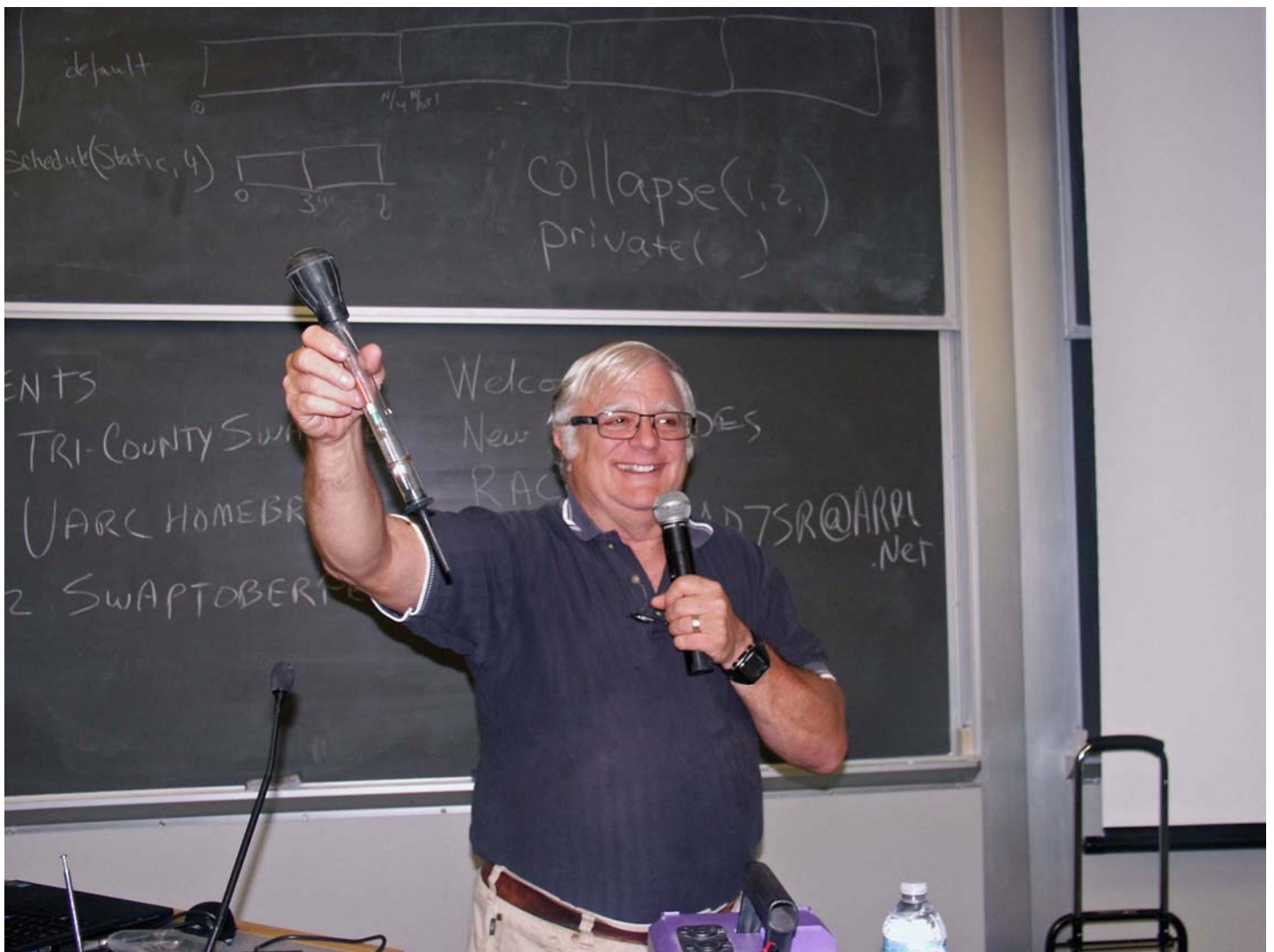


The *Microvolt*

October 2019



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. 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 2019 Board

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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>.

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



The Microvolt

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October Meeting: Homebrew Night

It's that time again: *Homebrew Night*. The October UARC meeting will be the night when amateurs can show off pieces of equipment, test gear, antennas, or software that they have created themselves as part of their amateur radio stations. The art of homebrew dates all the way back to the beginnings of amateur radio in the early 1900's when the only way to get on the air was to build your own gear. It has continued in many ways to the present when amateurs are inventing new circuit schemes, processing methods, digital codes, and just clever ways to make devices that are already familiar.

The meeting will take place Thursday, October 10th at 7:30 P.M in room 1230 of the Warnock Engineering Building on the University of Utah campus.

Anyone who has built something that has not been displayed at a previous UARC homebrew night is welcome to show the item at the coming meeting. There will be awards for those who do. Each person showing a project will have a few minutes to explain what the device is, how it works, how it was made, and/or what its advantages are. Feel free to bring diagrams, recordings, or other show-and-tell items that will help explain your project. If the item itself is too large or impractical to bring in, just bring photos, diagrams, and, perhaps, performance data, to help everyone understand what you have done.

The Master of Ceremonies will be Glen Worthington, WA7X. Hurry and finish your project so you will be able to participate!

UARC meetings are held on the second Thursday of each month. The room number varies with availability. See <http://user.xmission.com/~uarc/meetmap.html> for a map and information on finding the building.

Of course, the meeting will include the "standard" meeting features:

- Availability of ARRL books from Rick, the book seller
- An opportunity to join UARC or renew your membership
- An opportunity to join ARRL or renew your membership
- The chance to meet face-to-face the people you talk to on the air
- The "Meeting after the meeting": A chance to enjoy pizza or other gastronomic delights with other hams. It happens at Litza's Pizza, 716 E. 400 South.
- The "Meeting *before* the meeting": A similar get-together for those who can leave work early enough to get there by 5:15 P.M. It is held at "The Village Inn," 910 E. 400 South in Salt Lake City.

Latest News

Our Cover

Our cover this month features Dave Christensen, KD7UM, the presenter at our September meeting, showing an old-fashioned hydrometer used to assess the condition of the cells in lead-acid batteries. Dave's talk was about different kinds of batteries, their advantages and disadvantages and the situations where they are appropriate. (*Thanks to Ron Speirs, K7RLS for the photo.*)

Swaptoberfest

The last of the fall swap meets is coming up on Saturday, October 12, in Logan. This annual event, known as the "Swaptoberfest" will take place at the Bridgerland Applied Technology College, West Campus, 1410 N. 1000 West, in Logan, Utah. Enter through the east door.

The event will run from 8 A.M. until noon. Those that need to set up displays of gear for sale may start setting up as early as 7 A.M.

One system that will be available for talk-in uses the 147.26 repeater covering areas west of Cache Valley and 146.72 once one has entered Cache Valley. Both require a 103.5 PL tone.

For more information, check:

<https://barconline.org/swaptoberfest/>.

New Repeater Engineer

Our "Repeater Engineer," the one who is responsible for overseeing maintenance and upgrading of the UARC repeaters, has changed after decades of service by the same person. Randy Finch, K7SL, was instrumental in engineering the scheme used in the Farnsworth Peak 146.62 repeater where the transmitter and receiver are in different locations. In the late 1970's Randy built many of the homebrew units

that took care of control, audio processing, and logic that the repeater required. He was present in the fall of 1980 when groups at the transmitter and receiver sites coordinated and first put the repeater on the air. Amazingly before anyone could make a test transmission, a ham in Snowville (near the Idaho border) was transmitting through the repeater.

Randy was also present during the first spring thunderstorm season when the repeater needed repair almost weekly until enough modifications were made to make it closer to lightning-proof.

Randy is now living in Price and is not in a good position to do regular maintenance in the Salt Lake Valley. He has asked to be relieved of his duties to UARC. To replace him, the Board of Directors nominated Clint Turner, KA7OEI, and his name was brought before the club at the September club meeting. He was voted in by acclamation.

Clint was actually the only reasonable choice. Clint, although not having an official title until now, has been the one doing most of the maintenance and upgrading of the UARC repeaters for several years. He designed and built most of the modules necessary for the '62 synchronous repeater system in which two repeaters with overlapping coverage are linked together and operate on the same frequency pair.

This combination, a "synchronous repeater," seems to be rare in the amateur radio world although it has been used in the Land Mobile Service for decades. It must include a scheme to decide which site's receiver has the best signal and send that audio to both repeaters' transmitters. It also requires a system for keeping the two transmitter frequencies very close to each other, generally within 20 Hz. Clint homebrewed gear and located an accurate frequency standard to meet both requirements. The 146.62 system is currently

the only synchronous system in Utah. We have heard rumors of such systems in other states, but haven't heard a detailed confirmation.

Our thanks to Clint for all his work and for taking on the new position.

UARC Library Update

Rick Gregory, KG7GOW, the club bookseller, maintains a library of donated books and publications. Members are welcome to check out materials for up to 30 days. The web page with the most recent information can be found at <http://user.xmission.com/~uarc/lib.html> or by finding the "Lending Library" link on the UARC home page (<http://www.utaharc.org/>) under the "About UARC" heading. Below are the current offerings.

Book Title	Pub. Year	ISBN	MSRP
200 Meters and Down: The Story of Amateur Radio	2018	9780872590014	15.95
73: Vertical, Beam, and Triangle Antennas	1970	n/a	5.50
A History of <i>QST</i> , Vol. 1: Amateur Radio Technology, 1915-2013	2013	9781625950031	34.95
A History of <i>QST</i> , Vol. 2: Advertising, 2015-2013	2013	9781625950048	34.95
ARRL Digital Technology for Emergency Communications Course (CD-ROM)	2008	9780872591240	49.95
ARRL RFI Book: Practical Cures for Radio Frequency Interference, 3 rd Ed.	2010	9780872590915	29.95
ComTrain's Tribute to Safety: Tower Climbing Safety and Rescue, 4 th Ed.	1997	n/a	29.95
Ham Radio for the New Ham: What to do the minute you get your ... license	2019	97810914021719.99	9.99
Introduction to Radio Frequency Design	1982	0872594920	39.95
Microwave Know How for the Radio Amateur	2010	978190508656621.95	21.95
Microwave Projects 2	2005	9781905086092	29.95
Power Supply Handbook	2006	9781905086214	29.95
PR-101: ARRL Public Relations (CD-ROM)	2009	n/a	
Practical Radio Frequency Test & Measurement: A Technician's Handbook	2002	978075067161366.95	66.95
The Amateur Radio Mobile Handbook	2001	9781905086719	
The ARRL Antenna Book, 15 th Ed.	1988	0872592065	18.00
The ARRL Antenna Book, 19 th Ed.	2000	0872598047	30.00
The ARRL Antenna Compendium, Vol. 2	1989	0872592545	14.00
The ARRL Goes to Washington [CD-Rom (10-minute video)]	2005	n/a	
The ARRL Handbook for Radio Communications — 2005, 82 nd Ed.	2004	0872599280	39.95
The ARRL Handbook for Radio Communications — 2006, 83 rd Ed.	2005	0872599485	39.95
The ARRL Operating Manual for Radio Amateurs, 10 th Ed.	2012	9780872595965	34.95
The ARRL Operating Manual for Radio Amateurs, 8 th Ed.	2006	087259913229	25.95
Understanding Your Antenna Analyzer	2013	9780872592889	25.95

License Examination Schedule

Opportunities to test for new or upgraded amateur licenses

Date	Day	City	Contact Person	Phone
09/04/19	(Wed.)	Clearfield ⁵	Joe Girauda, N7JEH	(775) 777-4798
09/18/19	(Wed.)	Provo ⁵	Steve Whitehead, NV7V	(801) 465-3983
09/18/19	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
09/30/19	(Mon.)	Taylorsville ^{3,5}	Garth Wiscombe, W7PS	(801) 558-5936
10/02/19	(Wed.)	Ogden	Rick Morrison, W7RIK	(801) 791-9364
10/05/19	(Sat.)	Salt Lake City ^{1,4}	Gordon Smith, K7HFV	(801) 582-2438
10/12/19	(Sat.)	Hurricane ²	Gary O. Zabriskie, N7ARE	N/A
10/16/19	(Wed.)	Provo ⁵	Steve Whitehead, NV7V	(801) 465-3983
10/16/19	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
10/26/19	(Sat.)	Logan	Richard D. Elwood, KE7GYD	(435) 770-7050
10/28/19	(Mon.)	Taylorsville ^{3,5}	Garth Wiscombe, W7PS	(801) 558-5936
10/30/19	(Wed.)	Eagle Mountain	David A. Becar, KI6OSS	(909) 379-8015
11/13/19	(Wed.)	Provo ⁵	Steve Whitehead, NV7V	(801) 465-3983
11/20/19	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
11/25/19	(Mon.)	Taylorsville ^{3,5}	Garth Wiscombe, W7PS	(801) 558-5936

¹Preregistration required. Check with the contact person before the test session.

²More information at <http://www.dixieham.org/meetings.html>

³New location is the Taylorsville City Hall, 2600 Taylorsville Blvd, Room 110

⁴More information at <http://www.utaharc.org/Exams/>

⁵Preregister by going to <http://www.hamstudy.org/sessions/> and finding the session date.

More details at <http://user.xmission.com/~uarc/testinfo.html>



Quartzfest 2020

By Laird Severinsen, WB7TGP

Do you remember January 2019, the cold, snow, and inversions? You can plan ahead for next year and attend Quartzfest 2020 and escape the Utah winter for a week, or more. Held Sunday, January 19, through Saturday, January 25, in the Sonoran

Desert south of Quartzsite, Arizona, this is an annual event for ham radio enthusiasts, families, friends, or anyone with or without an Amateur Radio License. You have the option to arrive,

spend as much time as you can, and leave when you like.

Quartzfest is held on BLM land and camping is free for 14 days. The event is totally free being supported entirely by volunteers. Your expense is getting there and taking what you need (food, clothes, water, shelter, etc.) to enjoy activities for the week. This is a popular winter hamfest event and continues to grow.

Most important, this weeklong event is not just for hams. Along with amateur radio topics such as propagation, antennas, digital modes, logging programs, that first contact, etc., you will find classes on gold panning, desert history, ecology and geography, beading, genealogy, a 4X4 off-road trip in the desert, and other activities. Spend time relaxing in the desert sun. If you like star gazing, the night sky is awash with stars. Listen to guest speakers on a variety of ham and non-ham topics, watch a movie, join the potluck dinner, or attend Hootenanny Night. For historical or sightseeing activity in the area, the town of Quartzsite has visitor information.

Are you into preparedness or want to see how well prepared you are to hold out in the event of an emergency or disaster? Desert “Boondocking” for a week will test you. There is no commercial power, no restrooms (except porta-potties for those in tents), and no running water. But as far as you can see, no matter where you look, there are people and groups camping and surviving in the desert. Typical and welcome at Quartzfest are RV’s, tents, trailers, vans, cars, or other types of camping. Generators, batteries, and solar power are used everywhere providing a great opportunity to observe and learn about being off the grid. You can be as busy as you like, but guaranteed the week will pass quickly.

This is a fun week to camp in the desert to learn, share, meet other hams from around the country, and participate in a variety of activities. Attending as a Utah contingent would be a fun activity. Additional information may be found at www.quartzfest.org.

Note: I do not represent Quartzfest but have attended and enjoy this event.

ARRL Seeks New Ways to be Heard in Congress

From the ARRL Letter

ARRL’s Ad Hoc Legislative Advisory Committee will meet with several members of Congress later this month in Washington to introduce new Committee members, reacquaint the lawmakers with Amateur Radio’s most-pressing issues, seek their input on the best ways to achieve ARRL’s objectives in Congress, and request their continuing support. Committee members have completed a comprehensive analysis of Amateur Radio Parity Act deficiencies for dissemination to Amateur Radio’s backers on The Hill. The panel now is following up on this process with the meetings later this month [September].

The Committee has contracted with The Keelen Group to provide advice and recommendations regarding ARRL’s legislative relationships. Keelen Group advisors also will aid in organizing and guiding the meetings between ARRL representatives and key congressional allies in support of Amateur Radio initiatives.

On June 12, the Legislative Advisory Committee held the first of a series of meetings in DC with ARRL Washington Counsel David Siddall, K3ZJ, The Keelen Group, and a small contingent of radio amateurs associated with various governmental and nongovernmental partners to solicit their perspectives and assistance in charting a future course of action.

The process of analyzing and clarifying ARRL's aims began when the Committee was reconstituted with new members at the ARRL Board of Directors' January meeting. The Board had determined a need to "review, reexamine, and reappraise the ARRL's regulatory and legislative policy with regard to private land-use restrictions," with the aim of renewing, continuing, and strengthening ARRL's effort to achieve relief from such restrictions.

There seems to be no countervailing policy that could justify arbitrary conditions, covenants and restrictions," Tiemstra said. "Indeed, public policy should clearly favor the needs of the Amateur Radio operator."

Amateur Radio's role in public service and

Member of the Month

Tammy Aho, KF7OGP

By Linda Reeder, N7HVF

This month we are featuring Tammy Aho, KF7OCP. Tammy became interested in amateur radio when she was watching movies about it. She thought, "What a wonderful hobby this would be!" Being licensed would enable her to communicate with people all around the world. Tammy thought it would be great to communicate with the space station and she would also like to help out with emergency communications. She took an amateur radio class at the BYU law library. Tammy even attended a seminar in Provo on how amateur radio works. However, she found she had not realized the intensity involved in learning about amateur radio.

Tammy received her Technician license in 2011. She said it was hard because she didn't have an Elmer to help her along. So amateur radio was put on the back burner for awhile. Tammy's education, career, and family really kept her busy.

In February, 2019, Tammy's brother, Eric, KJ7GSL, a former pilot, received his Technician. In June Eric obtained his General license. Tammy said that her brother's interest in amateur radio is the mechanics.

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emergency communication will be the Committee's strongest argument in seeking relief from private land-use restrictions that limit amateurs' ability to operate effectively.

Once again Tammy's interest in amateur radio was in motion. It was good to exchange ideas with Eric.

Tammy has an ST60 Yaesu hand-held transceiver. She started listening to conversations on the repeaters and really enjoyed this, especially when they were talking about upcoming events such as Field Day. Tammy and her brother attended their first Utah Amateur Radio Club meeting and became members. Then they Attended Field Day at Payson Lakes. Tammy was really intrigued with how all of the radios were hooked up. It was interesting listening to all of the contacts that were made. She is looking forward to obtaining her General class license so she can talk on the low bands. Tammy wants to communicate on amateur radio while traveling.

Tammy is a high school teacher. She teaches biology and health. Tammy's son, Jeremy, is a major in the United States Army.

Tammy, welcome to amateur radio. We wish you all of the best in your endeavors.