds also incorporate GPS tracking, and can do APRS (automatic position recording or tracking). Other handhelds have D-Star, which is digital communications, to a repeater and out through a gateway to the internet to other repeaters around the world. Some of the most common frequency bands for the handhelds are: 2 meter, 70cm, 6 meter and the 1.25 meter bands. The major limitations are of course the limited power on transmit and battery life. If you live in an area with a lot of repeaters however this may still be a good choice for your first radio.

### **Mobile or Mobile/Base**

Let's first start by saying that a mobile radio does not necessarily have to be put in a vehicle. With an external power supply it can be used for a base station or put into a back pack, with the proper battery. Unlike a handheld which comes with its own antenna, a mobile radio needs a separate antenna, coax line and an external power supply, a battery or car outlet. It is a good idea to have two in-line fuses one on each lead of the power cord close to the power source. Mobile radios offer more power at a few different power settings. There is also a larger heat sink to dissipate heat better keeping the radio cooler. Some mobile radios also have a data port built in for use with packet and digital communications. With this mode you may need to purchase an external TNC (terminal node controller), or a sound card and a computer. The size of the mobile radio also allows for better circuitry for better transmit and receive audio and other features not offered in handhelds.

### **Mono Band, Dual Band, or Multi Band**

Here you may want to look at what are your operating privileges. Do you have HF privileges? Do you do CW (Morse code), or do you like the digital modes. Dual Band transceiver and tri band receivers are popular in the handhelds with the more common ones being the 2 meter/440, the 2 meter/220 or a tri band being the 2 meter/6 meter/ 440 bands. This is a personal choice for you as you look to see what is best for you.

Multiband radios with 6 meters and a good antenna can sometimes work DX with sporadic E propagation. If you are a technician class licensee you may not think that you have any HF operating privilege, but you do. There is limited band width for you using voice, data and CW (Morse code). As your license class is upgraded to General and Extra more frequency band width and bands are open for you to operate.

**Power (input and output) and antennas** the amount of transmit power is crucial in communicating successfully. Ask other hams what power levels they are using to access different repeaters or dx stations. Most radios have multiple power settings, to conserve power and battery capacity. If you have a handheld and are using multiple battery packs it is a good idea to rotate regularly.

When choosing an antenna there are a number of factors that you need to consider. Is this for a handheld, mobile or a base? What is the terrain like in your area? How much space do you have? Do you need to go vertical or horizontal for the type of communication you are looking to do? This can be the single biggest factor in determining if your communications will be effective for any type of radio.

**Memories and programming** One last thought to give you in your decision as to which radio is right for you. How much memory do you want the radio to have -- e.g.: how many repeaters or frequencies do you want in memory. Also do you want to program by hand using the radio or do you want to program by computer program, in which case you may need to purchase software and programming cables.

**Conclusion:** One of the most important things you can do when deciding which is best for your first radio is to ask questions lots of questions. If you belong to a radio club ask other club members or friends who are amateur radio operators. Go to your local radio supply store and ask questions, look at the various radios and brand names, compare the features with the various radios. Know what your budget is, and how you wish to operate.

If you are a member of the ARRL there is a section for product reviews. Your first radio purchase will probably not be your last but let your first radio be a lasting and unforgettable experience.

The Charter Oak Radio Society would like to acknowledge the following for contributing: The ARRL in its publication Choosing a ham radio lead author Ward Silver N0AX. Also! We would like to thank N3PAO in his Guide to choosing your first radio, and many local hams as well. Â

From the Charter Oak Radio Society N1CRS