

Get on the Air Guide for New Amateur Radio Operators (Hams)

Greetings. This guide is designed to assist new Ham Radio Licensees in their quest to Get on the Air! As a newly minted Ham Radio Operator it is now time to take the steps necessary to actually use your license and get on the air. This guide will take you through some steps to help you move forward and communicate with other Hams. This guide is not a be-all end-all to what you should or could do as a new Ham but it should help you move from getting a callsign to using local repeaters and otherwise using your license.

Step one: Download your license from the FCC. To do that you click on the link they sent you via email and download your new license. Print it out. Cut out the two forms. One is the “suitable for framing” license that you hang up in your radio room or “shack” as some folks refer to them. If you don’t yet have a room designated, hang it where folks can see it. It is an accomplishment and you should be proud of achieving your goal. The second form, on the same print out, is smaller. It is the license copy you carry around with you in your wallet or purse. Cut this out and get it laminated (if you so desire). You can go to a place like Office Depot to get this done or you can buy some self-adhesive laminating sheets and do it yourself. Having your license on you, especially when you are operating portable or mobile, is proof you have the authority to operate in case anyone asks.

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Step two: Get a radio. We recommend you obtain a dual band VHF/UHF handheld radio as your first radio purchase. Analog is fine but if it also has digital capability, all the better. But that is up to you to decide. Going to be outdoors in the rain and elements with it? Then you might want to investigate radios that have some sort of water resistance. Want a radio that will allow you to get on the air now and then perhaps after you get comfortable expand into getting into the digital world? Get one that is dual band and has both analog and digital capability (Yaesu System Fusion or ICOM D-Star for example).

Do your research so you get the most out of your purchase. The key is to get a radio that you will be comfortable with, is relatively **easy to program from the face of the radio** (does not require a computer to program it), is durable enough to take some abuse, is supported by the manufacturer and will provide a long service life. When buying a radio one thing to remember, you get what you pay for. Sources for radios include the following:

Ham Radio Outlet

Gigaparts

DX Engineering

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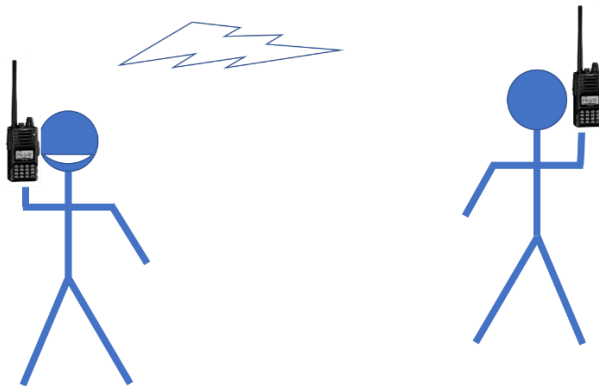
Step three: You now at least have an Analog capable radio. Pull out the manual the radio came with and look for several things you will need to know in order to program the radio; the function button, the memory button, the VFO button and any buttons pertaining to enabling Tone and Tone Code (CTCSS).



As a first step, go to your radio's operating manual and find the section that tells you how to program a frequency into memory. Since each radio brand has its own steps on how to do this, you will need to follow those steps in order to select a frequency and store it into memory. First, program in 146.52 into channel 1 of your radio's memory. This is the National Simplex Calling Frequency for 2 meters. Since it is simplex, you do not need to set anything other than the frequency. Normally, you simply push the VFO button and then key in the frequency. Then you save it to memory. Once this is done, if you have another Ham helping you, now is the time to check out your radio (and your programming). Go to the memory channel you put 146.52 into and have your Ham radio friend do the same on their radio. Standing 30 feet apart (or more) push the transmit button on your new radio and call your Ham radio friend. It would be something like (your friends callsign) this is (your Callsign). You don't need to say "over." You can if you want but it is not required. If you programmed your radio properly, your Ham radio friend would hear you and respond by saying

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(Your Call Sign) this is (Your Friend's Callsign) go ahead. You could then say something like how is my signal or how are you reading me, etc. If you were successful, great. If not, make sure the LCD screen on your radio displays 146.52, does not have a + or – sign displayed or a T (Tone symbol) displayed along with the frequency. If the screen just shows the frequency, make sure both you and your Ham radio friend are on the same frequency and settings. If everything checks out refer back to your radio's manual and see what might have gone wrong.



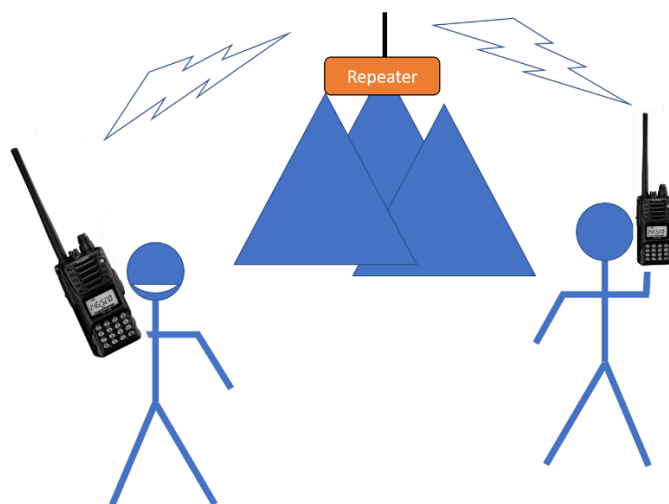
Step Four: Assuming you succeeded in making a simplex contact (and possibly your first Ham radio contact) its time to move on to programming in some Repeater Frequencies. As you learned in your Technician Class Study Guide, Repeaters allow wide-area two-way communications. Repeaters are located on mountain tops or other higher-than-ground-level locations.

To program in a repeater frequency, it is much like programming in a simplex frequency but this time you are programming in the Repeaters Output Frequency. Go to the VFO like you did before. Punch in the frequency. As a start you can put in 146.94. Many radios automatically recognize this frequency as a repeater frequency and the offset is automatically set. So you may see a + or a – sign somewhere on your radio's display. If you don't, look in the manual and ensure the offset for the frequency is correctly turned on. The 146.94 repeater has a minus offset so it would show a – sign on your radio's LCD screen.

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Next you will enable Tone. The 146.94 repeater requires a Tone to activate. To do so you usually push the Function button, and then the button that controls Squelch Type. You want Tone Encode or something similar turned on. Once you do this you should see a T on the display above the frequency. Lastly, you push the Function button again and then the button controlling the CTCSS Code or Code (again this is different for many manufacturers so refer to your manual). The 146.94 repeater has a Tone Code of 100hz. According to the instructions in the manual select the correct Code. In Idaho many repeaters have a Tone Code set for 100hz, for example. Once you are fairly sure you have the correct frequency, correct repeater offset and the correct Tone Code enabled, save this from the VFO into Memory according to the instructions in your radio's manual.

Now it is time to test whether you can get into the Repeater and talk to someone. If you have your Ham Radio friend with you, ensure both your radio and their radio are on the same repeater frequency with the correct Offset, Tone and Tone Code. Go outside (testing from inside your house or garage may not work well depending on the location of the Repeater or the location of your house). Your Ham radio friend can also go outside but you should try this about 30 feet apart (to mitigate any interference between radios).



Again, you call your Ham radio friend by holding the radio up and pushing the transmit button, calling them by saying (their callsign) this is (your call

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sign). The repeater should hear you and activate sending your message out the repeater output frequency. Your Ham radio friend should hear it and can then respond like they did when you tested the simplex frequency. If it worked, great! If not, try to figure out why by re-reading the manual and validating the Frequency, Offset, Tone setting and Tone Code.

Assuming you were successful with all of the above, here is a list of Repeater Frequencies for the Treasure Valley area you may want to program into your radio.

146.94 - and a PL of 100 (Idaho Society of Radio Amateurs)

145.25 – and a PL of 100 (Boise County Amateur Radio Club)

146.84 – and a PL of 100 (Voice of Idaho Amateur Radio Club) 147.24

+ and a PL of 100 (Voice of Idaho Amateur Radio Club)

As a side note: if you consistently like using a specific repeater to talk to other Hams you may want to consider joining the club associated with that repeater even if you don't want to attend meetings. By doing so, you are helping support the cost of running the repeater. Repeaters are owned by a Club or by an individual and they can be expensive to maintain. Club dues are usually as little as \$15 a year.

If you have a smart phone, there is an application you may want to download and use. The application is called **Repeater Book**. It will allow you to view on your phone all of the repeaters of the various frequencies, bands and modes available in your area. You can search for specific repeater types, frequencies and modes as well. We highly recommend this. If you travel and take your radio, you can look up local repeaters at your travel location and perhaps try to talk to Hams in that area as well.

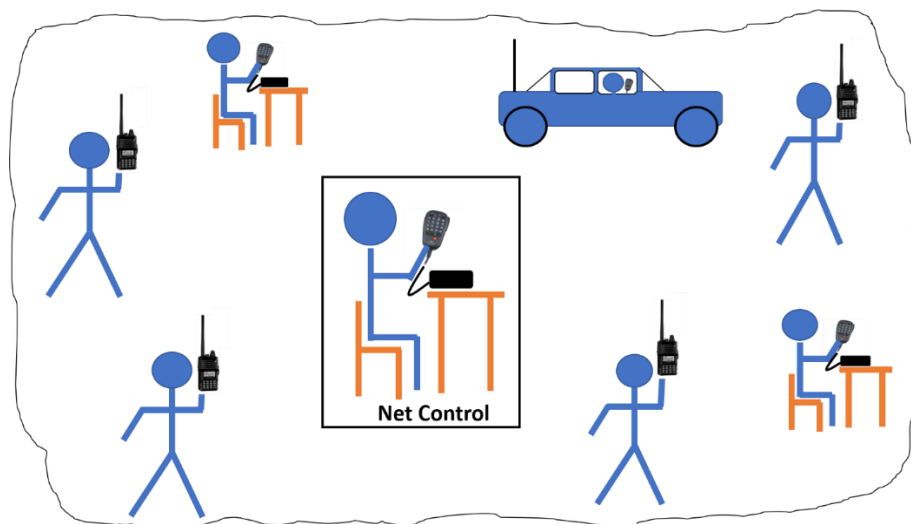
Step Five: Talk on your radio. If you followed the previous steps to the letter, you most likely made at least two contacts on your radio with your new call sign. Now it's time to practice and use your license on a regular basis. To do that you may want to consider checking into a weekly radio

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net. What does this mean actually? Many clubs, organizations and even some individuals run weekly (or even daily) radio nets. A radio net is basically centrally run (controlled) check-ins on a given repeater frequency. A Net Control will run the net. Nets start at a specific time. The Net control will lay out the rules for the Net and will then start looking for check-ins.

Many nets want operators to check in alphabetically according to the letters after the number in their callsign (otherwise known as your callsign's suffix). For example, if net control asks for check-ins with a suffix starting with A, B or C and your callsign is K7Axx, you would check in since your suffix starts with A. Since anyone else having an A, B or C in the last part of their call sign will also be trying to check in, it is a judgement call as to when you transmit your call and attempt to check in. It is generally a good idea to wait until you don't hear anyone and give it a try as opposed to jumping in right away.

Sometimes there are two folks attempting to check in at the same time and your transmission is garbled or missed. Don't worry about it, wait and attempt it again when the Net Control asks for additional check ins for A, B or C. Net controls usually keep asking for specific check ins until no one answers and then they move on to the next set of letters. If all else fails, wait until the end of the Net and when the Net Control asks for Late, Missed or Visitor stations, go ahead and try again. As long as you are following what Net Control is asking for, you can't go wrong.



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One thing to know when checking into most nets, the net control may ask that you check in using the phonetic alphabet. The one in your study guide that starts with Alpha, Bravo, Charlie, etc. So when checking in you would say something like “this is Kilo Seven Bravo Sierra Echo” if checking into the net with the callsign of K7BSE. If you don’t remember the appropriate phonetics of your callsign and don’t have a good grasp of the phonetic alphabet, just look up what you need and write it down. While you are at it, write your name spelled out in the phonetic alphabet too in case you need to spell your name out while checking in or talking to another Ham. This may happen if your signal has a lot of static or noise on it when trying to check-in and Net Control wants to put your name down as having checked in.

The following is a list of radio nets and their times. All of these except one are VHF 2 meter frequencies. All of these welcome your check-in as long as you follow the protocol and Net Control’s instructions. If you are unsure, listen to a few nets to get a feel of what goes on. Once you have it down, go ahead and check in. This is simply part of the process of building your Radio Operator skills.

All Times are Mountain Time. Contact specific clubs (or their web pages) for correct tones and offsets. Or check **Repeater Book** for the correct tone and offset.

ISRA weekly net:

Repeater: K7BSE, 146.940 MHz

Date & Time: Sundays at 7:00PM Local time website:

<http://israboise.org/>

Voice Of Idaho Weekly Net:

Repeater(s): W7VOI, 146.840 MHz, 444.900 MHz, 146.620 MHz

(These repeaters are usually linked during the net)

Date and Time: Thursdays at 8:00PM local website:

<http://www.voiceofidaho.org/>

Boise County ARC weekly net:

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Repeater: K3ZFF, 145.250 MHz
Date&Time: Mondays at 7PM local website:
<http://www.wa9wsj.com/TOC.htm>

Snake River ARC
Repeater: W7VOI, 147.24 MHz Date&Time:
Tuesdays at 8:00PM local website:
https://k7si.org/main/page_home.html
American Legion Post 113 ARC(N7LGN)
weekly net:
Repeater: K7BSE. 146.94 MHz
Date&Time: Thursdays at 7:00PM local website:
<https://n7lgn.org/>

Over the Hill commute group net:
Repeater: W7VOI, 147.240 MHz
Date&Time: Weekday Mornings at 7:10AM local

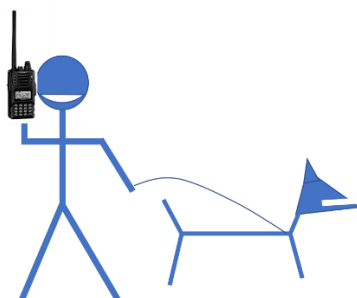
New Hams Net:
Repeater: W7VOI, 444.900 MHz
Date&Time: Wednesday Mornings at 11:00 AM local

Step 6: Use your license and radio. Many folks get a license, get set up on their radio, check in to a few nets and then move on to other priorities thinking they accomplished what they wanted and now they can focus on something else. The thing about radio communications skills is they go away if you don't use them. If you don't practice, you won't have what you need in an emergency. In the military, exercising a communications capability is a persistent and ongoing activity. There are daily, weekly, monthly and yearly communication drills to sharpen skills. Given that Ham Radio Operators have an FCC licensed capability, it is important to use that capability often. We do this to validate our equipment works, validate that we know how to use it and to validate that we can use various repeaters or other communications means.

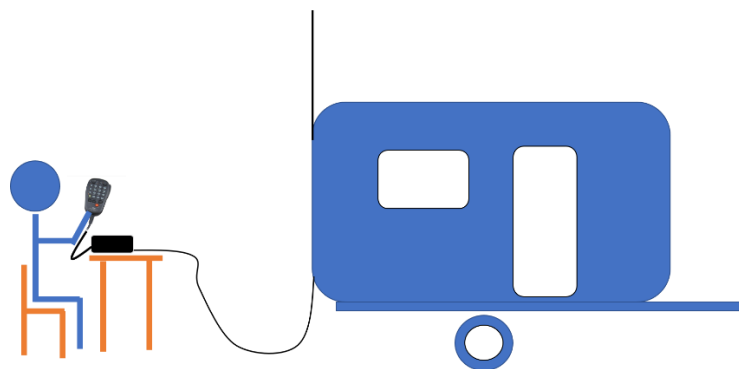
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We can go out and test different locations around where we live or where you travel to in order to see if those locations allow us to get into repeaters. We do this because we want to know where and how we can communicate when we need to. Its easy to incorporate your Ham radio activities into your daily life and your weekend hobbies. You can put a radio in your vehicle and use it on the move. Note here: Ham radio is exempt from the Idaho hands free law pertaining to Cell Phones and other devices while driving.

You can carry your hand held on your daily walks or when walking the dog. If you don't like the radio hanging off your belt, buy a chest holster or neck holster. You could even have your dog carry your radio while you monitor a local repeater frequency and then grab it when you want to respond to a call from a local Ham.

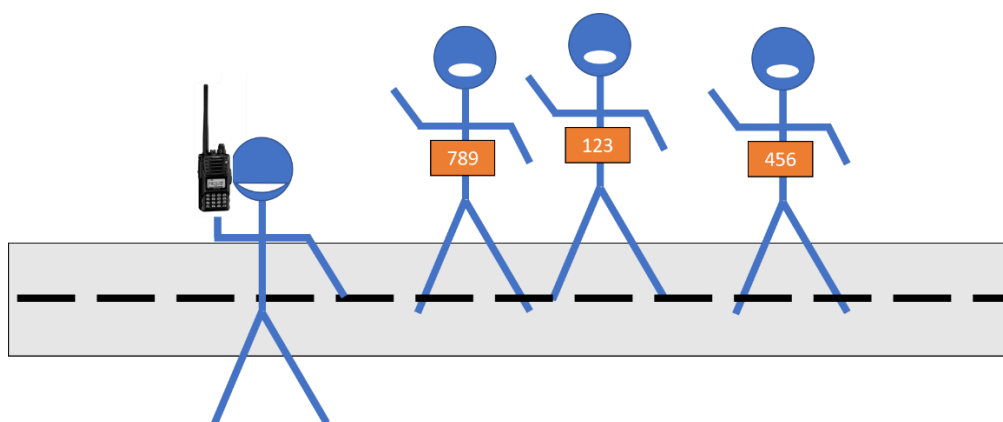


You can take your radio on camping trips. You can even install a mobile radio in your camp trailer! There are no limits. It's fun to see if you can "get out" from Idaho's campgrounds or back country and, in fact, it could prove to be a life saving addition to your outdoor gear!



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There are public service events where you can volunteer and use your license and radio. The Idaho Sled Dog Challenge uses a number of Hams to provide critical on course communications. Some other events using Ham Radio Operators for support include the Riggins Jet Boat Races, the YMCA Spring Sprint Triathlon, the Run to Robie Creek and more. Each event allows you to support a public event by using your radio in support of the organization running the event. So, if you want to support your community or get out and put your license and radio to good use, event support is a great way to do so.



The possibilities are endless. As a Ham Radio Operator, you can now explore the possibilities as much or as little as you wish. You put in the work to get the license. Now it's up to you to enjoy it.

Step 7: Learn More About Ham Radio. This step asks you to explore Ham Radio and perhaps get out and join a club. There are many clubs out there. It is up to you to find one that meets your needs. The different clubs have different activity levels. Some just do presentations. Others get out and host Ham related activities. Still others do projects and conduct project builds. A few might do all of these things. Do some research and see what peaks your interest. Email the club you want to visit and find out when their meetings are and go to one. If you like what is going on, great. If not, find another club. You can also join the American Radio Relay League. The ARRL has a ton of resources available to learn more about Ham Radio or

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even help you upgrade your license should you desire to do so. It also publishes a monthly magazine with a variety of stories and topics covered.

To find a local club go to: <http://www.arrl.org/find-a-club>.

We hope this guide helps you. This guide is only a starting point. There are roughly 10,500 Ham Radio Operators in Idaho. There are probably 10,500 opinions on how to get on the air. What is talked about above is one way to do so. If you have questions or would like additional guidance, send an email to k7bse14694@gmail.com and we will do our best to assist. We have members that can assist you with questions about Yaesu, ICOM or Baofeng radios.