Get on the Air (New Ham Guide)

Courtesy of

Eastern Fulmont Amateur Radio Club

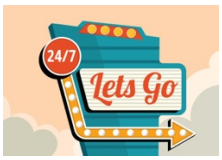
KD2ULC

Get “on the air today!”

Welcome to Amateur Radio!

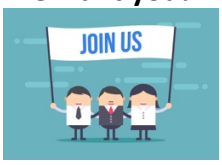
Congratulations you just passed your licensing exam and earned your way into an exciting new hobby.

Where do I start?



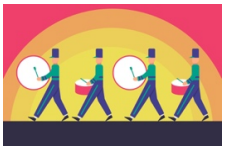
That question along with "How do I get on the air?" and "Where can I get help?", are common for a new licensed radio operator. Luckily, there are plenty of resources and help to get you up and running with your new hobby. This guide is designed to help answer some of the basic questions as well as point you in the direction of finding more information.

We want you!



The first and easiest step to get on the air is to join a club! Joining a local radio club will put you in contact with many other local hams and "Elmers". These folks have been hams for many years and offer a wealth of information, knowledge, and experience. Most hams find it satisfactory to lend a hand to other hams, they also remember what it was like when they just got started. If you are interested in joining the Eastern Fulmont Amateur Radio Club fill out the application in this packet, visit our website https://www.efmarc.org and go to the membership link, or simply attend one of our monthly meetings and speak to any of our members about joining. You can also send an email to info@efmarc.org.

The Bands



Included in this packet is a copy of the "Band Plan" published by ARRL - American Radio Relay League. This plan shows all of the frequencies that have been assigned to Amateur Radio and which license class has access to which portions of these bands: Technician, General, and Amateur Extra. The plan also outlines which types of operation are assigned to the various bands, for example: CW (Morse Code), SBB (Single Side Band – phone), data and so forth. Keep in mind, it is important to only transmit within the bands allowed by your license and to limit

them to the appropriate type for the band in which you are operating. This chart is invaluable to the new ham.

Listen and Repeat…

Also contained in this packet is information on Amateur Radio repeaters, including how they work and how you can use them to get on the air. A Technician Class license will give you privileges within the VHF and UHF bands. Most Technician Class amateurs start here. Also, dual band VHF/UHF radios can be very cost effective, some handheld units costing as little as $30. This gives a new ham the ability to get started at a very low cost, giving time to get comfortable and build experience. Repeaters are a great way to allow a greater distance of communication without breaking the bank on hardware.

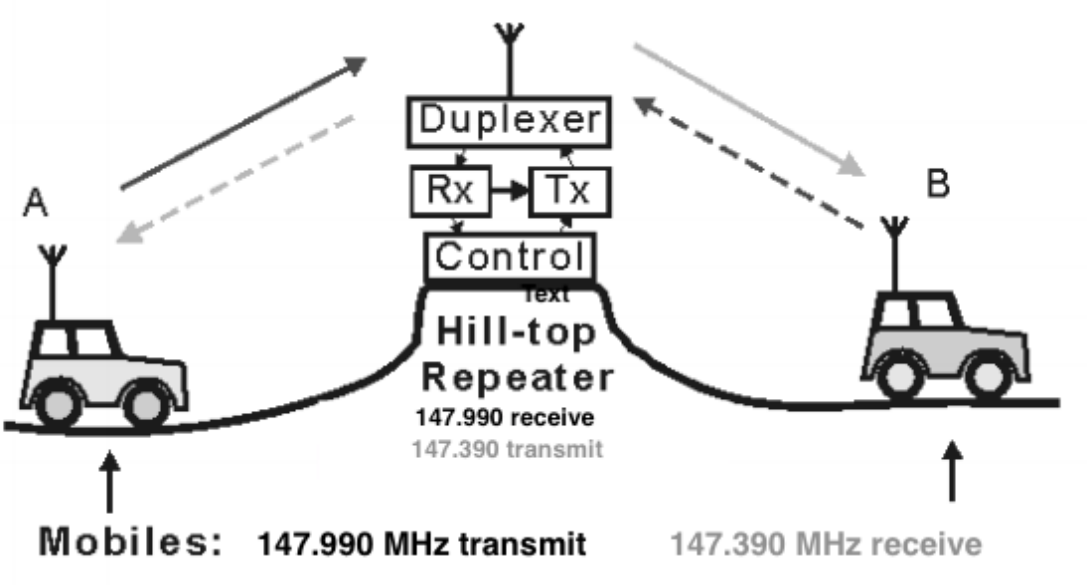
Getting You on the Air -- Repeaters

What is a repeater?

A repeater is a full-duplex radio which receives signals on one frequency and simultaneously re-transmits them on a second "offset" frequency, usually with higher power and from a better location with greater communications coverage range. A repeater greatly extends the operating range of amateur mobile and hand-held transceivers.

For example, on the 2 meter ham band these "offset" frequencies are 600 kHZ (or 600 kilohertz) apart. On other bands, the offsets are different. As a general rule, if the output frequency (transmit) of the repeater is below 147mHz, then the input frequency (listening) is 600 kilohertz lower. This is referred to as a negative offset. If the output is 147 MHz or above, then the input is 600 kilohertz above. This is referred to as a positive offset. For example: This club's VHF repeater is 147.390+ which means you listen on 147.390 and you transmit on 147.990 (adding 0.6 MHz).

Note: Most ham radios sold today set the offset once you have chosen the operating frequency automatically.



Standard offsets for each band shown below:

Output Frequency	Input Frequency Offset
51-52	- 0.5 MHz
52-54	- 1.0 MHz
144.51-144.89	+ 0.6 MHz
145.11-145.49	- 0.6 MHz
146.0-146.39	+0.6 MHz
146.4-146.5	+1 or -1.5 MHz
146.61-147.0	-0.6 MHz
147.0-147.39	+0.6 MHz
147.4-147.6	-1 MHz
147.6-147.99	-0.6 MHz
223-225	- 1.6 MHz
440-445	+ 5.0 MHz
445-450	- 5.0 MHz
918-922	-12 MHz
927-928	-25 MHz

PL tones, or "Private Line", is Motorola's proprietary name for a communications industry signaling scheme called the Continuous Tone Coded Squelch System, or CTCSS. It is used to prevent a repeater from responding to unwanted signals or interference. Tone Squelch is an electronic means of allowing a repeater to respond only to stations that encode or send the proper tone. In other words, if a repeater is set up to operate only when a PL tone of say, 94.8 Hz is heard by it's receiver, then it will allow the transmitting station access. If your station, (your mobile, base or hand held) does not transmit the tone that the repeater receiver has been programmed for, when you key up, then the receiver of the repeater does not hear you and will not be usable by your station until you set the proper tone in your radio to be transmitted when you key your mic. If a repeater is "In PL mode" that means it requires a CTCSS tone (PL tone) to activate the repeater.

Eastern Fulmont Amateur Radio Club operates a repeater for all members to use. The repeater information is:

Amsterdam repeater : 147.390 +offset 71.9PL

Make Your First Call

The wait is over! You passed your exam and have been issued your first callsign by the FCC. You have your station all set up and you are ready to make your first contact on a repeater! You chose a local repeater frequency and dialed it up on your rig. What do you do now?

Start by **listening** then **listen a little more**. This ensures the repeater is not already in use. This is the time you start questioning all the work you have done. You will think "Am I going to do something wrong?", and "What are the rules?". The simple truth of the matter is you will most likely forget some things, but don't worry!

Now is the time to announce who you are by callsign and that you are available to talk, e.g. "This is (callsign) listening". It is also helpful to announce which repeater you are using in case there is someone scanning multiple repeaters. This could look like this, "This is (callsign) listening on 147.390".

So, you just keyed your mic, gave out your call sign and now you hear.....your call sign and someone coming back to you with his call sign..... he or she un-keys and the repeater is waiting for YOU!

The first thing you can do is try to write down his/her callsign and name if given to you. Lots of good operators recognize a new ham instantly on the air and they will guide you with patience, understanding, and fun to help you relax and have fun. A good operator will never make you feel unwanted on the air. They may ask you to repeat your call sign just to make certain they understood who they are talking to and if you forget to give your name, they will ask for it. Most hams don't like to talk to a "call sign", so getting names and also locations helps to start the conversation.

But wait, What about that mistake I was worried about earlier? Again, don't worry. If you make a mistake the other station will most likely let you know what you did wrong and inform you as to the correct way in a friendly manner. Don't be surprised if your new contact asks you all the questions instead of the other way around. He or she is just trying to get you to feel relaxed on the air. As your experience grows in ham radio, aways try to remember your first contact and how excited and nervous you were. Now it's your turn and you are the one responding to a new ham and his first contact! Make him or her feel at home and..... be a good operator..... like your first contact was!

You must transmit your call sign at the end of a contact and at least every 10 minutes during the course of any communication. You do not have to transmit the call sign of the station to whom you are transmitting. Never transmit without identifying. For example, keying your microphone to turn on the repeater without saying your station call sign is illegal. If you do not want to engage in conversation, but simply want to check if you are able to access a particular repeater, simply say " (your call sign..... testing).
Remember! This is not CB radio!

Don't use CB lingo on any ham band such as 10-4, what's your 20, etc..... and don't say BREAKER!

Using the words BREAK, or BREAK, BREAK or BREAK, BREAK, BREAK or any combination of them on Ham radio can be misunderstood by an operator depending on his experience. The word "break" or combinations of it carries many different meanings in the ham community and in the English language.

According to THE EMERGENCY COORDINATOR'S MANUAL: The word "break" is never used UNLESS there is an emergency."

If a station needs to report an emergency, STOP TRANSMITTING IMMEDIATELY and allow the other station access to the frequency.

Talking to other stations:

Use plain language on a repeater. If you want to know someone's location, say "Where are you.... or what's your location?" If you want to know whether someone you're talking with is using a mobile rig or a hand-held radio, just ask: "What kind of radio are you using?" You get the idea. Most repeater use is of a "local" nature so signals will be usually of very high quality. The use of the phonetic alphabet is very helpful at times.

Don't call "CQ" to initiate a conversation on a repeater. Just simply listen to make certain the repeater is not in use and then key your mic and say your call sign and "listening". If someone happens to be listening and they want to talk to you they will respond.

Getting Experience

One of the best ways of getting experience is by participating in public service events where local radio clubs provide communications support. Such events include 5k road races, Halloween Pumpkin Patrols, and emergency communication drills held by local ARES groups (Amateur Radio Emergency Services). Check with local clubs to learn about their public service activities. These types of events provide real-world hands-on experience that's invaluable.

The Future - HF!

Once you get on the air, chances are you'll want to do more -- including upgrading your license to gain more operating privileges. Passing your General license exam will open up a whole new world to you, including the enjoyment and thrill of long-distance communications on the HF bands with hams hundreds or even thousands of miles away.

The General exam is not difficult -- if you are willing to invest some time studying. There are many study guides available, both in book form and on-line. There are also practice tests on-line so that you can check your knowledge and understand where you need to focus your studies. There are even cell phone apps you can download and install so that you can study wherever and whenever you have a free moment!

As always, remember that Elmers are always ready to help you learn and understand. The concepts behind what makes radio work may seem overwhelming and intimidating, but the basic theory is not hard to understand, especially once you begin your journey on the air! Welcome to your new exciting hobby!!