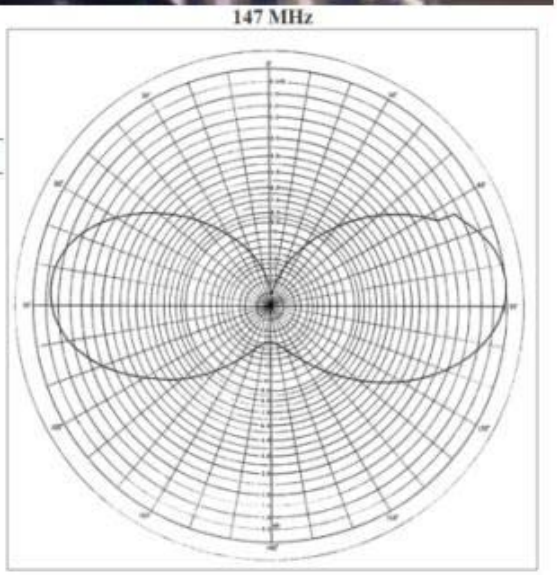
The *Microvolt*

January 2022

Parameters

- Power at Antenna: (Need help with this?) _____ (watts)
- Mode duty cycle:
  Conversational SSB, no speech processing (mode duty cycle=20%)
- Transmit duty cycle: (time transmitting)
  You transmit for 5 minutes then receive for 10 minutes (and repeat).
- Antenna Gain (dBi): (Need help with this?) _____
- Operating Frequency (MHz): _____

☑ Include Effects of Ground Reflections



Prologue

Publication: *The Microvolt* (USPS 075-430) is the official publication of the Utah Amateur Radio Club, Incorporated, 632 S. University Street, Salt Lake City, UT 84102-3213. It is published monthly exc0ept August. Subscription is included with club membership at $20 per year. Single copy price is $1.50. Periodicals postage paid at Salt Lake City, Utah. Postmaster: send address corrections to *The Microvolt*, c/o Tom Kamlowsky, 4137 Clover Lane, Salt Lake City, UT, 84124-2711.

Deadline for submissions is the 24th of each month prior to publication. Submissions by email are preferred (k7hfv@arrl.net), but other means including diskettes and typewritten submissions can be mailed directly to: Gordon Smith, 632 University St., Salt Lake City, UT 84102-3213. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. Changes in mailing address should be communicated to the Club Secretary: Tom Kamlowsky, 4137 Clover Lane, Salt Lake City, UT, 84124-2711.

Club: 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 non-profit organization under the laws of Utah. It holds a club station license with the call W7SP, a memorial call for Leonard (Zim) Zimmerman, an amateur radio pioneer in the Salt Lake City area.

Meetings: The club meets each month except July and August. The meetings are held on the second Thursday of the month at 7:30 PM in the University of Utah's Warnock Engineering Building, generally in room 1230 or 2230, sometimes in 2250 or 105.

Membership: Club membership is open to anyone interested in amateur radio; a current license is not required. Dues are $20 per year, including a *Microvolt* subscription. *The Microvolt* and membership cannot be separated. Those living at the same address as a member who has paid $20 may obtain a membership without a *Microvolt* subscription for $12. Send dues to the Club Secretary: Tom Kamlowsky, WA7ZRG, 4137 Clover Lane, Salt Lake City, UT 84124-2711. Let the Secretary know if you prefer the electronic edition of *The Microvolt* instead of the printed version.

Contributions: Monetary contributions are gladly accepted. Send directly to the Club Treasurer: Chuck Johnson, 1612 W. 4915 S. Taylorsville, UT 84123-4244. For in-kind contributions, please contact any board member to make appropriate arrangements.

Repeaters: UARC maintains the 146.62- and 146.76- repeaters. The repeaters are administered by the UARC Repeater Committee. Comments and questions may be directed to any Committee member. The Lake Mountain repeater (146.76-) is IRLP node 3352. Instructions for IRLP use are on the club website.

Ham Hot-Line: The Utah Amateur Radio Club (UARC) has a Ham Hotline, 583-3002. Information regarding Amateur Radio can be obtained, including club, testing, meeting, and membership information. If no one answers leave your name, telephone number and a short message on the answering machine, and your call will be returned.

UARC 2022 Board

President: Morris Farmer, AD7SR	801 278-4966
Executive VP: Lonnie Oaks, K7LO	801 255-1225
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Secretary: Tom Kamlowsky, WA7ZRG	801 505-9134
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Committee Chairpersons and Members

Bookseller: Rick Gregory, KG7GOW	801 582-7783
Historian: Ron Speirs, K7RLS	801 904-3587
Field Day Chair: (To be determined)	
License Trustee: Brett Sutherland, N7KG	801 298-5399
Repeater Engineer: Clint Turner, KA7OEI	801 566-4497
Autopatch Engineer: Gordon Smith, K7HFV	801 582-2438

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IRLP Information

For information on using the club's IRLP node on the 146.76 repeater, check http://www.utaharc.org/irlp. Members may contact to club Secretary for the necessary prefix code.

For late breaking news listen to the UARC Information Net Sundays at 21:00 on 146.62 or set your browser to: http://user.xmission.com/~uarc/announce.html

We are grateful to the management of XMission, our Internet Service Provider (ISP), for the donation of this Web-Page service.

For account information go to:
http://www.xmission.com/ Or call 801 539-0852

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Latest News

January (Online) Meeting:
"All About End-Fed Half-Waves"

Lots of us made our first HF contacts on a half-wave dipole. All it took was some wire, three insulators, and some feedline. The antenna matched the feedline close enough that no tuners were required. We shied away from end-fed antennas because of the matching problem: the end of a wire is always a high impedance, a perfect mismatch for most common feedlines.

But we may have been missing out on some great features of an end-fed wire. An end is usually a more convenient place to connect a feedline, as the feedline usually needs to connect to a building. Once matching is accomplished for the desired band, it works for many of the harmonically related bands as well, while the dipole only matches on odd harmonic bands. Usually 40 meters and 15 meters are the only pair where that works out.

End-fed antennas have recently come into vogue with dozens of vendors selling them. The availability of ferrite cores has made them easier to match. It might be well worthwhile for many of us to look at them more closely.

We are privileged to have Dr. Mike Mladejovsky, WA7ARK, giving the presentation at the next UARC meeting on Thursday, January 13. Many of us may remember Mike as one instrumental in getting the first Salt Lake Valley repeater on the air. He was one of the founding fathers of the Utah VHF Society and served as one of the early frequency coordinators for Utah. He now resides in central Arizona but, thanks to Internet, can speak to us without leaving home.

Mike has been active working with end-fed half-wave antennas both via modeling and actual trials on the air. Some of the topics he will investigate include:

- Why might you want a half-wave end-fed?
- On what bands can it be used?
- How does it work?
- How do you build one?
- What shape should it be?
- How are grounding and matching accomplished?
- How does performance compare to a dipole or vertical?

We have recently learned that Mike's reputation as an end-fed expert has become sufficiently well-known that he has been invited by ARRL to author a portion of the next edition of ARRL's famous *Antenna Book*. We are looking forward to the January program!

As has become our recent custom, the meeting will be held on-line via YouTube. Any time after 7 P.M. you can start looking for us at: https:/www.youtube.com/c/UtahAmateurRadioClub. From there, look for the feature that is marked "live." The meeting should commence at 7:30.

UARC meetings are held on the second Thursday of each month except for July (annual steak-fry) and August (vacation).

Our Cover

Our cover this month features a few images from the December meeting in which Paul Plack, AE4KR, told why we don't need to give up the hobby in despair to meet FCC's recent change in rules about our need to calculate whether our stations present health hazards. Thanks to tools that are available on the web, including ARRL's calculator that does most of the calculation for us, it's not at all difficult to meet the requirement and even have a pretty explanation on paper that we can keep on file.

The chances of someone requiring us to show our calculations are not great, but being prepared is not difficult. The tools include ones that show what the gains of our antennas will be in different directions and different vertical angles.

If you have been thinking you will need to sign up for a calculus course, your can relax; it isn't necessary. If you missed Paul's presentation, it can be found on YouTube. From the YouTube home page, start by searching for "Utah Amateur Radio Club."

License Classes Starting in January

Our UARC President, Morris Farmer, AD7SR, is planning to offer on-line classes for those seeking Technician or General licences plus an in-person class for those looking to test for the Extra Class license. The schedule is as follows:

Technician: Mondays starting January 17
General: Wednesdays starting January 19
Extra: Tuesdays starting January 25

To sign up, send email to Morris at: mailto:ad7sr@arrl.net.

Utah County License Classes

Noji Ratzlaff, KNØJI, tells us that a number of in-person license classes will be offered during 2022. Each course will cost $10. Register at: http://psclass.orem.org/.

License Class	Day	Dates	Times
Technician	Four Tuesdays	Jan 18, Jan 25, Feb 1, Feb 8	6:30 to 8:30 pm MST
General	Four Tuesdays	Mar 22, Mar 29, Apr 5, Apr 12	6:30 to 8:30 pm MDT
Extra	Five Tuesdays	Jul 12, Jul 19, Jul 26, Aug 2, Aug 9	6:30 to 9:30 pm MDT
Technician	Four Tuesdays	Sep 20, Sep 27, Oct 4, Oct 11	6:30 to 8:30 pm MDT

These are homework courses; you'll be expected to complete an assignment (and email me the results) by the start of every class period, even the first one. No course textbooks are required. Then again, these courses will be casual, hands-on, and fun for those who remain awake.

Please contact Noji (nojiratz@hotmail.com or 801-368-1865) with any questions about the courses.

"Virtual Ham Expo" coming in March

With Covid issues continuing to haunt us, many groups that traditionally hosted conventions or hamfests have found ways to convert these get-togethers into on-line affairs. We have recently heard from the "Virtual Ham Expo" folks that their August event was so successful that another one is planned for March of 2022.

There will be "exhibit hall booths of every size" for demonstration of a wide variety of products. Previous events have attracted 6,000 to 10,000 attendees.

For more information go to:
https://www.qsotodayhamexpo.com/.

WSJT-X Development Group Releases Version 2.5.3

The *WSJT-X* development group — Joe Taylor, K1JT; Steve Franke, K9AN; and new member Nico Palermo, IV3NWV — has announced the release of *WSJT-X* 2.5.3. This new release includes a feature of special interest to users participating in the ARRL January VHF Contest (January 15 – 17, 2022). This new feature is an enhanced macro facility for text messages that is aimed at making it easier to ask another station to move to another band. This feature is described briefly in the updated ***WSJT-X User Guide***. Installation packages for *WSJT-X* 2.5.3 are available on the ***WSJT-X* website**.

President's Report: December 2021

Well, it's been quite a year for the club despite the pandemic. While we still believe that holding in-person meetings is still a bit dangerous for some of us, we did open-up for both Field Day and the annual Steak Fry. Attendance at both events was down from previous years, but that was to be expected with the pandemic.

For the remote radio site near Leamington, UT, we purchased and, after a *lot* of planning and preparation, and over a series of four or five trips, we were able to get a 20-foot tower mounted on top of the existing tower and a large 20-10 meter (5-band) Log-Periodic beam up and working. Users can control the beam remotely thanks to the efforts of Clint Turner, KA7OEI; Gary Crum, KK7DV; and Chuck Johnson, WA7JOS. This was a major effort taking several trips and a significant amount of club funds, but has already paid off with SSB contacts to New Zealand, South America, and Europe. There were many aspects to this effort, and I recommend the write-ups and pictures available on the UARC web site.

What lies in the future for this premier remote site? Well, maybe an amplifier if the need arises. That effort would require some modifications to the existing wire antennas to handle more power. It is a project we'll look at, if there appears to be sufficient need, we'll put it on the list with the other projects that need the club's attention.

Both remote sites are there for any club member that has a General license or above. Let's get some good use out of them. It looks like Solar Cycle 25 is going to be a winner, so get on the remotes and make some worldwide contacts!

We hope you have had a marvelous Holiday season and that 2022 will be your best ever.

73,
Morris Farmer, President UARC

ARRL to Oppose Forest Service Fees

The US Forest Service is proposing to implement a statutorily required annual fee for new and existing communications use authorizations to cover the costs of administering its authorization program. ARRL plans to vigorously oppose the imposition of the proposed fees on Amateur Radio.

The Forest Service proposal results from requirements set forth in the Agriculture Improvement Act of 2018 (aka "the Farm Bill"). Specifically, section 8705(c)(3)(b) of the Farm Bill directs the Forest Service to issue regulations that require fees for issuing communications use authorizations based on the cost to the Agency for maintenance or other activities to be performed by

the Agency "as a result of the location or modification of a communications facility."

The Forest Service is responsible for managing Federal lands and authorizes the use and occupancy of National Forest System (NFS) lands for communications facilities that provide communications services for adjacent rural and urban communities. The Agency said in its proposal that it administers more than 3,700 special use authorizations on NFS lands for infrastructure that supports more than 10,000 wireless communications uses at 1,367 communications sites.

According to the Forest Service ***Notice*** published in the December 22, 2021 issue of the *Federal Register*, revenues from the proposed fee, "would provide the funds necessary to support a more modernized, efficient, and enhanced communications use program," and will "cover the costs of administering the Agency's communications use program." Costs, as laid out in section 8705(f)(4) of the Farm Bill, may include expenditures for such things as "on-site reviews of communications sites, developing communications site management plans, hiring and training personnel for the communications use program, conducting internal and external outreach for and national oversight of the communications use program, and obtaining or improving access to communications sites on NFS lands."

ARRL encourages Amateur Radio licensees to file comments opposing the imposition of the proposed administrative fee on Amateur Radio users. Comments must be received in writing by no later than February 22, 2022. Comments may be **submitted online** at the Federal Rulemaking Portal or via USPS mail to Director, Lands & Realty Management Staff, 201 14th Street SW, Washington, DC 20250-1124, and must include the identifier "RIN 0596-AD44."

Utah 2021 Field Day Results

The results of the annual Field Day activity were published in the December issue of *QST* and we can happily announce that UARC had the highest score in Utah at 6,914. The Utah Valley group was the next 3A with a very respectable 6,764. No other Utah group had a score in the 6000's.

In past years ARRL has put on their web site a nice database where one can gleen a large amount of information failry painlessly. This year was different. They gave us just a giant PDF file that duplicated the complete listing in *QST*. We believe that we have extracated the items of interest accurately, but can't give a guarantee of perfection. Our best approximation to the Utah results is on the opposite page.

In addition to scores we have included a "percentile" which is the percentage of stations entering in the same entry class but that scored lower than the one being listed.

Actual "out-in-the-field" entries were notably lower than is usually the case, no doubt owing to issues related to Covet spread. There were just 12 total "field entries" and only three of those were club groups. (Davis county was the third class "3A" entry.) The rest were operating in or very close to buildings. Of those, only two used emergency power.

ARRL has made the rules more attractive for those that stay at home, because of the disease issues. In particular, class D stations (home on commercial power) can work other class D stations for credit.

The "Collins Aerospace Radio Group" did very well with just two operators getting a score of 5,914 and a percentile of 99.4 among the 308 total 2D stations.

A special thanks to the good UARC CW operators in particular, who made our high score possible.

Utah 2021 Field Day Scores

Name	Call	Contacts	Power	Ops	Score	Class	Pcntl
Ogden ARC	W7SU	362	2	63	2,122	2A	65.9
Draper Ham RA	K7DPR	120	2	40	1,968	2A	61.7
Traveling AR Team	AC7YT	1,346	1	4	1,696	2A	53.2
Utah ARC	W7SP	1,702	2	15	6,914	3A	89.1
Utah Valley ARC	K7UVA	1,930	2	58	6,764	3A	88.5
Davis Co. ARC	K7DAV	521	2	41	2,610	3A	39.4
	K7CAR	927	2	1	2,898	1B	97.5
	AD7KG	161	2	1	794	1B	77.0
	K7JSG	240	2	1	784	1B	76.3
	KD7AKE	37	2	1	224	1B	15.9
	WJ7S	66	5	1	910	1B Bat	69.2
	K7BWC	205	2	1	832	1B 1 Op	77.1
Utah DX Assn.	WR7Q	326	2	2	1,224	1B 2 Op	71.9
Sandy ARC	K7DOD	75	2	1	350	1D	59.4
	NB7B	54	2	1	266	1D	51.1
Davis Co. ARC	KJ7NO	41	2	1	214	1D	45.7
	KB0OLA	57	2	1	164	1D	30.4
	W7DBA	84	1	1	134	1D	25.0
	KE6UWJ	18	2	1	122	1D	23.8
	KE4TH	21	1	1	92	1D	10.4
Collins Aerospace Radio Group	W7CXX	1,403	2	7	5,914	2D	99.4
Great Salt Lake Contest Club	K7KC	1,307	2	4	3,862	3D	99.8
	K7CA	111	5	1	1,260	3D	77.9
Ogden ARC	KE7DOA	154	2	1	766	3D	60.8
	K7EA	100	2	1	550	3D	49.1
Utah ARC	AB1IP	29	5	1	495	3D	45.0
	K7DBN	59	2	1	324	3D	27.5
	WI7J	78	2	2	406	2E	10.0
Cottonwood Heights ARC	W7RCH	443	2	12	3,210	8E	90.0
Dixie ARC	W7DRC	627	2	48	2,754	2F	80.7

Member of the Month

Brian Winther, K7HQO

By Linda Reeder, N7HVF

This month we are featuring Brian Winther, K7HQO. Brian was interested in amateur radio when he was a young child, but Brian didn't do anything about it until years later when he was working at The Primary Children's Hospital. Brian works as a pharmacist in the Neonatal clinic with the babies.

The Primary Children's Hospital taught an amateur radio class and Brian said "If they are going to teach me, I will go for it." Brian took the class and passed his Technician exam. He received his license In 2008.

Brian studied on his own for the General and Extra class licenses. In 2011 Brian received his General class license and in 2015 his Extra class license. Brian told me one of the main reasons he got envolved in amateur radio is that he loves to help people in emergencies. He wants to do all he can to help others in need of emergency help.

One of the things Brian likes about amateur radio is being able to reach out and meet new people and get to to know them. Brian likes to help out in bike racing and running. He is involved with ARES and RACES.

Another thing he likes about amateur radio is the ability to talk from the east coast to the west coast on his HF rig. The furthest contact Brian has made so far is to Cuba. One day Brian heard South Africa on his HF rig, but unfortunately, the South African operator could not hear Brian.

It was amateur radio that got Brian interested in working with Civil Air Patrol which works from the national Guard Armory. Brian says the armory he attends is near his house. Civil Air Patrol frequencies are different from the amateur radio frequencies. Brian enjoys it but it is hard work.

Brian and his wife, Tara, have two children, one son and one daughter. Their son, Ian, has his Technician license. Brian is hoping their daughtor, Tanner, will get her license. Brian is working on it.

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Brian is a member of UARC, The VHF society, The Utah SAG, and the ARRL. The Utah SAG is a group who provides communications for bike races and various public serivce groups.

Brian has another interesting hobby: a barbecue group. It is competive group that tries to see who can make the most delicious barbecue dish. Brian is also interested in vaulting, gymnastics, and horseback riding.

Brian, we appreciate your contributions to amateur radio.

73 N7HVF Linda Reeder

Brian Winther, K7HQO