

The *Microvolt*

July 2022



UARC's 2022 Field Day at Payson Lakes

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 except 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. 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 usually 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

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|--|--------------|
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| Vice Pres: Bruce Fereday, KF7OZK | 801 883-9428 |
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| | |
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| License Trustee: Brett Sutherland, N7KG | 801 298-5399 |
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Contents

| | |
|--|---|
| In-person meetings to resume | 3 |
| UARC is looking for a <i>Microvolt</i> editor..... | 4 |
| Consider a UARC board position!..... | 4 |
| Report on the 2022 UARC Field Day..... | 5 |
| Member of the Month..... | 8 |

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

Latest News

Live (in-person) UARC meetings Resuming in September

After a bit more than two years of plague and pestilence, we are pleased to announce that we are resuming “In-Person” meetings, starting in September. The scheduled topic for the October’s meeting will be the ever-popular “Homebrew” night, so be sure to bring, demonstrate and explain that project that you’ve been working on for the past two years!

As before, these meetings will be held in the “Warnock Engineering Building” on the campus of the University of Utah, which is the same place that we held meetings before “it” happened, and we went to online meetings. Just like before, we probably won’t know in which room, exactly, we will be meeting for a little while yet as that is something assigned to us by the powers that be at the U.

We encourage attendance of the live meeting, but we will also do our best to stream the meeting live on UARC’s YouTube page:

<https://www.youtube.com/c/UtahAmateurRadioClub>.

From there, look for the feature that is marked “live.” The meeting should commence at 7:30. There should be some chatter on the channel by about 7 P.M. and you can connect in that period to make sure everything is working.

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

Upcoming Amateur Radio Events:

Saturday, September 17 – Davis County ARC Swap Meet, Bountiful Park, starts at 9:00 AM – same place as recent years.

Saturday, September 24 – Utah Valley ARC

Swap Meet, Spanish Fork North Park Grand Pavilion (*same as last year, near the Costco*): Starts at 9:00AM

October 7-9 – 2022 ARRL Rocky Mountain Convention, Cheyenne, WY – For more information go to: <https://wyhamcon.org>

Our Cover

To many hams, June equals Field Day, and our cover shows a few scenes from that event – *Read more in the article starting on Page 5.*

License Classes coming up:

Utah County:

In-person license classes will be offered at the City of Orem during 2022. Each course will cost \$10. Register at: <http://psclass.orem.org/>.

These classes will occur on September 20, and 27, and October 4 and 22 from 6:30 through 8:30 PM, MT in Orem – See the above web site for specific details on location and cost.

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.

Classes via Zoom (online):

From UARC:

UARC’s Bill Rouleau (AE7UI) and Morris Farmer (AD7SR) will be starting Zoom-only

sessions for the Technician and General classes running from 7-9 PM MT on their respective days:

Technician: September 12th, 9 weeks duration

General: September 21st, 9 weeks duration.

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

Other Zoom classes:

Another session of classes – also via Zoom – will

run on Thursdays, September 8th through October 20th starting at 8:30 PM Mountain Time. This session is sponsored by the National Electronics Museum and those interested should email to: roland.anders@comcast.net

For general information about classes and test sessions – both in-person and online – go to the “utahsag.org” and click on the “Training & Classes” tab at the top of the page.

UARC is looking for a *Microvolt* Editor

With the passing of our friend Gordon Smith, K7HFV, a void was left in UARC – notably that of the *Microvolt* editor: While not meant as an excuse, this explains, in part, why the “July” issue is coming out closer to September.

We are, therefore, seeking a new editor for *this* publication.

What is required:

As you might expect, the editor is responsible for putting together the content of the *Microvolt* – but it isn’t just that: This person gathers the information for articles to be put in the *Microvolt*, works with those that submit articles – both regular features and those submitted for consideration – and may even be responsible for penning a few articles of their own if the column-space seems to look a bit empty when everything else is done.

Of course, knowing your way around word processing software is an absolute must (*we have switched to the free and open-source LibreOffice – available for PC, Mac and Linux*) and having a reasonable handle on the English language and its grammar is a definite plus. It also helps to have at least a slight flair when it comes to the aesthetics of putting everything together in a sensible fashion on the page and screen.

Who can apply:

Of course, the *Microvolt* editor – one who would be on the UARC board – must be a member of UARC, but other than that – and due consideration of the aforementioned qualifications – we will be happy to entertain anyone who is willing put themselves forth for consideration by the UARC membership.

If you are willing to do this task, please contact the UARC club president, Morris Farmer, via email – or, for that matter, any of the club officers.

Consider a UARC board position!

In addition to an editor, UARC is also looking for “new blood” for 2023 – and the future.

If you are willing, please consider running for a club officer position. **ALL** board positions should be considered to be open, simply present your name to a club officer (*preferably the president*) so that your name may be considered by the membership. A slate of candidates will be initially presented to the membership during the November meeting – but new names may be added up to the time of the election in December.

UARC 2022 Field Day

For many hams, if it's June, it's Field Day!

Field day is that time of year – the *fourth* (but *not always the last*) weekend in June. Sponsored by the ARRL – the American Radio Relay League, this event, which is *not* a contest, is where both groups and individuals are encouraged to do what many hams are wont to do, anyway: Go out into the wild and play with their toys!

During this weekend, many individuals set out for their local wilderness – which may be just a local park – and set up a portable station. Often with modest antennas, such as a wire slingshotted into the trees, they do their best to make as many contacts as they can in the 24 hour period which, for us in Utah, goes from noon Saturday until noon Sunday.

UARC's Field Day:

For decades, now, our “place” has been a particular meadow near Payson Lakes. In this meadow, a strange phenomenon starts to manifest itself in the days before Field Day actually starts: Seemingly ordinary trailers appear, but they soon become festooned with odd, metal protuberances – but the strangest part is yet to come. In the day or two before the weekend, more, similarly-equipped vehicles and trailers appear and suddenly, two more *really* strange-looking trailers show up, bearing what might look to the uninitiated like primitive missile launchers – and the truly paranoid may not be comforted by what happens next: These things suddenly point skywards.

At this point, it would be clear to almost any right-minded person that what they are looking at was a bunch of hams, particularly when large, Yagi antennas are placed atop these “portable” towers.

Set-up:

By the time Thursday rolled around, there were a few trailers on site – including the two owned by

UARC sporting towers and equipment for generating and distributing power.



UARC's 85 foot tall “portable” tower with beam

Of these trailers, the smaller one sports a 25 foot tall tower and an 8 kW propane generator. Several hundred feet away, directly north of it was placed the larger trailer, with its 85 foot tower and a giant reel of power cable to allow distribution of electricity to the individual Field Day stations.

These two towers are placed on a north-south line with respect to each other: In Utah, beams would be pointed either east or west, and by placing them north and south of each other they would be pointed sideways with respect to each other, reducing the probability of interference from each other, taking advantage of the “nulls” on the sides of the antennas.

By ARRL's Field Day rules, we are allowed to start setting up at 6 PM on Thursday and at the allotted time, a slow metamorphosis began: Cables were unfurled, tents laid out, and the assembly of antennas commenced. UARC uses a combination of trapped Yagi and wire antennas. For the tall tower, a four element Cushcraft A4 beam antenna is used, and it and the antenna for the shorter tower – a Cushcraft A3. In addition to the two “tribander” beams, several wire antennas – 102' non-resonant dipoles – are strung between the two towers for operation on the lower bands, namely 80 and 40 meters.

Troubleshooting the A4:

For several years, we've been a bit suspicious of how the A4 was working: While its users could convince themselves that it seemed to have some sense of directionality, it seemed to be underwhelming – and the VSWR curves on the 15 and 10 meter bands didn't seem to be right so an investigation was undertaken by Clint, KA7OEI on Thursday night.

The main symptom seemed to be that the 15 meter band's VSWR was lowest about 500 kHz below the band. Because, in recent, years, solar activity had been low, we really hadn't paid much attention to this but we were optimistic that this year, conditions on 15 and 10 meters *might* be good enough that we would venture up there and productively make a few contacts.

Initially, we adjusted element lengths to try to force-tune the antenna, but became suspicious when the elements' lengths seemed far too short. Improvising an antenna range - a NanoVNA as a signal generator and some distance away, connected to an HF receive loop antenna, was a “Tiny SA” – a small \$50 spectrum analyzer. More than enough signal was being generated to be “seen” by the analyzer so the antenna was rotated and the results justified these suspicions: The antenna had no front-to-back ratio at all, indicating that it likely had no forward gain as well! This that lead to only one conclusion – something that

we'd hoped would not be the case: The traps were messed up.

With this realization, on Friday, after dinner, Clint and Laird, WA7TGC went about disassembling every single trap on this antenna (*there are 16 of them!*) and almost immediately we discovered what might have been the problem: One of the 15 meter traps on the driven element was flipped end-to-end – a problem not previously noted due to the lack of factory labels on most of the traps indicating their proper orientation – and other than by at least partial disassembly, there would no way to visually determine this – and it had probably been this way for years.

With this trap installed correctly, the VSWR problem seemed to be fixed, but all of the other traps were removed to be sure that *they* were properly installed and they, disassembled, cleaned of insect debris and dirt, inspected for mechanical issues and reinstalled. Raising the antenna and spinning the rotator we were gratified to note that on 20, 15 and 10 meters, signals from the east seemed to disappear when the antenna was pointed west – *a very good sign, indeed!*

Field Day activity:

In these late-COVID days – and with, at the time, \$5 per gallon gasoline, the attendance at Field Day was a bit less than we'd hoped for – a problem exacerbated by the fact that one of the groups present had to “bug out” when they discovered that some of their party had come down with the virus in the few days that they'd been on site already.

Despite the low-ish numbers, we persevered. Three HF stations and their operating tents were set up and everything was operational by the time noon rolled around – the start of Field Day here in “7” land!. Immediately, the bands were mayhem with layers of stations frantically calling “CQ”. UARC's two SSB stations – the 20 meter using the A3 antenna and the 40 meter station using one of the 102' dipoles - added to the melee, jumping right in and making contacts, themselves.

The situation was different at the “20 CW” station. Over many of the past years we’d had a few CW operators around, including Gordon, K7HFV, who was happy to sit in the tent punching the appropriate macro key to send CQ and the various exchanges and seemingly effortlessly able to copy calls, sections and station class from the cacophony emanating from the speaker. This year, we were a bit stumped: At the time of Field Day, we had no CW operator on hand – but that didn’t stop us entirely: About a dozen and half CW contacts were managed with careful listening by Tom, WA7ZRG and Clint – both of whom were a bit out of their element among the 20 WPM+ signals on the bands. Fortunately, that evening we were joined by John, WJ7S, who wouldn’t admit to being a “crack” CW operator, but seemed to have no trouble picking out stations and working them and, like Gordon, made it look easy!



KB2WTA operating the 40 meter station

As the shadows started to lengthen, the smell of cooking burgers and brats began to waft through the air. A crowd – many of whom were “day visitors” who’d come up from the valley to get their radio “fix” and work a few hours at the field day stations – gathered around to enjoy the potluck dinner, talk, and renew friendships with people that they’d not seen for a while and to make new friends.

With the darkness, the bands changed: What signals there were on 10 and 15 meters gradually petered out and the 40 meter band started to get a bit noisy and “long” as stations from the western U.S. disappeared and those farther afield faded in.

20 meters continued to be productive well after dark, but it, too, eventually succumbed as the ionosphere’s density dropped off as our part of the planet rotated into darkness.

With the late hour, the 20 meter SSB stations dropped off – followed a while later by the 40 meter station, leaving only the 80 meter SSB station to make contacts through the crashes of summer static.

As the day dawned, the higher bands seemed to wake up at about the same time as the operators and again, all three of UARC’s stations were again on the air. The frenetic pace of making QSOs continued until noon, when everything stopped, and the operators took a deep breath: It was over – at least the “operating” part.

Fortunately, tear-down seems to take a lot less time that set-up and in the next few hours, the gear was returned to its boxes, tents were taken down, tables and chairs folded, cables and antenna wires reeled up, beams disassembled, and towers cranked down. The only casualty was the smaller beam: In tilting it back down, it “got away” and tried to impale the ground with the end of its elements – but the ground won! Fortunately, no-one was injured and the cost of aluminum to replace these elements isn’t too onerous and next year, part of that antenna will be shinier than the rest of it!

Lessons learned:

At the conclusion of every Field Day, we reflect back on a few things that we learned in the hopes that next year, we’ll do better. A few of these include:

More participation: It’s fair to say that we’d wished for more people to share the work, but the high price of fuel and the summer outbreak of the virus seems to have derailed the plans of many who’d planned to come.

More CW operators: Every year vows are made to work on their Morse proficiency over the next year – but as with New Years’ resolutions, they are often forgotten a few weeks hence.

See you at field day in 2023!

July Member of the month: Rick Hanzlik, KR7V by Linda Reeder, N7HVF

This month we are featuring Rick Hanzlik KR7V.

Rick was exposed to amateur radio while growing up in South Dakota as Rick's father and his father's two brothers had their amateur radio licenses. In 1980 Rick was a sophomore at the South Dakota School of the Mines where Rick was getting his electrical engineering and computer science degrees. The college had a ham radio station up and running, so Rick received his novice license.

After graduation from college Rick was really busy with his career and raising his family. Rick and his wife Ruth have one son and one daughter, all grown now.

In may of 1987 Rick and his family moved to Utah where Rick worked a variety of companies, the last being UTA where he was an IT project manager. In 1987 Rick, obtained his technician plus license for which he studied on his own, but it wasn't too hard because of his background in electronics. In 2018 Rick upgraded to general, then extra class.

Rick's favorite thing about amateur radio is digital modes. Rick is usually on VARAC, a 2-way digital chat mode used on HF. Rick has a Yeasu 3204 that he uses for fusion along with a 2M/440 Alinco and a Icom 7100 multi band radio. Rick also enjoys assembling kits and like many of us, he wants to build up his Morse code speed.

Rick is a very active member of ARES. They just had an exercise in the spring of this year where

they went to the local schools in their areas where they put their radios on simplex and see if they could check in to the net at the school. They used the schools because that is a safe place to be.

Rick would like to see more young people get in to the hobby. Rick is a member of the Sandy Amateur Radio Club, which has a weekly net and, on the third Thursday, they have an in-person meeting. Rick is also a member of ARRL and is the webmaster for the Utah Section. Additionally, Rick has been a member of UARC since 1988.

Other hobbies Rick enjoys wood carving and photography.



Rick, KR7V, in his ham shack

Rick, thanks for your contributions to the hobby!