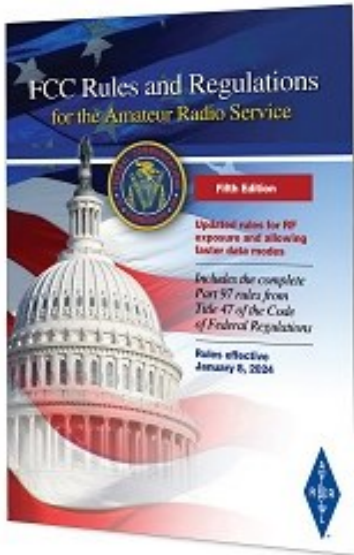


Microvolt

Monthly newsletter of the Utah Amateur Radio Club

January 2026



Displaying title 47, up to date as of 10/28/2025. Title 47 was last amended 10/27/2025. [view historical versions](#)

Enter a search term or CFR reference (eg. fishing or 1 CFR 1.1)

Title 47 / Chapter I / Subchapter D / Part 97 [Previous](#) / [Next](#) / [Top](#)

Code of Federal Regulations

A point in time eCFR system



11 Title 47

ECFR CONTENT



Table of Contents



Details



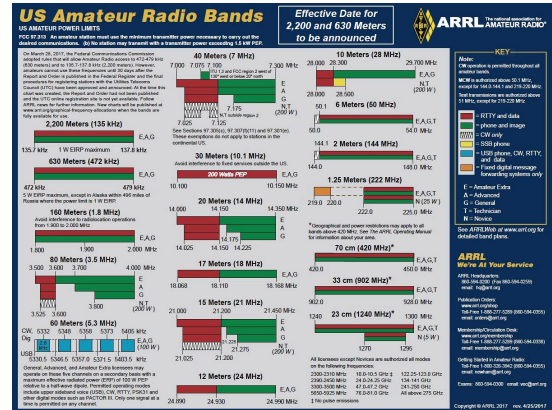
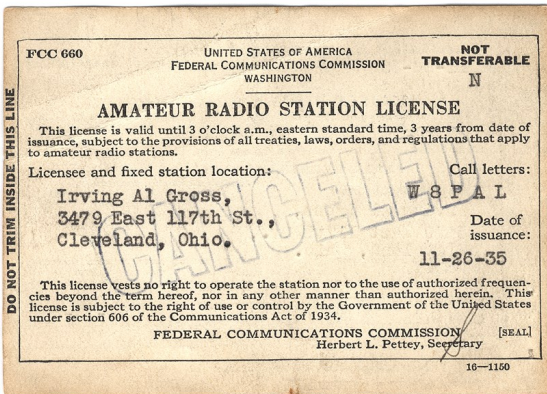
Print/PDF

View table of contents for this page.

PART 97—AMATEUR RADIO SERVICE

Authority: 47 U.S.C. 151-155, 301-609, unless otherwise noted.

Them's the Rules



Cover – Following the rules

The rules that govern amateur radio are found in CFR (Code of Federal Regulations) [Title 47](#) (Telecommunication) [Chapter I](#) (Federal Communications Commission) [Subchapter D](#) (Special Radio Services) [Part 97](#) (Amateur Radio Service). As licensed amateurs, we are bound by these rules when we operate on amateur radio frequencies. They outline station operation standards, frequency privileges, signal power output limitations, emergency communication, and examination administration.

If we don't follow the rules, will the ham police come looking for us? Back in June 2024 we discussed the [Best Practices](#) of amateur radio. Although they aren't the same, obeying the rules most definitely fits within amateur radio best practices.

Ours is a *self-policing service*, so that we largely govern ourselves, and are not going to be accosted by any sort of enforcement agency for minor or isolated violations. Major infractions are answerable to the FCC, but no watchdog group is actively scanning the airwaves for violators, so they depend on you. When you see or hear of *serious rules violations* (such as death threats, emergency communication interference, deliberate public safety frequency use by non-public safety operator), it's up to you to [contact the FCC](#) and inform them of the offense. ***Of course, call 911 first if you hear a death threat!***

When you see or hear of *minor offenses* (no timely call sign announcement, temporary accidental illegal transmission, music or singing, swearing), your jobs are to 1) **NOT** publicly inform the operator about the violation over the radio, 2) **NOT** take the violation personally, and 3) be kind, understanding, and **overlook the mistake**. If you're unsure whether an offense is minor, inform (text, email, PM) a more experienced amateur in private and let them handle it, then let it go.

We keep mentioning *the rules*, but are they rules, or are they laws? Technically, only Congress has the ability to create laws. Still, they have delegated the ability to establish local laws to states, and department regulations to the respective agencies. The FCC, FAA, and other such federal agencies possess the ability to establish rules that are enforceable by fines and incarceration. So, whether we refer to the



ordinances as laws or rules, they carry the same obligation of compliance, supported by appropriate privileges for obedience and consequences for violations.

The reason we have rules is to protect us and to protect the interests of those in other services. Our Part 97 rules protect us by ensuring that our slice of the spectrum is free from interference by unwanted neighbors. That being said, we do share parts of our bands with a few services by relegating amateurs as a secondary service on them, such as radiolocation on the 160-meter band. Our rules also help protect operators of other services from intrusion by amateur operators, which can likewise dilute the integrity of their services.



And what about the license-free services like CB and FRS...do they need to follow rules too? Yes, and their rules are much more strict, in that they must only transmit using "certificated" or certified (formerly "type-accepted") equipment, they cannot transmit on certificated

equipment that has been modified, and their transmissions are confined to channelized frequencies. So, no radio service, not even military, is exempt from following rules.

Our amateur radio rules permit us a unique amount of freedom to modify equipment, experiment, and explore innovative means of communication within our privileges (frequencies, power levels, bandwidths, and locations), much more so than that of many other radio services. This latitude and freedom is among the largest reasons our service must be enjoyed by licensing our operators.

Microvolt editorial staff

Editorial – Rule, law, or tradition

Just like with fishing, hunting, practicing medicine, running a business, piloting an aircraft, or operating a motor vehicle, amateur radio operation requires a license. Similarly, not only do they all have *rules*, laws, and *regulations*, but also *traditions*, customs, courtesies, and gentleman's agreements. While some hard-fast rules are pretty clear, many enthusiasts are often confused about which "rule" is a law and which is a *courtesy* or tradition.

The CFR 47 Part 97 code is the rule of law by which we amateurs operate. Even though most licensed amateurs want to follow the rules, not everybody realizes which "rules" are actually **Part 97 laws** and which are not. For example, the requirement to announce your call sign every ten minutes is a rule of law (Part 97.119.a), while announcing your call sign at the start of a transmission is an optional and traditional courtesy.

The ARRL (American Radio Relay League) is a non-profit organization that often makes recommendations to the FCC regarding rules, but cannot enact the rules themselves. Still, in general we amateurs respect their word as orders to be followed. For example, the ARRL suggests that voice transmissions on 40 meters, 80 meters, and 160 meters use LSB (lower sideband), so we follow that *gentleman's agreement* as though it was law, but it isn't. So, if a licensed ham wanted to transmit using USB on 80 meters, it's not illegal to do so.

Likewise, band plans, like those **instituted by ARRL** and local sections are not law, but are agreements made by all of us to support a program of interference avoidance. Compliance with the **Utah Band Plan**, for example, helps us play nicely with each other. Still, neither band plan is a law, and so is not enforceable by public safety. Gentleman's agreements help reduce interference and allow us all to use the spectrum more effectively in a non-compulsory way.

So, if we licensed amateurs are obligated to follow the rule of law, how can we determine which rule is a law and which is a tradition? Honestly, the only way to know which item is a law is by studying the Part 97 contents. Here's an abbreviated list of actual Part 97 rules / laws:

- You must transmit your own call sign once per hour while operating at Field Day in behalf of a club (97.119.d)



- You must not interfere with another radio transmission (97.101.d)
- Music is prohibited from transmission on amateur frequencies (97.113.a.4)
- Antennas used for the 2200-meter and 630-meter bands must not exceed 60 meters in height (97.15.c)
- No amateur radio operator owns a frequency (97.101.b)
- If an email sent by the FCC to your email address bounces, it can result in revocation or suspension of your license (97.23)
- You may use CW on any frequency for which you have privileges, even those designated for voice or data (97.305.a)

Here's an abbreviated list of good practices that are traditions, courtesies, or gentleman's agreements, but still not regulations:

- You should not answer the call when somebody in your own country calls "CQ DX"
- Avoid doing CW on the Technician segment of the 10-meter band
- You should always say your full call sign, never a partial call sign
- Avoid on-the-air discussions of sensitive topics such as politics and religion
- It's poor practice to call CQ on a repeater
- Do not use the output frequency of a nearby repeater for simplex operation

Hopefully nothing on either list is surprising, and if it is, we hope it's educational. So, before you report a supposed violation, you should probably be aware whether the rule being violated is actually a law.

Anything to add? Email editor@utaharc.org

Letters to the editor

Dear Editor:

I have been studying to become a ham radio operator, and things were going well until last week. Some of the questions ask to solve some math problems, and that has me shaking in my boots. You see, I have math anxiety, which essentially renders me unable to perform the calculation when I see or hear of a math problem, so I have two questions. How much math is on the Technician test, and how much math is required on a daily basis by ham operators? If I need to do many calculations going forward, I might need to look for a different hobby.

Mark in West Valley City

Dear Mark:

First, the average ham radio operator is required to perform very few, if any calculations for radio purposes. In fact, most find that they can operate for years before needing to calculate anything related to ham radio. Then again, licensed individuals can choose to immerse themselves in as much math as their hearts desire, one of the beauties of our craft. Second, you can pass the Technician exam by simply skipping all the math questions (just guess at the answer), but you should probably do well on the remaining questions to compensate. Many people use an online tool, such as [HamStudy](#), and upon encountering a math or other question that seems difficult, simply memorize the answer.

Dear Editor:

I apologize in advance, but I'm a little miffed. I recently passed the Extra exam, and suddenly I got issued a new call sign, although I hadn't elected for a new one. I love my old call sign, and in fact got it as a vanity call because it belonged to my grandfather, but now it's gone. I suppose I could ask for it back as a vanity call again, but that means operating under a call I don't identify with until that gets approved. Anyway, my question is this: why was I issued a new call sign without my approval?

Tom in South Salt Lake

Dear Tom:

I'm sorry you experienced a removal of your call sign without your authorization. Passing an upgrade ex-



amination does not automatically trigger a new call sign unless the applicant selects a new one based on the systematic sequential system on Form 605 [Schedule D](#), question (1). I do have good news, which might be of little comfort. The FCC has a policy of holding your former call sign in reserve for two years, just in case an accident occurs, like you had mentioned, or if the operator simply changes his mind and requests the former call sign back. To help save others from going through your same heart ache, you should probably contact the VE (volunteer examiner) team who examined you, and let them know what happened, in case their system inadvertently selected the request for a new call sign in your behalf upon upgrading.

Dear Editor:

Do steel guy wires provide adequate lightning protection for an antenna mast if they're staked into the ground?

Eric in Woods Cross

Dear Eric:

On one hand, steel guy wires for an antenna mast can provide superior strength and terrific lightning protection if they're staked into the ground by sufficiently long conductors, like a long piece of rebar. On the other hand, [steel guy wires can act like unintended parasitic elements](#) of your antenna, and so ideally should be installed in non-resonant lengths of the target transmitting frequency. Probably the best way to guy a metal amateur radio mast is to use [Mastrant](#) or similar non-conductive guy rope, then bond your mast to a good grounding system.

Send your questions to editor@utaharc.org

Club news

We had a terrific time at the [Midvale Golden Corral](#) for our first-ever general (all members invited) UARC Christmas Dinner, at which 32 showed up.



But it wasn't strictly food and fun, as we held our annual elections and passed [a new set of bylaws](#) there as well. Because of that, we bid a fond farewell to Marv Match KA7TPH, our President, who had to



relinquish the throne for health reasons. We now welcome our President-elect, Adam Stribling KK7NJJ to the Board of Directors. We also welcome Daland Speirs KC7LNR as Program Chair #2.



See page 8 for more photos. Our leadership is always listed on the last page of each *Microvolt* issue.

BTW, you can view past many club meeting presentations on [our YouTube channel](#).

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 10 am to 8 pm Saturday January 24** at the [Utah Cultural Celebration Center](#), 1355 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.

UARC 2026 Spring Potluck

You and your family are invited to a potluck dinner 6:30 pm Thursday 12 March 2026 at the Salt Lake County Facilities Cafeteria, 2001 S State St, room S1-100. Details are posted [on our website](#).

For your information

Winter Field Day 2026

UARC is planning to participate in Winter Field Day, from 10 am to 8 pm Saturday 24 January 2026 at the [Utah Cultural Celebration Center](#), 1355 W 3100 S, WVC. To keep things simple, we plan to only run 2 stations, so our exchange will be **W7SP 2M UT**.

UARC Spring 2026 Potluck

You and your family are invited to a potluck dinner 6:30 pm Thursday 12 March 2025. at [the Salt Lake County Facilities Cafeteria](#), 2001 S State St, room S1-100. Details are posted on our website. We'll post a signup sheet soon.

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
17 Jan, 21 Feb, 21 Mar, 18 Apr, 16 May
Visit [HamStudy.org/sessions](#) to register (free)
Provo Fire Station #2, 2737 N Canyon Rd
Email nv7vham@gmail.com for info

Orem:

General : 4 Tuesdays, 6:00 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
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 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>

How you can help!

Email uarc@xmission.com to reach the club leadership. Email editor@utaharc.org to add content.

Spotlight – Amanda Shaw KK7TOF



Amanda Shaw KK7TOF is a new member of UARC, having joined just as I was interviewing her. She's been exposed to amateur radio all of her life. Her father George Hughes N7BMG has his Extra Class license and is very active. He wanted all of his children to get their amateur radio licenses, and insisted that they get their ham licenses before they got their drivers licenses. Amanda's parents unfortunately divorced when she was 16, and her mother didn't enforce on the same rule, so Amanda was able to dodge that bullet. She also had other interests at that time, but the reason Amanda eventually wanted to get her amateur radio license is because her father now lives in Kentucky and she wants to talk with him via ham radio.

Last year Amanda took a Technician Course from James Bennett KK7AVS. At the end of the class in May Amanda wanted to take the test, but she couldn't find an in-person exam session available at the time. So, she took the test remotely. The people who were giving her the test were in Washington state, where Stephen Hutchings WM7X administered the exam to her while 3 other hams were watching as VEs (volunteer examiners). They had to see the room she was in to make sure she was the only one in there.

Amanda took her test in the restroom, because it is the smallest room in the house, it was quiet, and there were no interruptions. The questions were shown on the screen, then she clicked the answer that she thought was correct. Amanda was so happy she passed the test. She's now working hard on getting her General Class license so she can talk to her dad over the radio. She wanted to take James' General Course On Tuesday nights, but she has commitments with the Young Women in her church. I told her that she could talk with her dad right now on EchoLink, and she got excited about that.

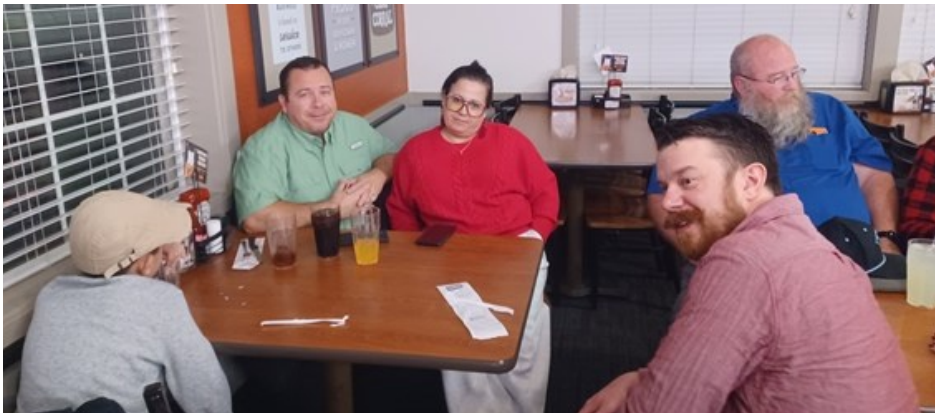
Amanda bought a Baofeng radio and enjoys talking on it. Her Stake President wants member to get involved with radio communication for emergencies. Amanda really wants to get involved with emergency communication using amateur radio, but says there is still so much to learn.

Amanda and her husband Jeff have three children, two girls and a boy. She's the one and only licensed family member. The others aren't interested but supportive. Amanda also has a part-time job at [This Is the Place Monument](#). These things keep Amanda busy but she's going to do her best to get more active in amateur radio.

Amanda enjoys hiking and would like to get more involved in birding. *Amanda, we wish you the best in all of your endeavors. Good luck on getting that General Class amateur radio class license!*

73, Linda Reeder N7HVF

2025 UARC Christmas Dinner



2025 UARC Christmas Dinner



2025 UARC Christmas Dinner



Strays – Rules enforcement

If the amateur radio rules we follow are listed in the US government [Code of Federal Regulations](#), does that mean they are also regarded as *laws*? As was mentioned in [this month's Cover Story](#), only Congress can technically enact laws, but that's a moot point, since failure to adhere to regulations put forth by the FCC (the "Commission") can result in consequences similar to disobedience to federal laws.

Ok, so if the FCC rules demand our compliance, what happens when we don't comply? Can they actually enforce those rules? It turns out that they are empowered to do just that. One major problem facing enforcement, however, is the bandwidth (enough manpower and time) required to sufficiently enforce all the FCC rules. With over 800,000 licensed amateurs in the US, even with 20% activity, that's a lot of QSOs to monitor for violations, and today's FCC simply does not have the number of people needed to police all those would-be criminals.

Once upon a time, in the days when the FCC had a lot more time on their hands, they had minions who monitored the airwaves for violators. When they discovered an operator who failed to say his call sign timely or accidentally talked over another, they sent the violator a "pink slip" (regardless of actual color), that indicated the date, time, and nature of the violation by the licensee named on the citation.

The program generated so much unnecessary paperwork and heartache resulting from nit-picky "crimes", that the FCC was met with quite a lot of unpleasant complaints of pettiness. This forced the Commission to start sending pink slips of "Good Operator Reports" to amateurs who demonstrated exemplary operating practice in an effort to stem the tide of hate mail, which actually did little to help.

In 1982 the FCC created the OO (official observer) program of volunteers who performed the verification for the FCC, and reported their rules violation incidents. The OOs sent out potential violation notices via postcard, and that reduced the frequency of reported violations because the OOs were instructed to not be so nit-picky. In 2020 the OO program was retired, replaced by the VM (volunteer monitor) program, a much more passively relaxed team.

Today, while you can report any infraction to the FCC, they tend to only focus on the most serious violations. In those cases, the FCC asks a VM to verify



the complaint, especially when it recurs frequently. If the VM can verify the violation, they report their findings to the FCC, and the Commission decides whether and what kind of action to take against the violator. Often the "action" is a letter threatening to cancel the operator's license and possibly confiscate his amateur radio equipment if certain expectations are not met. And just about as often, that's where the action ends, once the violator complies with the requests to meet their demands.

While browsing the lower bands, you might have encountered two curious HF frequencies, on which operators blatantly violate rules regarding music, obscene language, call sign failures, and generally poor operating practice. You might also have wondered why the FCC doesn't do something about them, especially since they are on night after night. Well, first, you don't know that the FCC is doing nothing about them. Second, it's rumored that there is an unwritten compromise to tolerate that behavior if the violators confine their bad behavior to those two frequencies. So, if that's true, and you don't want to hear their X-rated QSO, then [just spin the big knob](#).

We find that, even if the FCC had the bandwidth to hire a large watchdog force, today's amateurs don't truly need much enforcement because **they strive to follow the rules**. There will always be exceptions, but the kind of person willing to study and pass today's amateur radio examinations are typically not the type who flagrantly violate the rules.



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 2026 Board

President: [Adam Stribling](#), KK7NJJ
Exec. Vice President: [Jeri Brummett](#), WJ3RI
Vice President: [Bruce Fereday](#), KF7OZK
Secretary: [James Bennett](#), KK7AVS
Treasurer: [Shawn Evans](#), K9SLE
Media Editor: [Noji Ratzlaff](#), KNØJI
Program Chair 1: [Mike McAinsh](#), KI7MTI
Program Chair 2: [Daland Speirs](#), KC7LNR
Historian : [Linda Reeder](#), N7HVF
Immediate Past President: [Marvin Match](#), KA7TPH

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. Send 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.

