The *Microvolt*

November 2021

The New Leamington Antenna

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 2021 Board

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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:
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Latest News

November (Online) Meeting:
"How to Fend Off Lightning"

A basic problem in amateur radio is the fact that for best results one must have an outdoor antenna, but an outdoor antenna can be a wonderful device for atracting lightning. Some hams have had a lightning strike do severe damage to the electrical wiring in their houses. Fortunately, there are ways to avoid the problem or, at least, make a drastic reduction in its probability.

The presenter will be Larry Labayen, a Senior Applications Engineer with Lyncole in southern California, a division of VFC. A primary product of the company is means to minimize lightning damage.

Larry writes:

"Lightning is a natural phenomenon that can be destructive to structures, electrical equipment, and can cause harm or death to human life. Radio communications towers such as cellular sites, mountain-top radio relay stations, and public safety radio networks are tall structures that are prone to lightning strikes, be it direct or indirect. This presentation will show how the radio telecommunications industry protects their radio communication assets from the effects of lightning. We will cover the basics of lightning protection, grounding, and industry standards."

Statistics showing that spread of the Covid virus is still worrysome have convinced the UARC Board that we should continue holding our meetings on-line. Any time after 7 P.M. you can start looking for us on YouTube: 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).

Officer Nominations Needed

The coming November meeting will include announcements of those nominated for officer positions in 2022. If you have a name you would like to submit, or if you would like to volunteer for an office, let one of the current officers know. (Contact information is on our inside front cover.) If all else fails, get ready to send your nomination via YouTube early in the club meeting.

By the end of the on-line meeting, the nominations should be reasonably close to complete, so, if there are any contests, be thinking about your choice prior to the December (election) meeting.

Our Cover

Our cover this month shows folks assembling the new log-periodic beam at the site of the club's remote-controllable HF station. The one person with his face visible is our Treasurer, Chuck Johnson, WA7JOS.

More on the Leamington station can be found starting on page 4.

Information is Needed From Our Members

As mentioned last month, we are in need of two things: at least two volunteers to run for Program Chairpersons, and nominations for "Member of the Year." If you can help, contact Morris at: mailto:ad7sr@arrl.net.

Upcoming Licensing Tests

Opportunities to visit volunteer examiners and test for the various classes of amateur radio license

City	Date	Day of Week	Contact Person	Call	Phone	To Sign Up Go To:
Provo	11-17-21	Thu	Steve Whitehead	NV7V	(801) 465-3983	
St. George	11-17-21	Wed	Gary Zabriskie	M7ARE		https://www.dixieham.org/meetings.html Scroll to "License Exams"
Provo	11-20-21	Sat	Steve Whitehead	NV7V	(801) 465-3983	
Logan	11-20-21	Sat	Richard D. Elwood	KE7GYD	(435) 770-7050	https://hamstudy.org/sessions/5fffbbf8b950eeee1ec4afcb/1
Murray	11-29-21	Mon	Garth Wiscombe	W7PS	(801) 558-5936	https://hamstudy.org/sessions/5ffe5e00944df87a81d4ab12/1
Clearfield	12-01-21	Wed	Joe Giraudo	N7JEH	(775) 777-4798	https://hamstudy.org/sessions/5ff397252287714e18f5d90f/1
Logan	12-04-21	Sat	Richard D. Elwood	KE7GYD	(435) 770-7050	https://hamstudy.org/sessions/5fffbc20b950eec823c4afd0/1

Update on Leamington

By Clint Turner, KA7OEI

(As we go to press, UARC's remotely controllable station near Leamington is getting closer to being available with its new log-periodic antenna. –Ed)

A two-vehicle work party left the author's house at about 0645 on this day [Oct 23]: In Laird's vehicle rode Bruce Boyes, Chuck Johnson, and Clint Turner, while Bret Anderson (KG7RDR) drove down under separate cover.

[Continued on page 6]

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d. Percent Paid (Both Print & Electronic Copies) (16b divided by 16c × 100)	98.9	98.9

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Gordon R. Smith

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Arriving on site around 0900, we met Bret, who was already there. We immediately got to work, retrieving the antenna from the roof of the building and setting it on sawhorses. Bruce, Bret, and I climbed the tower and began hauling gear to the upper platform.

Almost immediately, it was observed that the box containing the transformer for the 160-meter end-fed half-wave had failed structurally: The "antenna" side had been attached to the box itself, with the entire tension of the wire pulling on the side, ripping it out, with the entire wire being supported by the winding on the transformer.

The first order of business was to install the winch — the cable attached at the very top of the tower — raise the tower — sans antenna — and then fix the temporary guy wires: One of them was the winch cable itself; another was the northwest guy line itself as it was clear of obstructions, and the third used a come-along, connected at about halfway up the tower.

The first task done — verifying that the temporary guys would work as expected — we pulled the tower out of its mounts and slid it farther back, resting the top edge of the tower on the top rail, putting the thrust bearing and mast within easy reach.

By this time, the wind had peaked and ebbed with occasional light rain. During gusting, the tower whistled loudly, disproportionally loud for the actual windspeed, but we pressed on. By this time, Laird, Chuck, and Brent had applied lines to the beam itself, the main line, with an extra pulley, and another line on the backside of the beam — with two lighter ropes on the largest element for use as a tag line to steer the beam and hold it away from the fence and tower as it was pulled up.

With Bruce pulling up the beam and those below steering it, we managed to work our way around the obstructions, bringing the top nearly even with the guard rail. At this point, we started pulling on the line attached to the bottom of the beam, rotating the mast from vertical to horizontal, allowing us to lift it onto the mast, giving us a bit of respite before sliding the U-bolt over the mast and tightening it up.

At this point we realized that something was amiss, finally noticing that the alligator clamps were missing. Installing those, we re-tightened the mast-to-boom clamps, and put the air terminal (lightning rod) and mast-to-tower grounding jumper in place. In doing so, we established the approximate position of the bottom of the mast, so we installed the rotator mounting plate at a location a bit more than 4 feet above the base of the tower. With the mast somewhat loosely clamped in the rotator, we tightened the pinch bolts on the thrust bearing. The next step was to drag the tower away from base and reinstall it on the hinge plate — and we were ready to raise the tower.

The lifting of the tower went very smoothly, just as it had in previous tests with and without static loads, despite occasional moderate guests of wind. With the antenna and tower vertical, the third temporary guy wire (using the come-along) was put in place and I then climbed the tower and attached the permanent guys. With the aid of a level, the tower was then set to plumb in both axis as the turnbuckles were tightened, followed by the installation of safety wires that were run through and around them to prevent loosening and to prevent failure should a turnbuckle break.

With the tower now guyed, I stood on the thrust bearing plate to inspect the beam and noticed that with the tightening of the boom-mast clamp, it had warped slightly and the balanced feedline was resting on one of the U-bolts. With the aid of several zip-ties on the U-bolt, some convoluted tubing on the feed and a liberal application of RTV over the entire construction — both to hold it in place and to provide UV protection to the plastic spacers — the problem was solved.

At about this time, Chuck and Laird went to the far end of the 160-meter antenna and disconnected it, allowing a repair to be made. Chuck found a piece of thick phenolic with two holes to be used as both an insulator and an anchor for the wire and some dacron rope was used to take up the tension of the wire rather than the box itself, as should have been done from the beginning. The box was “repaired” by smearing a large amount of RTV onto the broken piece and wrapping the entire box with tape. With this repair done, Laird and Bret re-tensioned the 160-meter antenna. To be sure, the box containing the end-fed half-wave transformer will have to be replaced, but the repair should last through the winter.

WIth the tower now secured, we turned our attention to running the rotator and coaxial cables — a task performed by Bruce, complicated by the fact that we ran it under the grating and that it had to be carefully fished along as access from underneath — wasn't practical. Meanwhile Bret and Bruce had installed the NEMA box that contains the rotator’s lightning arrestor and antenna relay and I installed spade lugs on the rotator cable, which were then connected by Bruce. The N connector was installed on the coaxial cable from the beam and Bret's Nano VNA was wielded, showing that the VSWR of the beam was comfortably below 2:1 on every amateur band between 14 and 30 MHz.

I then took the free end of the 150' of rotator cable, fed it through the grate, and started down the ladder, running in the same channel as the coaxial cable, then under the ice bridge near the bottom of the tower, and then into the building. With Chuck at work terminating the far end of the cable, I worked my way back up the cable with a bag of zip ties, securing it, eventually ending back up at the top of the tower.

A few minutes later, the rotator was live, so Gary, KK7DV, remotely commanded the rotator to point north and I scaled the tower again to set the antenna's heading accordingly while Bruce tightened the clamps. Via radio, it was verified that the beam had directivity and we finished applying zip ties and tape to the cables, lowering gear and then returned to ground level.

After the leaving the site, we wandered over to Nephi for the “traditional” meal at the Chinese restaurant and headed home.

It is believed that the N-to-N coaxial jumper that was on-hand is bad, so it should take only a few minutes on the tower to get both the end-fed half-wave and beam working. Two tower-climbers will be required (for safety) and this may be done at any time with “reasonable” weather.

Member of the Month

Sylvia Bernert, KC7KQY

By Linda Reeder, N7HVF

This month we are featuring Sylvia Bernert, KC7KQY. Sylvia is originally from India. She was adopted when she was five years old and came to the United States. Sylvia became interested in amateur radio while she was living with a foster family. Sylvia's foster father, Dave Jolley, was very active in amateur radio. Dave has his Extra class license with the call sign K7DV. Dave's wife, Wanda, has her General class license with the callsign is N7FWT.

Sylvia was a senior at Morgan High School.where she took a ham radio class. One of the teachers there had his Extra class license. Bill Mullett, AB7MO, was the volunteer examiner who administered the exam to Sylvia in Ogden. She obtained her Technician class license in 1995. The foster family, Dave and Wanda, now live in Idaho Falls, Idaho. Sylvia talks to them every day on the Intermountain Intertie.

When Sylvia first got her license, ham radio became her lifeline. She could always find someone to help her when she got lost traveling. One evening when Sylvia was trying to get home, she realized that she was lost. A ham radio operator found Sylvia and gave her a ride home. Sylvia will always remember that incident. She says ham radio people are a friendly bunch.

Sylvia's husband, Jason, has passed his Technician test and now has the callsign KE7WJY. Sylvia and Jason got married in 1997 in Morgan, Utah. Sylvia and Jason have two children, one boy and one girl. They are all grown now. After Sylvia got married, amateur radio got put on the back burner. At least Sylvia never let her license lapse. Now that her children are grown, Sylvia has more time to devote to the hobby. She says it is wonderful to be on the air again.

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Sylvia works for Verizon Wireless as a tech support specialist.

Sylvia is a member of UARC. Other hobbies Sylvia enjoys are cooking, knitting, singing, playing the keyboard, traveling, and spending time with family.

Sylvia, welcome back to amateur radio.

Sylvia Bernert, KC7KQY