

Microvolt

Monthly newsletter of the Utah Amateur Radio Club

December 2025



Activities and Events



Hams just wanna have fun. Each ham has their own version of what's fun, because beauty is in the eye of the operator. Often, the modern ham finds joy in not just strictly radio, like with contesting or nets, but as it's combined with an event or activity, such as an historical date, an ultra marathon, or the Santa Net as well. These make amateur radio seem a little more relevant, attached to something they might be acquainted with; they make radio appear as a means to an end, not the end itself. So, what kind of activities involving amateur radio do you consider fun?

Cover story	2
Editorial	3
Letters to the editor	4
Club news	5
For your information	6
Spotlight on K7LSH	7
Tech corner	8
Strays	11

Cover – Activities and events

The reason we have activities lies in the root of the word itself: we are an active bunch, admittedly some more active than others. Do we absolutely need activities to keep our interest in ham radio? For many, not really, but they *are* somewhat motivational for a lot of newer amateurs, the ones who haven't been with the craft long enough to experience the full spectrum of what it has to offer.

Some organized activities

There are many great “activities” that are not included in of this discussion, such as club meetings, pot-luck dinners, Morse code practice, and exam administration, even awards, such as [WAS](#), [WAC](#), and [DXCC](#). The kinds of activities and events we're referring to are those whose primary goal or purpose is not radio itself, but uses radio as a means to achieve the goal, and include the following:

- Preparedness Fairs
- EmComm (emergency communication)
- Club, civic, church, and fair presentations
- [Special event stations](#) that highlight an historical milestone or achievement, such as the Apollo moon landing or the Transcontinental Railroad
- Field trips (to a repeater or [WebSDR](#) site) that include an amateur station
- Fox hunting, ARDF (amateur radio direction-finding), and triangulation
- Digital (FT8, mesh, Lora, APRS) exploration
- Weather spotting and reporting
- [POTA](#), [SOTA](#), [JOTA](#), [YOTA](#), [IOTA](#), etc., are reasons for people to build something manageable and get outdoors, and maybe even outside the high-noise environment of the city
- DIY and [homebrew](#) projects, even programming
- [Amateur radio RVing](#)
- Researching and [writing about radio topics](#)
- Parades, celebrations
- Festivals, parties
- Aeronautics (aviation, spacecraft, drones)
- Bike, foot, and road races (ultra-marathons, Baja)
- Ballooning
- [Teaching amateur radio courses](#)

Reasons to stay active

The term “remaining active” has a dual-purpose meaning, in that 1) we often seek reasons to engage



in more radio-related functions by participating in activities that *sustain amateur radio* and 2) we often look for ways to stay (physically, mentally, emotionally) active by using amateur radio as a reason for us to *sustain the activity*. For example, setting up a radio station in an ultra-marathon foot race gives us a reason to provide radio service in a meaningful way, while giving us a chance to be outdoors and enjoy the craft in yet another way.



Social activity

Because ours is a hobby *of* introverts *by* introverts, we often shudder at the *social* word. It's very comfortable and convenient to remain behind closed doors, yet be able to contact the world from an armchair. Still, we've gained an unfortunate reputation for being sedentary because of our propensity for being anti-social, due in some part to the technical nature of our craft. If at all physically possible, get outside (your house, your mental barriers) and operate outside the box. Hams just want to have fun.

Microvolt editorial staff

Editorial – Teaching ham radio

Do you enjoy teaching? If you do, you might also consider ham radio education to be an **activity** of sorts. From early on, you've probably discovered that you find a satisfaction in sharing your expertise or wealth of knowledge with others. You want them to experience the same thrill of learning about your craft that you've felt.

Formal teaching

If you've ever taught a ham radio class, you likely understand the need for preparation, not just knowing what to teach that day, but **how to deliver** those concepts. While the idea of formal teaching might seem like you're simply giving people information, the way you present that information can be anything but simple. To the teacher who's aware of the audience, voice inflection, appearance, body language, even bad breath all contribute to the lesson, either positively or negatively.

Teaching's a big, intimidating responsibility, causing most well-meaning hams to shy away from the task. You're always on the spot, and without hesitation must be ready to answer any seemingly random question that participants might ask. You need to stand up straight, look them in the eye, sound confident, and offer accurate, verifiable facts. Your class members will be judging ham radio by your every word and facial distraction, but especially by your attitude and enthusiasm.

Mentoring and elmering

In a [previous issue](#), we discussed elmering and its importance, even how best to mentor somebody who's curious and has a lot of questions. It's not always easy for a new ham to ask questions, especially the right ones. To offer the best and most helpful answers might sometimes require a bit of patience and understanding on your part. Contrary to popular cliché, there are indeed dumb questions, but probably the more damaging assaults to a discussion are dumb answers.

Avoid giving snarky or smart-alecky answers to questions. If you find a question slightly abrasive, try answering using a little deflection. For example, if somebody asks you why certain kinds of people seem so ill-informed, instead of answering directly, maybe try asking them why they believe others are so well-informed.



Setting an example

Probably the best way you can teach a principle or concept is by example. Being a long-time licensee, you're probably aware of the fact that new hams, especially youth, will imitate everything you do and say, good or bad. This applies to on-air conversations, in-person meetings, and gatherings, like Field Day and other activities.

When you're out and about, announce that you're mobile and monitoring. That helps people feel like there's a friendly voice who might be able to answer a question. Or when you're listening, and a newer ham announces he or she is on the air, go ahead and respond. Strike up a short conversation, which will let them know you care. And when you do, many potential listeners will also pick up on your friendliness, and imitate your behavior.

Teach through writing

Teaching an invisible audience through writing articles, posting on blogs, and commenting on social media is no less valid, viable, and valuable methods of teaching amateur radio than standing in front of a classroom. When you create a post or make a comment on social media, you represent all of amateur radio, believe it or not, like it or not.

People seeking for accurate and helpful information look to you as an experienced leader, and often trust everything you say. Therefore, not only must your information be accurate, but your approach, demeanor, and treatment of others must be kind, humble, and even a little vulnerable. Your hope is that **your readers will trust you**, and you might find that the more willing you are to admit your mistakes and make concessions, the more people will trust you.

Anything to add? Email editor@utaharc.org

Letters to the editor

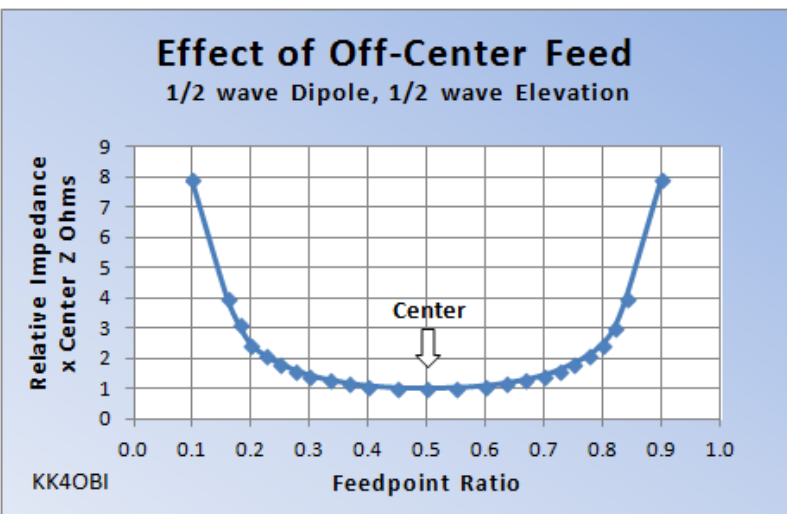
Dear Editor:

I want to make an off-center-fed dipole because it can allegedly support multiple bands with a single wire, but I'm not sure where to place the feed point. I've read conflicting articles and posts about making the ratio between the two radiating element lengths. Some say 1/3 to 2/3, and one even said 1/4 to 3/4. What is the best element length ratio for an OCFD?

Jason in Herriman

Dear Jason:

An OCFD (off-center-fed dipole) is a terrific antenna that has a lot of benefits, one of which you had mentioned, the support for multiple HF bands. The radiating element for a typical dipole, OCFD or otherwise, is a half-wavelength long at its lowest supported frequency. To answer your question, any wire that's a half-wavelength long can be used effectively as an amateur antenna, and can be fed anywhere along that line, the middle (1:1), a third (2:1), a fourth (3:1), or even at the very end ([end-fed half-wave](#)).



Because it's a half-wave radiator (at a particular frequency), its gain, aperture, and efficiency will pretty much be the same no matter where you feed it when mounted the same way, according to [antenna modeling software](#). The property that varies the most between different feed points is the [impedance](#), such that typically the farther it is from the middle, the greater the exhibited impedance for a given frequency. So, your choice of where to install your feed point is not nearly as important as the type of transformer you need to satisfy the feed point impedance there.



Dear Editor:

Is it true that contesting is not legal on WARC bands?

Norm in Hyrum

Dear Norm:

There is no Part 97 rule that prohibits the use of WARC bands (12 meters, 17 meters, and 30 meters) for the purpose of contesting, but most contests have their own voluntary rules that prohibit using WARC bands for the purpose of counting contacts made in connection with their own contests.

Dear Editor:

Can a special event station use repeaters?

Norm in Hyrum

Dear Norm:

A special event station is permitted to use any amateur frequency within the operator's privileges, even those of repeaters, and are often published by the event or station organizer(s). Typically, the repeater owner or trustee must grant repeater use permission for such an activity and its duration.

Dear Editor:

Can a person have more than one ham call sign?

Zach in Riverdale

Dear Zach:

Each person can hold only one US amateur call sign, but hold additional call signs from other countries.

Send your questions to editor@utaharc.org

Club news

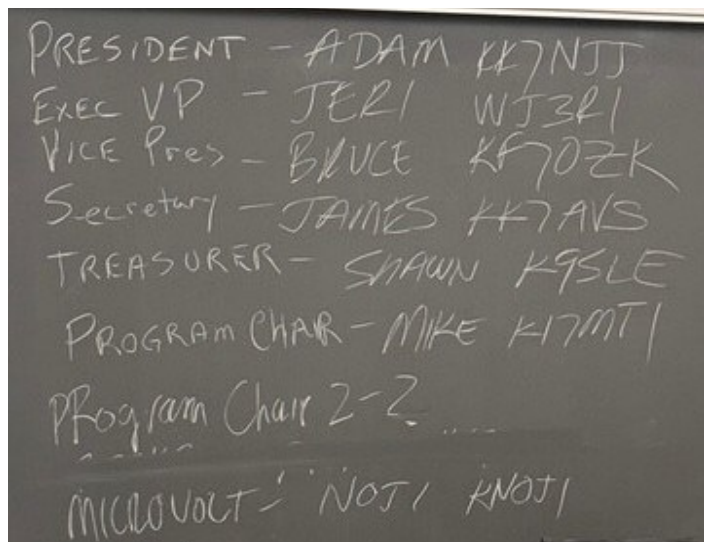
Scott Rosenbush K7HSR returned once again, this time to present an entertaining discussion on tower installation to an overflow crowd, give or take. He explained that there are many hidden costs included



with erecting a ham radio tower, including permits, contractor hiring, and the “marriage” impact. Scott shared some recent photos of an antenna raising at his own QTH. He also warned us of some pitfalls, including installation location misunderstandings, grounding, and safety hazards.



The list of candidates running for UARC Board positions was also listed, now that Marv has announced that he’s stepping down as President and Linda is no longer running for Executive Vice President. The voting for officers, *as well as some changes to the club Bylaws*, will take place at the [Christmas Dinner](#).



You can see [the video presentation here](#). You can also view [past club meeting presentations on our YouTube channel](#).

Annual 76ers Santa Net

It’s time once again to bring your young ones (or old ones!) to the radio and let them speak with Santa. The Annual 76ers Santa Net occurs on two nights, Christmas Adam (December 23) and Christmas Eve (December 24), both at 6:00 pm on the 146.760 repeater. When Santa asks for check-ins, hand the mic to your excited wish-listers if they’re old enough, and let them say your call sign; no need for you to say anything.

UARC 2026 Winter Field Day

Missed Field Day this summer? You can make up for lost time by attending [Winter Field Day](#) with UARC. We plan to participate *from noon through 8 pm Saturday January 24* at the [Utah Cultural Celebration Center](#), 1335 W 3100 S, WVC, and all are invited. We’re looking for two benevolent amateurs to volunteer their RVs for the event, to let us use them to house our stations for the duration.

For your information

Christmas 2025 Dinner

The club Christmas dinner is 6:30 pm Thursday 11 December 2025 at the [Golden Corral, 665 E 7200 S](#) in Midvale. Don't forget your credit card!

Winter Field Day 2026

UARC is planning to participate in Winter Field Day, from noon to 8 pm Saturday 24 January 2026 at the [Utah Cultural Celebration Center, 1335 W 3100 S, WVC](#). To keep things simple, we plan to only run 2 stations, so our exchange will be **W7SP 2M UT**.

License courses

Salt Lake:

General : Tuesdays 7:00 pm to 9:00 pm
147.160+ MHz (127.3 Hz tone)

Provo:

Technician : Saturday, 8:00 am to 1:00 pm
20 Dec, 17 Jan, 18 Feb, 18 Mar

Visit HamStudy.org/sessions to register (free)

Provo Fire Station #2, 2737 N Canyon Rd
Email nv7vham@gmail.com for info

Orem:

Technician : 4 Tuesdays, 6:30 to 8:30 pm
Jan 20, Jan 27, Feb 3, Feb 10

Visit psclass.orem.org to register (\$10)

Orem City EOC, 56 N State St, 2nd Floor
HamStudy.org account required
Email nojiratz@hotmail.com for info

Eagle Mountain:

Technician : 5 Thursdays, 7 to 9 pm
Feb 12, Feb 19, Feb 26, Mar 12, Mar 19

Email ki6oss6365@gmail.com to register (free)

Eagle Mountain City Hall, 1650 Stagecoach Run

Exam sessions

Salt Lake County:

- Email Garth Wiscombe W7PS w7ps@arrl.net
Oct 27, Nov 24, Jan 26, Feb 24, Mar 30
- Email Rick Morrison W7RIK w7rik@arrl.net
04 Feb, 6:00 pm
[Utah Military Academy](#)
5120 S 1050 W, Riverdale



Utah County:

- Sat 20 Dec 2:30 pm : **Provo** : [signup](#)
- Sat 17 Jan 2:30 pm : **Provo** : [signup](#)
- Wed 21 Jan 7:00 pm : **Provo** : [signup](#)
- Sat 21 Mar 10:00 am : **Eagle Mtn** : [signup](#)
- Wed 18 Feb 7:00 pm : **Provo** : [signup](#)

Club repeaters

Farnsworth Peak : 146.620– MHz (no tone)

Scott Hill : 146.620– MHz (no tone)

Lake Mountain : 146.760– MHz (no tone)

SDRs and beacons

Northern Utah WebSDR : sdrutah.org

KK7AVS SDR : k7xrd.club

N7RIX SDR : sdr.n7rix.com

K7JL beacon 28.2493 MHz

HF remote and club transceiver stations

If you'd like to learn how to get started using the remote stations, visit the [HF Remotes link](#) on [the club website](#):

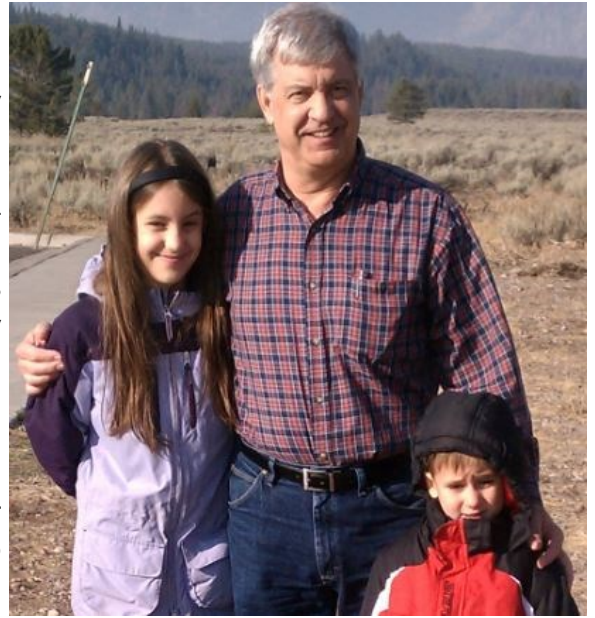
<https://user.xmission.com/~uarc/HFRemote.html>

Attention!

We need *current* club members to vote on proposed changes to the club Bylaws. You can read the [current club Bylaws here](#) and the [proposed club Bylaws here](#). You may only cast your vote for or against them *in person* at the upcoming **Christmas Dinner 6:30 pm 11 December 2025**.

Spotlight – Lynn Hancock K7LSH

Growing up in Idaho Falls I was fascinated by science, especially physics and electronics. From the neighbors I collected broken radios, TVs, and motors to dismantle and use in various projects. I enjoyed building "cat whisker" crystal and single-tube regenerative radios to listen to local as well as foreign stations like Radio Moscow. Science fairs were fun; once I even won a Heathkit CB transceiver and got my first taste of electronic kit building. My first job after receiving my graduate degree in electrical engineering was with Bell Labs in New Jersey. I joined the company's amateur radio club and earned my Novice License in the late 70s but was too busy raising a young family to do anything with it. It wasn't until we moved to Utah and I became involved with our church's emergency preparedness program that I got back into ham radio. I passed the Technician exam one night and both the General and Extra Class exams a month later.



A few years ago my daughter Liisa, KG7KYO earned her technician ticket. During COVID my grandson Nathan, KJ7ZOG, passed his technician exam over the internet.

I've had some interesting experiences with ham radio: while backpacking in the Hells Canyon Wilderness Area in Idaho, I used a home-brew 3-element "arrow shaft" Yagi to bounce a 2-meter signal off a mountain across a lake to hit a repeater in Joseph, Oregon. Using that repeater's EchoLink connection I checked in to the weekly 76ers net in Utah County. On another occasion I made an SSB contact using 100 watts and a 10-meter dipole mounted on our roof to a station 7650 miles away in Australia. It blew me away that a signal that weak could travel that far!

I'm interested in making QRP, SOTA, and POTA contacts using different kinds of home-brew antennas. To increase my ability to make contacts, I'm working to improve my CW skills. I also like to build different electronic projects in general and ham radio projects in particular. My modest "shack" consists of both radios and



electronic development and test equipment, including an Icom IC-7200 HF transceiver, Kenwood TM-281 VHF transceiver, Baofeng BF-F8HP HT, refurbished Heathkit SA 2060 manual antenna tuner, MFJ-259 SWR analyzer, 2-channel O-scope, Siglent Signal/Arbitrary waveform generator, NanoVNA, ZS406 TinySA, various power supplies, and a whole bunch of "cool" electronic parts and modules I've sneaked into the house over the years under cover of darkness.

Because we have 7 grandchildren in Wisconsin and 5 in Kentucky, we spend a lot of time on the road to visit them so my next investment is in a mobile rig to help pass the time as we travel. I also enjoy backpacking in the wilderness areas in Utah, Idaho, and Wyoming, and am working on building some lightweight QRP units to experiment with on these trips. If you hear a faint message requesting a helicopter extraction for an over-the-hill codger out of some remote area, it'll probably be me.

Lynn is a member of UARC, UVARC, and the Utah VHF Society.

Tech corner – Horizontal loop antenna

One of the drawbacks of a non-directional antenna is its knack of receiving noise from all directions. But a highly directional antenna must be rotated to direct or pick up signals effectively enough for you to operate the distant station. There is no magic antenna, but if you can find one that seems to both transmit your signal well and receive many stations with a low noise level, a horizontal loop might just be your next discovery.

Building a loop antenna is fairly easy, because it only has two parts, the wire element and a 4:1 current balun (the wire element is the balanced part, while the coax is the unbalanced part.) You can build [your own 4:1 current balun](#), but I'm listing a commercially sold one by Balun Designs (I used the 4115et) as a quick alternative. Simply connect the wire in a loop to both sides of the balun, attach the coax, and hoist away. Well, almost that simple. The antenna should occupy as much area as possible, so a square formation might be ideal, but that's a lot of real estate.

To take advantage of his experience, I stole some tips for this antenna from a good friend, Kevin Bowen K7SW [and his video](#). He suggests using long poles to hoist each corner of the antenna into place.

Parts list

290 feet [18 AWG stranded wire](#)

Four [dogbone insulators](#)

One [Alpha-Delta ATT3G50U arrester](#)

Two [14-8 crimp sleeves](#)

One [ground clamp](#)

One [30-foot RG-8X coax with PL-259](#)

One [Balun Designs 4115 4:1 current balun](#)

Four bundles [100-foot paracord 550](#)

One [½" 8-foot ground rod](#)

Four [18-inch stakes with holes](#)

One [2" corner brace](#)

Two [¼" 18 AWG ring terminals](#)

Construction

Thread the wire through one end in each of the four dogbone insulators. Thread one end of the wire through a crimp sleeve, then through an eyebolt on the side of the balun, then through the same crimp sleeve from the opposite direction. Crimp the sleeve. Strip the end of the crimped wire, and solder a ring terminal on it. Secure the ring terminal onto the eyebolt.

Strip the other end of the wire and clamp the bared end onto the balun with the unused balun side eyebolt, so that you can change the length of the wire as you tune it. Raise the entire antenna about five feet off the ground so you can work on it and tune it. Yes, that's easier said than done, but do your best. Tie paracord to the unused end of each dogbone insulator.

Attach an antenna analyzer to the balun by a short (3-foot) coax, and measure the SWR for the 40-meter band, to start. The response might appear resonant (the dip location) at a frequency lower than the amateur 40-meter band (left photo). If so, shorten the wire a little (a foot or so at a time) and re-measure. Your goal is to have the dip appear within the amateur band, or at least have the entire SWR bandwidth (2.0:1) within the 40-meter band (right photo).



Horizontal loop antenna, continued

Due primarily to velocity factor, the full-wave horizontal loop antenna ended up at between 280 feet and 275 feet long for me, making a 70 foot x 70 foot square. You can create a 40-meter version by simply using 138 feet to 140 feet of wire, especially if you don't have enough area on your property (35 feet x 35 feet square) to accommodate the entire loop.

Even though my own wire ended up being ideal right at 278 feet 3 inches, I don't insist that you cut yours exactly the same length, because your circumstances might differ. Your wire height above ground will be different from mine, your soil conductivity will be slightly different from mine, your surroundings (vehicles, ductwork, gutters, etc.) will be different from mine, all affecting SWR and feed point impedance differently. Connect the coax from your transceiver to the balun SO-239 connector, and you're ready to raise the antenna.



Grounding

If you plan to install your HF horizontal loop antenna permanently or plan to install it during a potential thunderstorm temporarily, you'll want to ground it for lightning safety. Drive the ground rod into the Earth below where the balun is mounted. If this is a temporary installation, just cut about five feet off the ground rod from the non-pointed end, then drive the pointed end of the remaining 3-foot section into the Earth.

Attach the arrester to the corner brace, attach the ground clamp to the ground rod, then attach the corner brace to the ground clamp. You might need to do some drilling to get the bolts to fit through the corner brace. Connect the 30-foot coax between the balun SO-239 connector and one end of the arrester. The coax from your transceiver will connect to the other end of the arrester.



Installation and testing

Locate a place away from power lines where you can raise the loop antenna about 25 or more feet. Installing it up in trees is a good goal if you can raise each corner that high. Secure each corner by tying the paracord to an 18" stake. It's ok to mount the loop around your house, but do your best to keep the area within the

Horizontal loop antenna, continued

loop as free of conductive objects as possible. Typically, the higher you raise your antenna, the farther it will be from your house.

Test the antenna with your analyzer again, and bring it down and re-tune your wire, as needed. Once you get the SWR bandwidths within the bands of interest, you're ready to start using your antenna. Because one amateur HF band is often a harmonic of another, if the antenna works for one band, it'll likely work on another. Keep in mind that a dummy load exhibits perfect SWR across many bands, but doesn't perform very well, so a perfect SWR on your antenna is only a starting point for operating effectiveness.

The real test comes when you get on the air and use your antenna to contact operators in another state, then another country, then another continent. You'll likely find that the noise level on HF while using the horizontal loop is down 6 dB, 12 dB, or more. Use the WebSDR to listen to difficult-to-copy signals and to watch how it receives your own signals.



Summary

A full-wave horizontal loop antenna is nothing more than a long wire that connects both balanced ends of a 4:1 current balun. The loop is very quiet because of its radial directivity, and so has some gain, therefore rejecting some of the noise otherwise received by an end-fed or dipole antenna. Although simple in concept, it can be difficult to install because of its full-wavelength wire, requiring both mounting area and height to work effectively.

Noji Ratzlaff, KNOJI (kn0ji@arrl.net)

Strays – Special event stations

One day, while dialing around on HF, you might have encountered a CQ from somebody announcing the [Indianapolis Motor Speedway](#) or [Route 66](#) or even [USS Iowa](#). After listening to the pileups and the many operators eager to make contact with them, you might have wondered what they were and what's so attractive about making contacts with them.

An SES (Special Event Station) is a temporary operating station that commemorates a particular event of historical importance or general interest, or celebrates a unique landmark. The purpose of such a station is to draw attention to the event or bring awareness to a cause. Participants contact these stations for a fun and unique operating opportunity, and are often rewarded with a special commemorative QSL card. The events can be local, statewide, national, global, or even universal in invitation scope.



How to participate

Contacting in a Special Event Station is fairly easy, but often requires you to hold a General Class amateur license, and have an HF transceiver available. Most SES stations set up on HF (often 20 meters and 40 meters) for world-wide coverage, to reach as many operators as possible. Most SES stations originate in the US, allowing most Americans to contact them using modest antennas and transceivers operating at 100 watts or less.

Many of them have websites listing operating times and frequencies, plus rules on how to obtain a commemorative QSL card, if they distribute one. Listen for them at the appropriate time and wait for the calling station to say *CQ* or *QRZ* or ask for check-ins. Throw out your call sign, and once they acknowledge



you, exchange contact (name, call sign, location) info with the operator, and you'll be in their log. It's often wise to listen how others exchange with the SES, to help you know how to communicate with them.

How to create an SES of your own

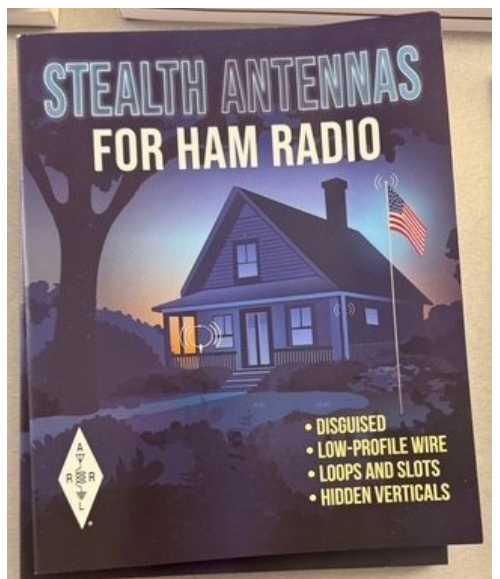
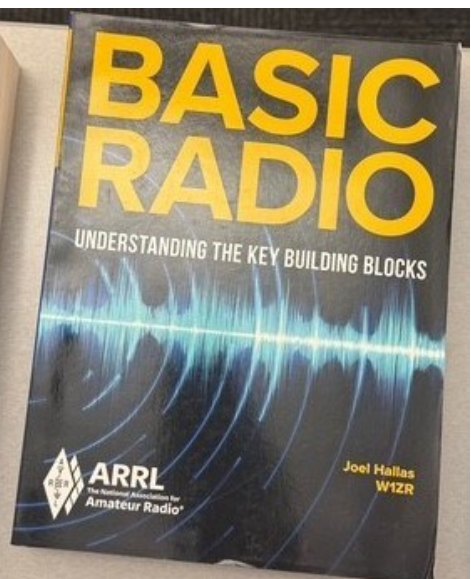
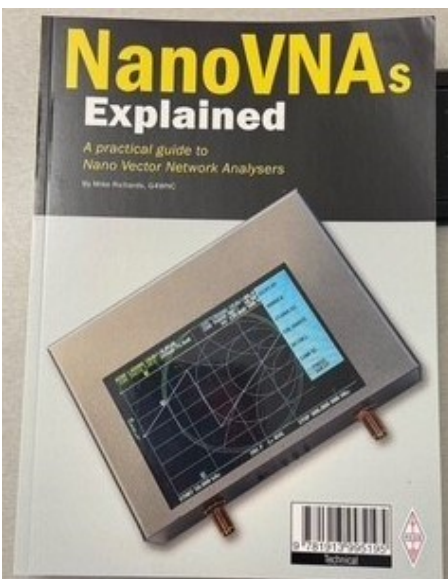
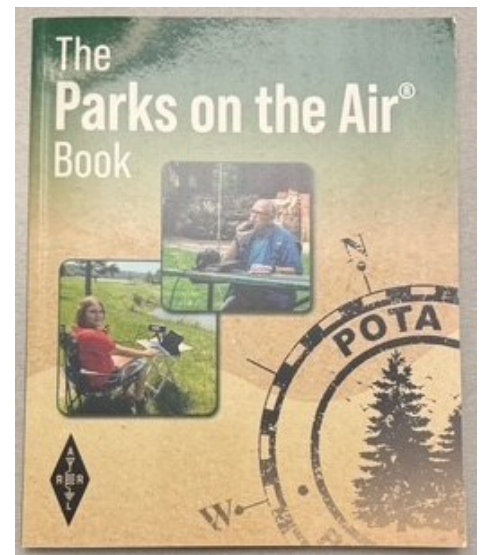
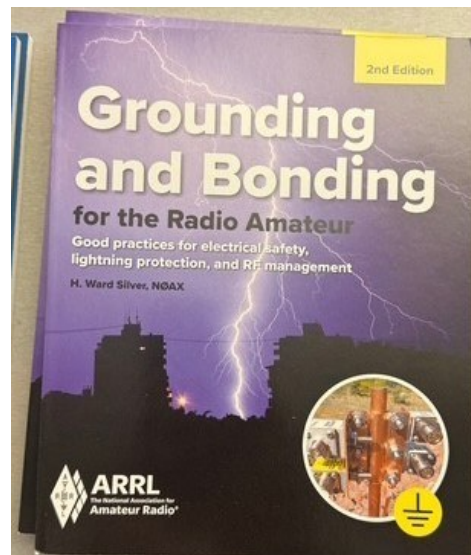
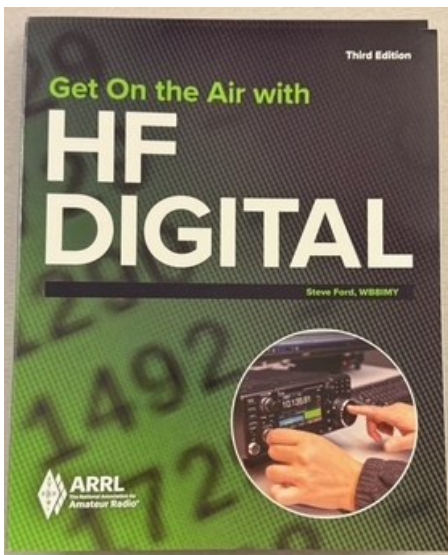
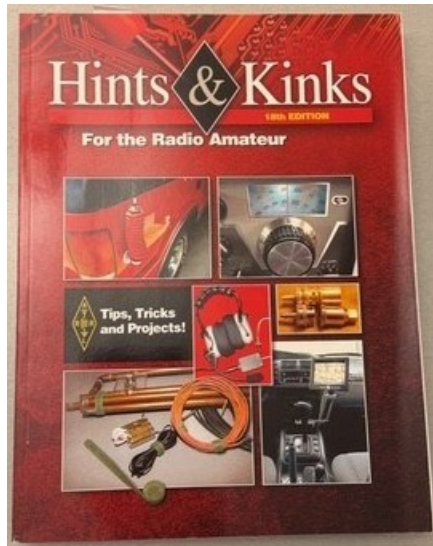
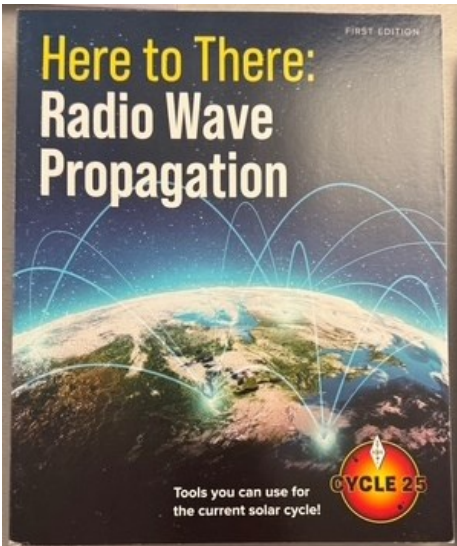
As a licensed operator, you are fully empowered to establish an SES of your own. Unlike during a contest, an SES can operate on any amateur band, even a repeater, provided the repeater owner or trustee grants permission for such an operation. If you anticipate a large enough popular interest, or possible donations, you might consider [setting up a non-profit organization](#) to handle its logistics, such as a website, operating equipment, station location, and postal mailing of QSL cards.

Many American SES stations use a 1x1 call sign for its operating purposes, which [you can apply for](#). During operation, you can announce its call sign instead of your own, provided [you announce your own once per hour](#) (Part 97.119.d) You can read more about Special Event Stations on [ARRL](#) and [OnAllBands](#).



Books available from the Bookseller

This a sampling of the many books that UARC has for sale. Here's a [page with a more general listing](#). If you're interested in purchasing any of them, please contact Rick Asper at bookseller@utaharc.org



Utah Digital Communications Conference

February 28th, 2026 - Sandy,
Utah

According to [their website](#), the 2026 *Utah Digital Communications Conference* will be held Saturday 28 February 2026 at [Salt Lake Community College](#) (Miller Campus), 9750 S 300 W in Sandy.

The conference will unite enthusiasts from the realm of amateur radio and DIY making, highlighting the continuous evolution of amateur radio through the integration of modern technology.

At this time, they're asking for presenter applications. [Click here to propose a presentation.](#)

The general schedule

- 7:30 am to 8:00 am : Check-in
- 8:00 am to 11:35 am : General session
- 11:35 am to 1:00 pm : Lunch (on your own)
- 1:00 pm to 4:50 pm : Breakout sessions
- 5:00 pm to 5:50 pm : Utah VHF Society business meeting

For more information

- Email utahdcc@gmail.com
- Visit [their Facebook group](#)
- Call 801-641-8162

UARC 2025 Board

President: [Marvin Match](#), KA7TPH
Exec. Vice President: [Linda Reeder](#), N7HVF
Vice President: [Bruce Fereday](#), KF7OZK
Secretary: [James Bennett](#), KK7AVS
Treasurer: [Shawn Evans](#), K9SLE
Microvolt Editor: [Noji Ratzlaff](#), KNØJI
Asst. *Microvolt* Editor: [Ricky Asper](#), AC7RA
Program Chair 1: [Mike McAinsh](#), K17MTI
Program Chair 2: [Jeri Brummett](#), WJ3RI
Immediate Past President: [Morris Farmer](#), AD7SR/SK

For-late breaking news listen to the UARC Information Net, Sundays at 8:30 pm on 146.620– or visit the [announcement page](#).

We are grateful to the management of our internet service provider XMission, for the donation of our web service. For account information go to <https://xmission.com/> or call 801-539-0852

EIN : 99-0407768

Utah Business Registration : 575790-0140

Microvolt is the official publication of the Utah Amateur Radio Club, Inc. (UARC), 3815 S 1915 E, Salt Lake City, UT 84106, and is published monthly. Copying is permitted with proper credits to *Microvolt*, UARC, and authors. Online repository located at <https://user.xmission.com/~uarc/Microvolt>

We encourage you to submit original pictures (highest resolution), articles, software and hardware descriptions, appropriate humor, and responses to editorials. Email the content, pictures attached, to the editor at editor@utaharc.org by the 20th just prior to the target month.

The **Utah Amateur Radio Club** was organized under its present name in 1927, although its beginnings may date back as early as 1909. In 1928, it became affiliated with the [American Radio Relay League](#) (club #1602) and is a 501(c)(3) non-profit organization. It holds a club station license with the call sign W7SP, a memorial to Leonard “Zim” Zimmerman, amateur radio pioneer in the Salt Lake City area.

The club meets each month except July and August. The meetings are usually held on the second Thursday of the month at 7:30 PM in the University of Utah's [Warnock Engineering Building](#), room 2230.

Club membership is open to anybody interested in amateur radio; a current license is not required. Dues are \$20 per year. Send dues to club secretary James Bennett, 4960 W 5400 S, Kearns, Utah 84118. Email address changes to kk7avs@gmail.com

Tax-deductible monetary contributions are gladly accepted. Send directly to club treasurer Shawn Evans, 1338 S Foothill Dr, #265, Salt Lake City, Utah 84108-2321. For in-kind contributions, please contact uarc@xmission.com to make arrangements.

UARC maintains the 146.620– and 146.760– repeaters, which are administered by the [UARC Repeater Committee](#). Direct comments and questions to any committee member. The 146.760– repeater is on IRLP node 3352.

Call the **UARC Ham Hotline** at 801-583-3002 for amateur radio information, including club, testing, meeting, and membership information. Leave a message, and we'll make an effort to return your call.

