



How Do I Become a Ham Radio Operator?

1. There are a few basic requirements:
 - a. Must have a valid US Mailing Address and an email address
 - b. Must have a valid Taxpayer ID number, such as a Social Security Number (SSN)
 - c. You will need to get an FCC Registration Number or (FRN) – No big deal.
Get it directly from the FCC web site (<https://apps.fcc.gov/cores/userLogin.do>)
2. You will start with a Technician level license. Each level comes with privileges and limitations. After you get the Technician License, you can then upgrade to a higher level of General or Amateur Extra class.
3. Study for the Exam. There are study books with sample tests and answers and there are online study courses available including mobile Apps. There are lots of resources such as online classes and YouTube has got some really good videos that do a good job of explaining things.

A free tutorial is available from Jack Tiley AD7FO (<https://ad7fo.com/training.html>). Please respect his labor of love as he basically creates a book around all the questions with additional information and resources.

Hamstudy.org (website-free, app \$ 4.00) is just one example. You can study using your computer or downlad an app for your smartphone and study anywhere you want.
4. Take your EXAM when you are ready. There are only 35 questions for the Technician and General exams. Here in the Tri-Cities (WA) area, we are fortunate to have old fashioned in-person, paper and pencil testing every other month (www.w7az.org) and there are also online testing options available.
5. After passing your test, your call sign will be issued quickly and you can get on the air.

What can I do with my TECHNICIAN LICENSE?

You Can:

- Operate on Simplex and Repeaters to talk locally and regionally usually the 2m and 70 cm bands, but also the GHz bands
- Operate on 6 Meters
- Operate on 10 Meters SSB
- Operate on 15 Meters CW
- Operate on 40 Meters CW
- Operate on 80 Meters CW
- Contact the International Space Station (ISS)
- Operate on AllStar, D-STAR, Echolink, IRLP, Wires X and others and to talk to the World
- Use APRS (Automatic Packet Reporting System) and other Digital Modes

What can I do with my GENERAL LICENSE?

You Can:

- Operate on the 160m through 10m bands on 80% of the available frequencies, phone (voice), digital modes (FT-8, RTTY, JT8CALL, etc.) locally, regionally and world wide

What can I do with my AMATEUR EXTRA LICENSE?

You Can:

- Use any of the FCC allowed frequencies and power levels, including all the privileges of the Technician and General Class of course.
- Have bragging rights to belong to an elite group of less than 25% of all HAM operators.



Now that I've got my license, where do I go from here.?

Now that you have passed the exam, we would like to suggest a few things you may consider after you receive your call sign.

1. Join the Tri-Cities Amateur Radio Club or another club in your area. (WWW.W7AZ.ORG). There is an application form (<http://www.w7az.org/content/new-membership-or-renewal-form>) to mail in. Sorry for the shameless plug. 😊
2. Join ARRL as soon as you get your call sign. WWW.ARRL.ORG
ARRL has great resources for beginners and established hams, a monthly magazine, three other online magazines (one especially for beginning HAMS), podcasts, equipment reviews, do-it-yourself projects, contests, inspirational stories, ham radio equipment insurance, etc.
3. Set up your ARRL email account that will forward messages to your regular email. It will typically be: your call sign @ ARRL.NET (this will only work as long as you remain a ARRL member).
Another suggestion is to setup a "gmail" account (or on your domain of your choice), with your call sign in it (like me1ham @ gmail.com).
4. Set up a QRZ account and enter your information. www.QRZ.COM
QRZ is a world wide database of ham radio operators.
They also have equipment reviews, user forums, equipment sales, look up call signs and read bios of operators. And HAM radio operators from all over the world can learn about you.
5. Get a radio for at least the 2 Meter VHF band. It can be a HT (Handy Talky) or a mobile radio with an external antenna.
6. Program your 2 Meter radio for the local repeaters and one or more Simplex frequencies. This will require setting the frequency, the offset and the tone.
 - a. This can be done manually for any repeater you want to use.
 - b. The preferred method is to use radio programming software that can let you download all the repeater info within a range from your location.
 - i. Chirp (<https://chirp.danplanet.com/projects/chirp/wiki/Home>), the software is free but you will still need a cable to connect your radio to the computer
 - ii. RT Systems (<https://www.rtsystemsinc.com>, comes as a complete package, software and cable, highly recommended, but best of all - it works.!

7. Join in on local nets and get to know other hams.

The morning net for TCARC is pretty much every day of the week at around 7:30 am local time (PT - Pacific Time) on the W7AZ repeater. It is on 146.640 Mhz. That repeater uses a Negative offset and a tone of 100HZ.

The subject areas change every day. The conversation is always interesting and it is very casual. You can always ask technical questions of the net control operator and others in the group.

8. Ask for help. There are many people that are very willing to help you get started. From helping you spend your money on equipment to installing antennas and programming a radio, etc.

9. Set up an ECHOLINK account. This app will allow you to connect to local repeaters as well as repeaters all over the world using your cell phone or computer. It's very handy. www.Echolink.org

10. Get on the air and have some fun!!

THEY CALL OUR HOBBY AMATEUR RADIO. THE WORD "AMATEUR" COMES FROM THE LATIN "AMATOR" MEANING **LOVER**. WE'RE LOVERS OF RADIO.

WE'RE ENAMORED OF THE NOTION OF COMMUNICATION OVER GREAT DISTANCES WITHOUT ANY PHYSICAL CONNECTIONS.

OF COURSE, THE NON BELIEVERS DON'T UNDERSTAND OUR OBSESSION

1. TCARC has face-to-face meetings on the first Monday of each month and usually have a demonstration or talk about a relevant topic each month. During COVID restrictions we have held our meetings on the air using the 146.64 repeater W7AZ and on "Zoom". The live meetings are at the American Red Cross Building at 7202 West Deschutes Ave., Kennewick, WA 99336. Use the small metal side door on the south side of the building (to the left and around the corner of the main entrance)

2. There is a ham shack available to club members and experienced hams can show you how to use it.

3. The club also has a small lending library of books and some test equipment available to loan.

4. The club operates three repeaters (W7AZ 146.640 Johnson Butte, W7VPA-R1 146.760 and W7VPA-R2 449.100 on Rattlesnake Mtn) in the Tri-Cities area that service SE Washington and NE Oregon.

As a new HAM, the social nets are a great way to get over "MIC FRIGHT". You will learn by listening and participating. It will give you a chance to hear how things are done. In no time at all, you will feel like an expert.

You will get to know other hams and they will get to know you. All of them are willing to help you with any question you might have. And if they don't know an answer, they will help find another ham who will have an answer for you.

HAM ETIQUETTE

Also known as what to do and not to do when you are ready to key up:

- 1 Two topics are usually NOT welcome - politics and religion.
- 2 The phonetic alphabet, no other way around as to memorize it
- 3 Say your call sign slowly, clearly and articulate
- 4 Remember whether you are talking on a Simplex frequency or a repeater frequency.

On simplex, you can key up and your signal is immediately received at the other station (unless there is a pile-up, where several stations are trying to get a word in)

On a repeater system, it takes a couple of seconds for the repeaters to unlink and to link up again. Best to key up, wait a second and then speak - or say your call sign twice, once phonetically and then again "shorthand". On large repeater systems, you will have to wait up to three seconds. Yes, there are systems out there which have 200+ repeaters linked up all over the planet.

In between stations talking, always leave a 3 second pause. That frequency is not only used for rag chewing but emergency calls need to have a chance to get in. In other words, after the station before you stops talking, wait three seconds, key up and after one more second start talking. Make it a habit, it's easier than you think.

Regardless of simplex or repeater frequency, you should keep the following in mind:

Some operators have a habit of scanning the frequencies for any action. As such, it takes the radio some time to run through all frequencies, listen and either stop for a few seconds, or to continue with the scanning. This all takes time.

Depending on several factors, the scanning can be pretty quick, other times, it can take several seconds for a full round of scanning.

If you key up and immediately start speaking, you may not even be heard or only the last part of your call sign or even only the last part of your sentence.

Hence, the best way is to key up, wait a second or two and then start speaking.

SIMPLEX AND REPEATER FREQUENCIES (MHz)

SIMPLEX 146.520
National Calling Freq.

SIMPLEX 146.580
Tri-Cities Simplex Freq.

SIMPLEX 446.000
National Calling Freq.

REPEATER FREQUENCIES (MHz)

Frequency	Call	Offset	Tone (Hz)	Location
145.390	W7UPS	- neg	103.5	Horse Heaven Hills, Tri-Cities {Echolink, IRLP}
145.410	N7LZM	- neg	123.0	Jump Off Joe Butte, Tri-Cities {Echolink, IRLP}
146.620	WF7S	- neg	123.0	Pasco, WA {Wires-X}
146.640	W7AZ	- neg	100.0	Johnson Butte, Tri-Cities, WA
146.760	W7VPA	- neg	100.0	Rattlesnake Mtn. Tri-Cities
146.800	WF7S	- neg	123.0	Spout Springs, OR
145.490	AL7HO	- neg	103.5	Plymouth, WA
146.960	AL1Q	- neg	74.4	Walla Walla, WA
147.020	AL7HO	+ pos	103.5	Plymouth, WA
147.140	KH6IHB	+ pos	127.3	Walla Walla, WA
147.180	KA7SSB	+ pos	100.0	Prosser, WA
147.220	N7LZM	+ pos	none	Johnson Butte, Tri-Cities, WA
147.280	KD7DDQ	+ pos	103.5	Pikes Peak, Walla Walla, WA {AllStar, Echolink, IRLP}
147.320	N7NEO	+ pos	none	Benton City, Chandler Butte - digital only - {Fusion – Wires-X}
443.950	W7UPS	+ pos	123.0	Tri-Cities, WA
443.450	AL1Q	+ pos	123.0	Hertzen Park, Walla Walla, WA
443.750	AL7HO	+ pos	103.5	Plymouth, WA {Wires-X}
444.250	KL7NA	+ pos	none	Walla Walla, WA
444.875	WB7WHF	+ pos	141.3	Prosser, WA
446.600	KD7KJJ	none	123.0	Kennewick, WA
449.100	W7AZ	- neg	100.0	Rattlesnake Mtn. Tri-Cities

As of 2022-12-22, the above repeater list has not been verified for silent or down repeaters or changes in tone or location.

CLUBS AND REPEATERS

SPOUT SPRINGS REPEATER ASSOCIATION
 TRI-CITIES AMATEUR RADIO CLUB
 YAKIMA AMATEUR RADIO CLUB
 KAMIAK BUTTE AMATEUR REPEATER ASSN.
 W7UPS REPEATER

www.wf7s.net
www.w7az.org
www.w7aq.com
www.kbara.org
www.w7ups.com

AMATEUR RADIO EQUIPMENT MANUFACTURERS AND SUPPLIERS

HAM RADIO OUTLET	www.hamradio.com
DX ENGINEERING	www.dxengineering.com
GIGA PARTS	www.gigaparts.com
RADIODDITY	www.radioddity.com
ICOM AMERICA	www.icomamerica.com
YAESU	www.yaesu.com
KENWOOD RADIO	www.kenwood.com
ALINCO	www.alinco.com
DIAMOND ANTENNAS	www.diamondantenna.net
COMET ANTENNAS	www.natcommgroup.com
MFJ ENTERPRISES	www, mfjenterprises.com

INFORMATION WEBSITES

Everything you wanted to know about Ham Radio www.hamsphere.com

American Radio Relay League (ARRL) www.arrl.org
This is your public voice to the FCC

FEDERAL COMMUNICATIONS COMMISSION (FCC) www.fcc.gov

We recommend you join the ARRL for it's many benefits and
timely magazine "QST". www.arrl.org
Also "CQ" magazine www.cq-amateur-radio.com

Lots of information, equipment reviews, sales items, forums: www.QRZ.com
www.eHam.net

The one book you should have near your radio (actually a requirement - remember?.)
FCC RULES AND REGULATIONS PART 97 (<https://www.arrl.org/part-97-amateur-radio>)

Two recommended book with lots of great information (and when you can't sleep at night):
The ARRL Handbook
(<https://home.arrl.org/action/Store/Product-Details/productId/2003373106>)

The Antenna Book
(<https://home.arrl.org/action/Store/Product-Details/productId/114288>)