

Getting On the Air

(For new hams)

Congratulations, you have your ham license and are anxious to get on the air and enjoy yourself, making new friends and talking to far away places. It's simple. Buy a radio, hang an antenna, and start talking. Everyone knows that! Well....

Here is what new hams are really thinking: "Which radio should I buy? What kind of antenna and how do I put it up? What do I say when I do get in contact with someone? I don't know where to start!" All experienced hams have been through that phase of Amateur Radio. In fact, most of us remember those as some of the most fun days we had with the hobby. It is a time of innocence and discovery. Everything is new and exciting though, at times, a little intimidating.

The first advice about getting on Amateur Radio is to enjoy the experience. Have fun when you "Play Radio." There is not much point to the hobby if you aren't enjoying it. Fortunately, Amateur Radio includes such a broad range of different kinds of activities that you will find many that will hold your interest. This discussion is about getting on the air, though, so we will continue on that subject. The first is about buying that first radio.

Your First Radio(s)

Probably the first radio most new hams obtain is a VHF 2 Meter FM transceiver. This is good because that radio provides contact with local hams. It allows you to check into local nets and find out about local ham activities.

A 2 Meter FM transceiver is also very limiting unless you are living in a metropolitan area with lots of other hams close by. Many new hams become bored with this limited scope of operation and simply drop out the hobby.

By all means, plan on having a 2 Meter VHF transceiver. One of Amateur Radio's main functions is that of providing communications in emergencies and for public service. It will be needed for that. But what about talking to distant and exotic places?

To talk to the world outside your local area, a HF transceiver is needed. "HF" means High Frequency, as designated by radio engineers a century or so ago. This is part of the radio spectrum that extends from 3 MHz to 30 MHz. This is the frequency range where most of the world wide radio propagation occurs. Your transmitted signal bounces back and forth between the Ionosphere and the surface of the earth to reach distant places.

Even a new Technician class ham can operate on some of the HF ham bands. Voice SSB operation is available on the 10 Meter band. For the adventurous, CW operation is available on the 80, 40, 15, and 10 Meter ham bands. Right now, at the bottom of the

current sun spot cycle, 10 Meter operation is relatively sparse but even now, that band opens up occasionally.

There are many, many different models of radios, used and new, available to cover the HF range. Many of the newer models also cover 160 Meters which is in the MF (Medium Frequency) range and some 6 Meters which is in the VHF (Very High Frequency) range. Most of those manufactured in the 1980's and later will perform quite adequately in normal amateur operation.

When looking for your first HF radio, think of it as buying your "backup" radio. Buy a simple, reliable transceiver that will allow you to get started with minimal cost and a small learning curve. Once you have used this radio for a year or two, you can decide what you want as your permanent station transceiver. Having a backup is handy if your main radio is out of service for repairs. Calling your first HF radio your "backup" frees you from the agony trying to find that 'perfect' transceiver.

What you will be looking for is a solid state SSB transceiver that puts out about 100 watts. Ham band only receiver coverage is OK. Vacuum tube final amplifier is OK. An example of a good first transceiver in the new equipment market would be the Icom IC-718. It has relatively few knobs and only a small list of operating features but has good basic performance for casual operating. It would not be ideal for heavy contest operation or serious DX chasing but would still be useable for both.

Interestingly, the quality of new amateur HF equipment is such that the next step up in cost from the IC-718 takes you into the realm of radios that many folks are happy with as their main transceiver. That is not to say that the 718 is not also considered to be adequate by many though. From the 718 on up, today's transceivers provide more features and better performance than a whole room full of radio equipment from before the 1970's.

Chances are that whatever HF transceiver you buy will be good enough to get you started. It will, however, take time to learn how to get the best out of it. There is always a learning period with new gear. It gets shorter as you gain experience with more and different kinds of equipment. It will take longer with your first transceiver.

Don't feel like a dummy asking for help selecting or learning to operate your equipment. Nobody expects you to be an expert. Most hams love to give advice. Some of us even know what we are talking about. Just don't take everything you are told as completely accurate. The main thing is to not be afraid to ask questions. If nothing else, it's a great way to start a potentially long conversation with another ham.

Your First Antenna(s)

New hams often have a hard time choosing and installing good working antennas. It takes time and experience to know how. The best path is to plunge in and try a few home

made antennas. Building your own 2 Meter ground plane antenna or an HF dipole is very easy. Just use whatever materials you have available to cobble something together.

Your first antenna projects should be considered experiments. Don't fret too much about making something attractive and permanent. Figure out what works and what doesn't work so well.

What are the best bets for successful first antenna experiments? That's easy. The two mentioned above, the 2 Meter ground plane and the HF half wave dipole are at the top of the list. Any book on ham antennas will describe them well. Keep the feed line to the VHF ground plane short, preferably 25 feet or less unless expensive, high performance coaxial cable is used. Try to stay in the 50 to 100 foot length maximum length for the HF dipole.

Get the center of the HF half wave dipole up at least 20 feet, preferably 30 feet, above the ground and away from electrical and electronic devices. Power lines, computers, and Plasma TVs can create a lot of radio noise that masks weaker ham signals.

Avoid buying a commercial multi-band HF vertical antenna until you have experimented with a simple antenna and got it working well. Unless it is large and expensive, a multi-band vertical antenna will likely be inefficient and ineffective as compared to that simple half wave dipole.

Keep in mind that the difference between the loud signals and the weak signals on the ham bands is usually not a difference in transmitter power. It is usually the effort put into the antenna system.

Your First On-The-Air Ham Contact

It is normal for a new ham to be a little nervous making that first on-the-air ham radio contact. Equipment operation is unfamiliar. Communications procedures are unfamiliar. The whole process can be a bit intimidating. Well... Don't worry about it. We all go through it and have survived.

Always begin by mentioning that you are a new ham. Don't be shy about it. Most hams like being someone else's first contact. Most hams will go out of their way to help someone they know is new to the hobby.

Do not become embarrassed when someone points out an error you have made either in procedure or equipment operation. After all, the goal is to learn how to do things correctly and the best way to learn is by discovering and correcting mistakes.

Do not, however, fall into the trap of assuming the people you are talking to on the air are all experts and always correct. Our hobby is called Amateur Radio, not professional radio. Only a small percentage of hams have professional experience with two way radio

communications. We are a bunch of hobbyist. Double check the advice you are given when you have a chance.

What do you talk about? As mentioned above, tell 'em that you are a beginner and ask for advice on equipment and antennas. That will usually get things going. Ask the other person about his or her ham experience and equipment. Ask about his or her occupation. It doesn't usually take much to get a conversation going.

There is an important hint for new operators. Do not bother with radio jargon. Speak in plain language with every-day words. Most old timer's on ham radio use the ordinary, non-technical English on the air. It is often new hams trying to sound experienced that use lots of radio slang and jargon, and usually incorrectly.

After Your First Contact

After your first ham radio on-the-air contact, the next issue is getting on the air on a regular basis. Most of us feel that once we have gone to the trouble of getting a license, setting up a radio, and installing an antenna, we should do something with them. Making that first contact is a exciting and novel, figuring out what to do after that takes some additional effort.

If you are temporarily limited to operating a VHF FM transceiver, hanging out on the local repeaters can get dull if you are not near a metropolitan area. In rural areas, there may be only a hand full of regular users on a repeater. Most repeaters remain quiet most of the time.

As an alternative to repeater operation, simplex operation on 146.520 MHz is a good starting point. It is the nationwide simplex calling frequency and there are usually hams that hang out there. Many people seem to be more comfortable chatting or "rag chewing" on simplex though most repeater groups do not mind folks using their repeaters for idle conversation.

HF operation presents a much different set of opportunities and problems. There is almost always someone to talk to on at least one of the HF bands. However, we are currently in a sun spot minimum meaning that radio propagation on the higher HF ham bands is generally poor. That means that Technician class licensees, with voice SSB operation limited to 10 Meters will hear little activity until the sunspot count starts climbing again. Even now, that band will open periodically open up for distant contacts.

All HF bands are available to General class licensees. 20 Meters is generally available for both North American and DX operation during daylight hours. The lower bands are available for stateside contacts and occasional DX operation.

Calling CQ

One of the simplest ways to make contacts is to call “CQ.” Find an empty frequency in your allowed operating bands and put out a call such as: “CQ CQ CQ, this is N0GW, N0GW Lebanon, Missouri, calling.” Repeat that a few times and then listen for a few seconds for a reply. Repeat this procedure as necessary. It may take several cycles of calling CQ and listening before you have a response. Someone must tune to your frequency and hear you calling before they can answer you. Of course, your chance of having someone answer you is greatly improved if you are calling on a band that already has some activity on nearby frequencies.

Likewise, you can tune around, looking for someone else calling CQ. Except for 10 Meters when it is open, the odds of finding someone calling CQ is low. Most contacts are made by calling someone already involved in a conversation with another station.

Joining a Conversation That Is Already In Progress

Another way to make radio contacts is to join an existing conversation. Alternatively, you can wait until the first conversation ends and call the station remaining on frequency. When joining a conversation already in progress, first make sure that you can hear all of the stations currently involved. Doing otherwise is generally considered rude.

To join an ongoing conversation, simply give your call sign at some convenient break point. These breaks usually happen when everyone on frequency has used up the current conversation subject and is ready to talk about something else. Don’t say “Break” or “Break, Break.” That way of interrupting a conversation is used to indicate you have something critical operationally to handle that has nothing to do with the current communications.

Also, for reference, saying “Contact” tells people that you would like to take over the frequency for a few seconds to call someone and will move off the frequency immediately once you have connected with them.

Something to realize about most of the group conversations you come across on the ham bands is that they are just some hams hanging out on a frequency “Playing Radio”. They may know each other pretty well so their conversations may sound like they would not like anybody butting in. Actually most groups welcome new people into the conversation. They like having something new to talk about. If after you have joined the conversation for a while and then sign out, you will probably have someone tell you when they normally get together on the air and to join them again. Take that as a clear, unambiguous, sign that you will be welcome again. (Then you just have to decide whether you would like to talk to that particular bunch of old farts again!)

Of course, always keep in mind that this is Amateur Radio. People from all walks of life and all kinds of backgrounds have ham licenses. Not all of them are friendly or helpful all the time. Some are a pain in the butt all the time! Don’t try to help them. Ignore

them. Fortunately, our radios come with big tuning knobs so we can just move to a different frequency if we encounter unpleasant personalities. The ham bands are big so there is plenty of room to get away from them.

Nets

Yet another way to get in regular radio operating time is to join a net. Nets are regularly scheduled, organized operating activities. There are hundreds of different kinds of nets covering things like handling emergency communications, maintaining contact with pleasure boats at sea, group discussions of various equipment types, or just about anything you can think of. The ARRL and other groups maintain lists of nets providing info about the purpose of each net, what frequency it meets on, and at what times.

Once you find a net you might be interested in, listen to their operating procedures and follow them to check in. Most nets are directed nets, meaning one station is designated net control. The net control station decides who talks and when. Do not attempt to check in until the net control station calls for it. Once you have been checked in, simply follow the net control station's instructions.

Most net activity turns out to be little more than checking in and saying a few words of greeting to the rest of the group. Net operation does, though, give you an opportunity to take part in something you find interesting.

Contests and Special Events

Do not overlook contests as a way to enjoy radio operation. There is usually at least one contest and several special events on the bands every weekend. Contests are typically activities where stations attempt to contact as many other stations of particular type as possible in a specified time frame. There are contests for contacting DX stations, stations in different US states, stations with unique call sign prefixes, or a host of other categories. Contests can be limited to one band or might include many bands.

It is not necessary to become a serious competitor in a contest to enjoy it. Contests allow you to make contacts with people who are anxious to hear from you. Don't expect, though, to have long chats with contest operators. They are trying to work people fast so a contact is little more than exchanging call signs, signal reports, and some contest specific item such contact number or some sort of geographic designator.

You can casually tune around picking and choosing stations to exchange information with. Common things to do might be seeing how many US states or foreign countries you can contact in an afternoon

Check with the ARRL contest descriptions to find out what the rules are so you can know what is expected of you while operating. You can usually get the rhythm and content of a contest exchange.

Contests can be fun but they can also be a crazy jungle of activity. They are a good way to sharpen your skills at operating under difficult conditions. Some people are very competitive so you can expect to have to struggle through interference to make some contacts. It can be hectic but fun if you don't take it too seriously.

The term 'Special Event' has a specific meaning in Amateur Radio. This is an operation where one or more stations operate to celebrate some current or historical event. Often, making contact with one will allow you to request a certificate or card for the event.

Some special events may sound a bit lame like the "Garlic Festival" held in Gilroy, California but to local folks it is a big deal. (If you have ever driven through Gilroy in garlic season, the power of the garlic aroma lets you know that it really is big a deal!) The 'Route 66 On The Air' event is very large and very popular with thousands of stations participating. Check on the ARRL web site for a listing of upcoming special events.

DXing

Yet another great operating activity is DXing. This is searching for and contacting stations in all parts of the world. DXing requires that you learn what bands open to what location at what time. The Ionosphere is no more reliable than the weather, though, so there is a lot of luck associated with making DX contests. One day you may hear only South American stations, Europe the next, and the South Pacific the next.

Most DXing occurs on 20 Meters and above so right now at the bottom of the Sun Spot cycle, DXing is more difficult than near the top. At the top of the cycle, it is sometimes possible to talk to just about anywhere on the planet on 10 Meter with only 25 watts and a wimpy antenna. Most of the time, though, it is just patience and practice that allows you to make consistent contacts with DX stations.

DXing is a popular activity so contacting some of the rarer locations can be like a contest. Well, except in this contest every other station is trying to contact the same station you are. People will work for days to make a two second contact with some of the rarest stations. It is not necessary to be that serious about DXing.

It is OK to just chat with someone in one of the non-rare foreign countries and that is what most new hams are looking to do anyway.

Some General Hints

There are some basic rules to follow when getting on the ham bands. They are not difficult to remember. Ignore them and your operating success may be less fun than you have expected.

1. Operate only inside your allowed frequency ranges.

2. Operate you equipment per the instruction manual. Do not use the “all knobs to the right” operation commonly found on Citizens Band.
3. Avoid jargon. Use plain language.
4. Listen before you transmit or call someone. Ask if a frequency is in use before you begin operation on what appears to be an empty frequency.
5. Identify your station often, at least every 10 minutes of operation. Remember that Amateur Radio uses the international standard of placing the transmitting station’s call sign last.

Most of all, remember that the other people you talk to on Amateur Radio are hobbyist. They are not infallible experts. Always take advice or criticism with a grain of salt. It seems that ham bands have a fair share of self styled experts. (on every conceivable subject!) Often it seems the less they know about something, the more adamant they are about their position on a subject.

Be especially careful about accepting technical advice from hams you don’t know personally. For every good bit of technical advice given on the air, there are at least as many that are bad. Just use your common sense and verify what you are told before making unnecessary changes to your station.

Just Do It!

The point of Amateur Radio as a hobby is to enjoy yourself. Sure, we help out in emergencies and at public events, but really that is also part of the fun. Many of us enjoy tinkering with the technical aspects of radio communications and equipment. Most of us spend much more time just tuning around listening to what is going on than transmitting. Find out what you enjoy in the hobby and do that.

What has been described here doesn’t scratch the surface of what is available in this hobby. CW, SSB, and VHF FM is not all there is. There are dozens of digital modes in use for various kinds of operation. There are folks communicating through ham satellites. There are people communicating by bouncing signals off meteor trails and the moon. There are people running radio propagation experiments.

You have to start somewhere in this hobby so just pick of the microphone and talk to someone! ...And have fun!

Oh Yes! That ARRL web page: <http://www.arrl.org/>

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