What is ham (amateur) radio?

Ham radio is the use of radio waves (electromagnetic radiation) to talk to other people without motivation by profit. The original radio inventors, more than a century ago, experimented with ways to make the air go wibbly-wobbly, and some of us still do that—-more than 700,000 in the United States alone!

We have frequency bands (chunks of spectrum) set aside for our use, both by US domestic law and by UN treaty worldwide. Each country has rules for who gets to use it, but generally you pass a short written exam and then are given a license, including an alphanumeric identifier (callsign) that indicates what country you're licensed in, and which allows people to figure out who you are. In the US, the license costs $35 and is good for ten years.

So like what do you do with it?

Experimentation and play is the name of the game overall; you're required to be communicating with someone, not just broadcasting (so it's different than, say, FM radio), but within that you can do many different things. Some people communicate using ham radio satellites in orbit, some bounce signals off the moon (yes, that works!), some talk to astronauts (most astronauts are hams, and the ISS has a ham radio station onboard!), some communicate using extremely low frequencies that can penetrate the earth's surface, some use extremely high frequencies that bounce off mirrors. Some use digital modes that take minutes to send a tiny amount of data, so they can talk to the world with a milliwatt. Some people travel to exotic locations (usually, rocks in the middle of oceans) to do ham radio. Some people even use it for telemetry, control, and data for remotely-controlled vehicles and model rockets! It is, generally, dorking around at scale. As the philosopher said,

BECAUSE WE'RE GROWN-UPS NOW, AND IT'S OUR TURN TO DECIDE WHAT THAT MEANS.

(https://xkcd.com/150/)

Do you do public service things?

We do! We support marathons and triathlons and public health clinics, assist naked bike parades (those happen!), help communities prepare for natural disasters (as well as unnatural ones), and help get messages out of disaster areas (like after a hurricane) so people can know their loved ones are safe.

Why not just use the Internet for, uh, all of that?

A lot of the Internet you use—in particular, things like WiFi—was invented by ham radio people. (It's true! Look into the system called ALOHAnet.) So "because we invented it," and also "because often we have better options that are more fun." In addition, when the Internet goes down, it's helpful to have other options. Also we do use the Internet for some things, like talking about ham radio, obsessing over antenna design, and looking for memes.

OK, so what are you doing in this park?

"Parks on the Air" (https://docs.pota.app/) tells ham radio people to go to (state / national) parks, wildlife refuges, forests, etc. and do radio there. It's not just in the US; there are parks all over the world, and people participate daily from dozens of countries. "Breathe air," "touch grass," etc. It's quite popular! There are awards!

That's the dumbest thing I've ever heard.

One of the awards has a cute bird on it. Some have pretty plants!

Now you're talking.

It turns out that we all need shiny things on the walls.

So are you checking your email?

No. You can send email over amateur radio, however; round-the-world sailors, in particular, have been using that for decades. We're using laptops because while we can use voice or Morse Code over the air, we can also use digital protocols. They sound a bit like alien communication in movies, and they let us communicate over many thousands of miles while using just a few watts of power.

So you *are* talking to aliens.

We're not. Some people do bounce their signals off the Moon, but that's as far as ham radio gets on the aliens front. Go ask SETI for assistance re: aliens.

So wait. Who are you? (The one who's writing this pamphlet.)

The Narwhal Amateur Radio Society (NARS), dedicated to three purposes:
• To diversify the field and practice of amateur radio and radiofrequency experimentation through education, evangelism, and activism;
• To foster joy, goodwill, understanding, and experiential enlightenment of all people in radio, computer, electronic, and related disciplines; and
• To serve as a stalwart opponent of the use of amateur radio as an accessory to state violence and oppression.
Also, controversially, we don't like Nazis and that's in our bylaws.

That's controversial? Nazis need punching.

We concur.

So, somehow, this excites me. I want to know more. How do I get into ham radio?

I'm delighted you asked! You'll need a license, a radio, and a crew. Here's how to get those:

- **Get a License**: Ham radio in the US requires a license from the Federal Communications Commission (FCC).
  - To **study** for the exam, we recommend that you read the "ARRL Ham Radio License Manual, 5th Edition," which is a great book to learn about ham radio culture as well as how to pass the exam. If you're in a hurry, the "KB6NU No-Nonsense Technician-Class License Study Guide 2022" is a free, great short summary (best for people who already have some electronics knowledge). Note that for either, it's critical that you get the current version, as the questions switch out every four years; get the one that says it's for Technician exams 2022 through 2026.
  - To **practice** for the exam, use https://hamstudy.org/ or https://hamexam.org/. Both are free.
  - To **take** the exam, you can find an in-person session at https://www.arrl.org/find-an-amateur-radio-license-exam-session, or an online session at https://hamstudy.org/sessions.
    - If your ID documents don't say the name you go by anymore: that's just fine! See https://commonlaw.name/fcc.html for how to deal with that when filling out the exam paperwork.
    - You can also use a PO Box as your address, for increased privacy.

- **Get a Radio**: For a first radio, get something cheap that you can learn with using your Technician-class privileges (VHF and UHF). https://baofengtech.com/product/bf-f8hp/ or https://baofengtech.com/product/uv-5x3/ are both pretty good and pretty cheap. (Other sellers on eBay or Amazon may be cheaper, but they have knockoffs that are worse-performing.) You'll probably want a computer programming cable as well: https://baofengtech.com/product/pc-03-programming-cable/ is that, then you can use the open source https://chirp.danplanet.com/ software to program it.

- **Get a Crew**: You learn things in ham radio from other hams, primarily—it's the best way to find what you're interested in doing, whether it's emergency communications, volunteering, building your own radios, or playing with HAARP. Your community may have a ham radio club (Google for it), but you can also join national groups relevant to your interests. We're one (https://nars.narwhal.be), but some others we like include https://prideradio.group/ and https://mastodon.radio/.
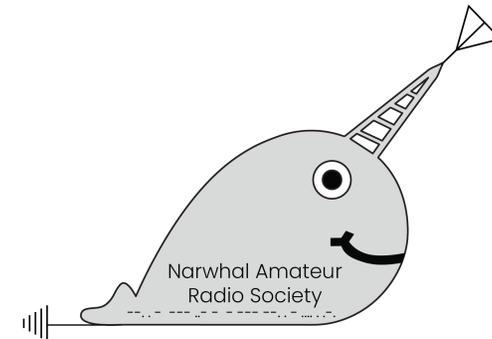
Mostly, have fun. This is a hobby that can take you to many odd places. "We do these things not because they are easy, but because we did not plan well and now we're in the middle of them," after all. See you on the air, and remember to swim together!

WHAT WE NERDS ARE DOING HERE

Or, "Parks on the Air: Well, at least they're out of the house."

A potentially-helpful guide from the

Narwhal Amateur Radio Society
NR7WL

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