STARTER GUIDE

WAYS TO USE YOUR HAM RADIO LICENSE

Your license opens up much more than your local repeater. Here's what hams do on the air, what each activity takes, and whether a Technician can join in, each with a short video. The first three need only a handheld.

Printed from www.cqdeck.com/learn/ways-to-use-your-license. The page always has the latest version.

Talk around town on repeaters

A repeater on a hilltop or tower retransmits your signal, stretching a handheld's range from a few miles to 30 or more. It's where most new hams make their first contacts.

YOU NEED	A 2 meter or 70 centimeter handheld set to the repeater's frequency, offset and tone.
TECHNICIANS	Yes. Every repeater on 2 meters and 70 centimeters is inside your privileges.

TRY IT **Repeater etiquette** cqdeck.com/learn/repeater-etiquette

Rehearse a repeater call cqdeck.com/practice?scenario=quiet-repeater

Check into a net

A net is an on-air meeting at a set time, run by net control. You just answer when it's your turn, which makes it the easiest first transmission there is.

YOU NEED	Your handheld, plus a net's time and repeater. Local clubs and NetFinder list them.
TECHNICIANS	Yes. Most local nets meet on 2 meter and 70 centimeter repeaters.

TRY IT **How nets work** cqdeck.com/learn/how-nets-work

Rehearse a net check-in cqdeck.com/practice?scenario=net-checkin **NetFinder** https://netfinder.radio/

Go radio to radio on simplex

Simplex means talking radio to radio, with no repeater in between. Range depends on height:

a few miles on flat ground, much farther when one station is on a hill.

YOU NEED	Any 2 meter or 70 centimeter radio. The national calling frequency is 146.520 MHz FM.
TECHNICIANS	Yes.

TRY IT **Simplex guide** cqdeck.com/learn/simplex

Rehearse a simplex call cqdeck.com/practice?scenario=simplex-call

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Parks on the Air

In Parks on the Air, operators take radios to parks and make as many contacts as they can. It's one of the most popular activities in ham radio, and you can take part from home.

- Activators go to a park and operate from there. The activation counts once they log at least 10 contacts.
- Hunters stay home and contact the activators. Hunting is how most people start.
- Activators are posted live as spots on pota.app, with the park, frequency and mode. That's how hunters find them.
- The exchange is short: your call sign, a signal report and your state. Then the activator moves on to the next caller.
- Hunters never send logs. The activator uploads theirs, and your contacts show up in your free pota.app account.

YOU NEED	To hunt, whatever radio you have. To activate, a portable radio, an antenna and a park.
TECHNICIANS	Yes: voice on 10 meters (28.300 to 28.500 MHz), 2 meter FM with activators nearby, Morse code on parts of 80, 40 and 15 meters, FT8 on 10 meters, and everything on 6 meters.

TRY IT **How POTA works, on one page** cqdeck.com/infographics/how-pota-works

Parks you can work on Today cqdeck.com/dashboard

Rehearse a park contact cqdeck.com/practice?scenario=park-hunt **pota.app** https://pota.app/

Summits on the Air

Summits on the Air is like Parks on the Air with a climb: operators carry radios up mountains, and each summit is worth points.

- An activation earns the summit's points once the activator makes four contacts from the top.
- Many activators use 2 meter FM from the summit, so hunters with a handheld can often reach them.
- Summit maps and live spots are on SOTLAS and the Summits on the Air website.

YOU NEED To chase, any radio. To activate, light portable gear and good hiking shoes.

TECHNICIANS Yes. 2 meter FM from a summit is a great way to start.

TRY IT **SOTLAS map** https://sotl.as/ **Summits on the Air** https://www.sota.org.uk/

Satellites and the space station

Amateur satellites work like repeaters in orbit. A pass lasts up to about 15 minutes, and while it's overhead you can reach stations hundreds of miles away.

- The easiest are FM satellites like SO-50: you talk on the uplink and listen on the downlink, like a repeater.
- Any 2 meter and 70 centimeter handheld can listen. Making contacts works best with a small handheld directional antenna.
- The International Space Station carries a ham station. Crew contacts are mostly scheduled with schools, but its APRS signals are easy to hear.

YOU NEED A dual-band handheld to listen. For contacts, a handheld directional antenna helps a lot.

TECHNICIANS Yes. The FM satellites use 2 meters and 70 centimeters.

TRY IT **Your first satellite contact, on one page** cqdeck.com/infographics/your-first-satellite-contact

Satellite passes on Today cqdeck.com/dashboard **Morning email with passes** cqdeck.com/alerts

AMSAT satellite status https://www.amsat.org/status/

Talk across the country on 10 meters

10 meters is the one HF band where Technicians can talk by voice. When it's open, usually in daylight, you can reach other states and countries.

- Technicians can use SSB voice from 28.300 to 28.500 MHz, with up to 200 watts.
- Openings depend on the sun. Today on CQDeck estimates whether 10 meters is open for you right now.
- You need an HF radio, not a handheld, and an antenna for 10 meters, which can be fairly small.

YOU NEED	An HF or 10 meter radio and a simple antenna, like a dipole or vertical.
TECHNICIANS	Yes: voice from 28.300 to 28.500 MHz, and Morse code and data from 28.000 to 28.300 MHz.

TRY IT **Bands for your license on Today** cqdeck.com/dashboard

Reading solar numbers cqdeck.com/learn/reading-solar-numbers

FT8 and other digital modes

FT8 is a digital mode run by free software. Your computer sends and decodes short automatic messages, so you can make contacts even when signals are too weak to hear.

- The free WSJT-X software handles the exchange. A contact takes a minute or two.
- You connect the radio to a computer. Many newer radios do it with one USB cable.
- PSKReporter shows where your signal was heard, even when nobody answered.

YOU NEED	An HF radio, a computer, and a cable or interface between them.
TECHNICIANS	Yes, on 10 meters (28.074 MHz) and on 6 meters.

TRY IT **Digital mode software** cqdeck.com/toolbox#digital

PSKReporter map https://pskreporter.info/pskmap.html

APRS: positions and short messages

APRS sends short digital packets on 144.390 MHz: your position, weather readings or brief text messages. They show up on maps like aprs.fi.

YOU NEED A radio with APRS built in, or a phone app paired with a radio and a small interface.

TECHNICIANS Yes, on 2 meters.

TRY IT **aprs.fi map** https://aprs.fi/

Digital voice: DMR, D-STAR and Fusion

Digital voice repeaters are often linked over the internet, so a handheld can reach talkgroups across the state or around the world. DMR is the most common, with the least expensive radios.

YOU NEED A radio for the digital system your local repeaters use, or a hotspot at home. DMR also needs a free DMR ID.

TECHNICIANS Yes, on 2 meters and 70 centimeters.

TRY IT **DMR basics** cqdeck.com/learn/dmr-basics

Listen to DMR talkgroups https://hose.brandmeister.network/

Emergency and public service

Hams help when phones and power fail, and at community events like marathons and parades, where they handle communications for the organizers.

- ARES, the Amateur Radio Emergency Service, trains local hams to support emergency agencies.
- SKYWARN spotters report severe weather to the National Weather Service, often over ham radio. The training is free.
- Many groups use Winlink to send email over radio when the internet is down.

YOU NEED A handheld to start. Training matters more than gear.

TECHNICIANS Yes. Most local emergency and event communication happens on 2 meters and 70 centimeters.

TRY IT **Ham radio for emergencies** cqdeck.com/learn/emergency-communication

ARES https://www.arrl.org/ares **SKYWARN training** https://www.weather.gov/skywarn/

Field Day and contests

Field Day is ham radio's open house. On the fourth full weekend of June, clubs set up stations in parks and public places and operate through the weekend.

- Visitors are welcome, and many clubs run a get-on-the-air station where newcomers can operate with help.
- Contests are quick-fire events with a set exchange. Technicians can join in on 10 meters and in the VHF contests.

YOU NEED Just curiosity. The ARRL's Field Day locator lists sites near you.

TECHNICIANS Yes. Clubs welcome new operators, and experienced hams help at the radio.

TRY IT **Field Day locator** https://www.arrl.org/field-day-locator

Find a club https://www.arrl.org/find-a-club

Fox hunting

In a fox hunt, someone hides a small transmitter and everyone else tracks it down with directional antennas. It's orienteering by radio, and a fun club outing.

YOU NEED A 2 meter handheld and a directional antenna. Many hunters build one from a tape measure.

TECHNICIANS Yes. Most hunts are on 2 meters.

TRY IT **ARRL direction finding** https://www.arrl.org/direction-finding

Sources

Parks on the Air hunter guide https://docs.pota.app/docs/hunter_guide-english.html

Summits on the Air https://www.sota.org.uk/

AMSAT: working amateur satellites https://www.amsat.org/introduction-to-working-amateur-satellites/

ARRL Field Day https://www.arrl.org/field-day

FCC rule 97.301: frequency privileges https://www.ecfr.gov/current/title-47/chapter-I/subchapter-D/part-97/subpart-D/section-97.301