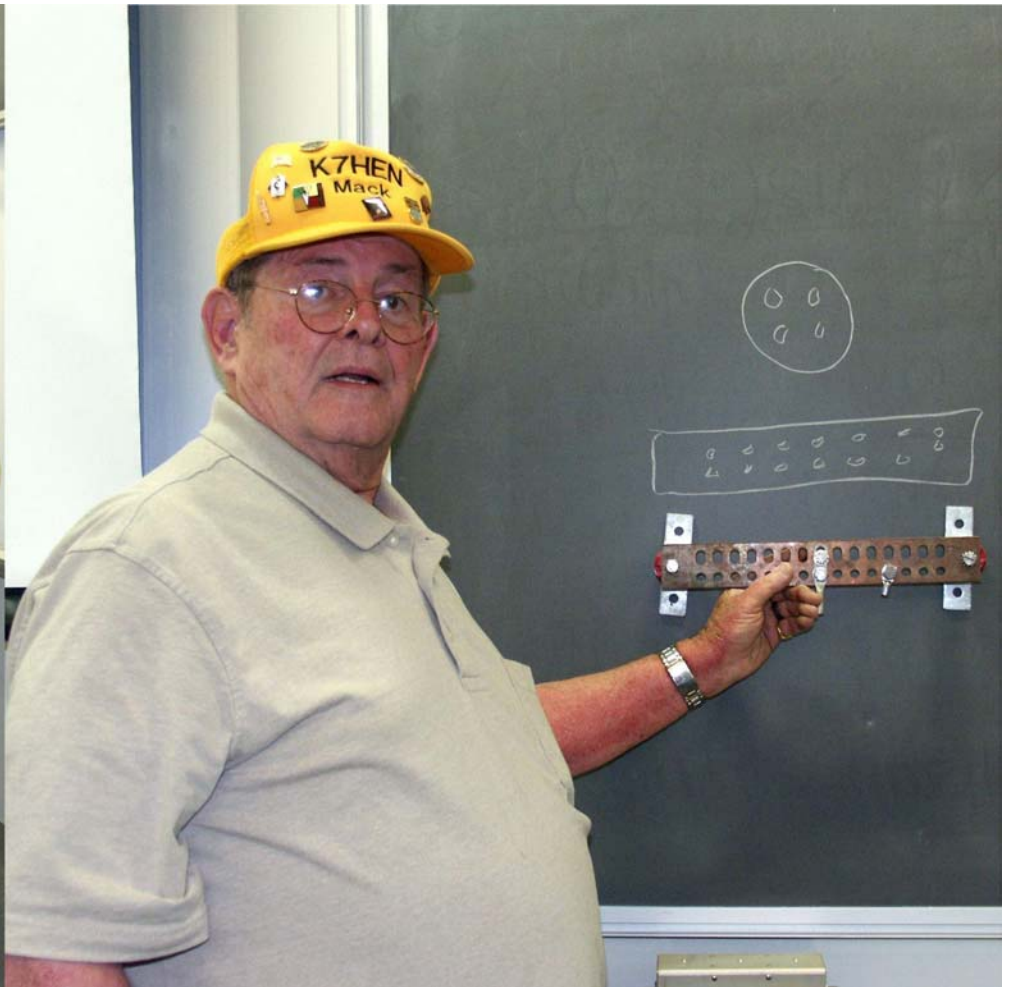


The *Microvolt*

February, 2015



Prologue

Publication: *The Microvolt* (USPS 075-430) is the official publication of the Utah Amateur Radio Club, Incorporated, 699 E. South Temple Ste 100, Salt Lake City, UT 84102-1282. It is published monthly except August. Subscription is included with club membership at \$17 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 Dick Keddington, 5474 Hews Place, Taylorsville, UT, 84129-1416.

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: Dick Keddington, 5474 Hews Place, Taylorsville, UT, 84129-1416.

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 \$17 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 \$17 may obtain a membership without a *Microvolt* subscription for \$9. Send dues to the Club Secretary: Dick Keddington, KD7TDZ, 5474 Hews Place, Taylorsville, UT 84129-1416.

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 2015 Board

President: Clint Turner, KA7OEI	801 566-4497
Executive VP: Rick Asper, AC7RA	801 865-1693
Vice Pres: Brett Sutherland, N7KG	801 298-5399
Secretary: Dick Keddington, KD7TDZ	801 274-9638
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<i>Microvolt</i> Editor: Gordon Smith, K7HFV	801 582-2438
Asst. <i>Microvolt</i> Editor: Mary Alexander, KF7QVL	801 347-3220
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Imm. Past Pres: Linda Reeder, N7HVF	801 364-7006

Committee Chairpersons and Members

“Book Lady”: Brett Sutherland, N7KG	801 298-5399
Historian: Ron Speirs, K7RLS	801 904-3587
Field Day Chair: (To be determined)	
License Trustee: Brett Sutherland, N7KG	801 298-5399
Repeater Engineer: Randy Finch, K7SL	801 556-7565
ATV 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://user.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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February Meeting: Using an Antenna Analyzer

Antenna analyzers have become common over the last decade or two, and UARC even has one available for members to borrow. But does everyone know how to use one? Our February 12 meeting will be an opportunity to watch a live demonstration to find out how!

Morris Farmer, AD7SR, and friends will be demonstrating how to use the analyzer and other tools to tune simple antennas. These tools can give us a lot of helpful information besides just the SWR on our feedline. Come and see how it's all done.

The meeting will be on Thursday, February 12, at 7:30 P.M. in room 1230 (the “Stockham” classroom) of the Warnock Engineering Building.

UARC meetings are held on the second Thursday of each month at 7:30 P.M., in the Warnock Engineering Building on the University of Utah campus. The spring, 2015, meetings will be in room 1250, “the Stockham classroom” on the ground floor. See the [map](http://user.xmission.com/~uarc/meetmap.html) at <http://user.xmission.com/~uarc/meetmap.html> for information on finding the building. The room number varies depending on availability.

Of course, the meeting will include the “standard” meeting features:

- Availability of ARRL books from Brett, the “book lady”
- 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. The February get-together will be at “The Village Inn,” 910 E. 400 South in Salt Lake City.

Latest News

Our Cover

Our cover this month is from our January meeting where Mack Gilbert, K7HEN, told us about tower safety and grounding practices. Mack is shown on

the right telling us about the use of grounding blocks. On the left, Mel Parkes, NM7P, a volunteer from the audience, models the latest government-approved climbing harness. Thanks to K7RLS for the photos.

VHF Society Swap Meet

The Utah VHF Society will be holding its annual business meeting and swap meet on Saturday, February 28, at 9 A.M. This event is typically the largest amateur radio swap meet in the state. Location is the “Legacy Event Center” in the Davis County Fairgrounds, 151 S. 1100 West, Farmington, Utah. For those coming from the south, take the Farmington exit from I-15, turn left on State Street, continue across the freeway overpass, turn left on 1100 West, and the fairgrounds will appear shortly on the left.

Admission is free to members of the VHF Society (or those who choose to join at the same time) and otherwise is \$5.00 for adults and \$3.00 for those 12 or under.

The Utah VHF Society gives financial support to many repeaters throughout Utah and provides frequency coordination for the state. Dues are \$12 per year and may be paid by mail or via PayPal. (Details are on the Society’s web site at <http://www.utahvhfs.org/>.) Memberships run through the calendar year, so many will be expiring at the beginning of 2015.

Each year the Society publishes a directory which includes contact information for all members as well as details about all the repeaters in Utah. It includes maps of some of the linked systems and bandplan information. It is the definitive guide to FM operation in Utah. Directories will be given out at the swap meet to everyone who is a current member or who joins at the event. Everyone is encouraged to join well in advance so their names can appear in this year’s edition.

Division Convention Jul 31 - Aug 2

This year is Utah’s turn to host the ARRL Rocky Mountain Division Convention. The Rocky Mountain Division includes the states of Colorado, New Mexico, Utah, and Wyoming, so

this year Utah will see visitors from the other three.

The event will be held at Ruby’s Inn, a short distance from the entrance to Bryce Canyon National Park. The convention typically includes swap tables, seminars, contests, awards, manufacturers’ displays, a keynote speaker, and the famous midnight initiation into the *Order of the Wouff Hong*.

The event’s web site is at:

<http://www.utahhamfest.com>. It will contain more information as the date draws near.

New Mailing List

Tyler Griffiths, N7UWX, from the Logan area has started a new mailing list that he hopes will be helpful to hams statewide. He writes:

“With the apparent death of the old utahham@yahoo.com I have created a new Utah Ham email group so we can share Utah ham radio news and announcements, periodic reminders about special Events and Meetings. It’s at utah-ham@yahoo.com

“Uses would be for Hamfest announcements, club meeting announcements, special event announcements, and anything ham radio news oriented.

“This group will be open but require approval to join and messages will not be moderated unless there becomes a problem.

“Please feel free to pass this along to any ham, ham club or club newsletter so we can get it decimated throughout the state of Utah.

“To join: you can search Yahoo Groups for: ‘utah-ham,’ send an email to:

utah-ham-subscribe@yahoo.com

or follow this link:

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<https://groups.yahoo.com/neo/groups/utah-ham/info>

the committee, contact one of the officers. (See the inside front cover for a list.)

“If you have questions please feel free to ask!”
—Tyler Griffiths, N7UWX

Parking at the “U”

Field Day Help Needed

A reminder that until UARC’s June meeting you can ignore signs on the parking lots at the University of Utah saying that parking rules are enforced until 8 P.M. As soon as the officers find out (we hope before the June meeting) we will announce where you will need to park to avoid being ticketed.

We continue to be in need of folks to help plan our entry in the national Field Day contest coming up on June 27 and 28. We will be making contacts around the country for 24 hours from a portable station near Payson Lakes. If you would like to join

UARC Annual Financial Statement

1-1-2014 through 12-31-2014

INCOME		EXPENSES	
ARRL Dues	813.00	Administrative	102.22
Book Sales	2,760.85	ARRL Memberships	813.00
Donation	531.00	Bank Charge	8.00
Dues	4,441.00	Books	2,814.75
Int Inc	150.92	Capital Equipment	3,530.33
Steak Fry Income	790.00	Field Day	629.77
		Insurance	200.00
TOTAL INCOME	9,486.77	Meeting Expense	357.00
		Microvolt	3,878.00
		PayPal Fees	105.12
		Repeater	417.32
		Square Inc Fees	17.19
		Steak Fry	845.88
		TOTAL EXPENSES	13,718.58
		OVERALL TOTAL	-4,231.81

Treasurer’s Comments

UARC had two extraordinary capital equipment expenses for 2014. First was the purchase and construction of a new “calf” trailer for our generator and short tower. We sold the old trailer and generator resulting in a net expenditure of \$1359.38. The second expense was the refurbishment of the Lake Mountain (146.76) repeater. We purchased one new antenna and hired

professional tower climbers to do the tower work. The cost for this refurbishment was \$2170.95. We received slightly over \$500 in donations toward the cost of this work. Subtracting those expenses, we spent about \$700 more this year than we took in. Please encourage your friends to join UARC and support our club.

License Examination Schedule

Opportunities to test for new or upgraded amateur licenses

Date	Day	City	Contact Person	Phone
02/04/15	(Wed.)	Ogden	Rick Morrison, W7RIK	(801) 791-9364
02/07/15	(Sat.)	Salt Lake City ^{1,4}	Gordon Smith, K7HFV	(801) 582-2438
02/07/15	(Sat.)	Logan	Richard D. Elwood, KE7GYD	(435) 753-4360
02/14/15	(Sat.)	Hurricane ²	Gary O. Zabriskie, N7ARE	N/A
02/18/15	(Wed.)	Provo	Steve Whitehead, NV7V	(801) 465-3983
02/18/15	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
02/24/15	(Wed.)	Salt Lake City ³	Eugene McWherter, N7OVT	(801) 541-1871
03/07/15	(Sat.)	Logan	Richard D. Elwood, KE7GYD	(435) 753-4360
03/18/15	(Wed.)	Provo	Steve Whitehead, NV7V	(801) 465-3983
03/18/15	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
03/31/15	(Tue.)	Salt Lake City ³	Eugene McWherter, N7OVT	(801) 541-1871

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

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

³New location: Senior Center at the Columbus Center, 2530 S. 500 East

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

Check <http://user.xmission.com/~uarc/testinfo.html> for further exam information.

Amateur Radio Blogs

By Clint Turner, KA7OEI, UARC President

While there are many Amateur Radio blogs out there, there are a few of them that have the qualities of both endurance and breadth of topic. Amongst the many blogs that may fall into this category are the following:

One of the most prolific Amateur Radio bloggers is Dan, KB6NU (<http://www.kb6nu.com>) who has been at it for a number of years, has a wide following and covers a wide variety of topics from regulation to operating practices to things technical.

Perhaps less prolific in his posts — but not less interesting — are the posts of Dave, AA7EE (<https://aa7ee.wordpress.com>) who, via the many pictures posted there, demonstrates that beauty, simplicity, form and function can come together in projects that anyone can build and

use! Dave also gives practical, down-to-earth advice to those who may be interested in building their own projects from scratch but haven't yet taken the plunge — and why not having done it before is the perfect excuse to try!

Another blog is that of Mark, K6HX (<http://brainwagon.org>). His posts tend more toward the technical/nerdy side — particularly about computers — than the ham radio side, but there is plenty of overlap. One of the things that I like about this blog is that it is an exemplar of curiosity. Recent posts have covered everything from sunspots to ships-in-bottles to single-board computers to synthesizers for small, homebrew rigs.

One of my favorite blogs is that of Bill, N2CWR (<http://soldersmoke.blogspot.com>). A career

diplomat by profession and having lived abroad for much of his professional life has given him a unique outlook on operating and things technical, which is to say that he is always discovering things that he didn't previously know — sometimes by making mistakes, usually by making friends — and when he does, he'll be sure to post about it. Bill also does a long-running podcast — but more on that in a later installment.

Finally, a number of hams' blogs are aggregated

on <http://www.amateurradio.com> and there you can find several postings per day on all sorts of topics.

The above list is not intended to be complete as hundreds of blogs exist and have come and gone. This, like many of the above blogs, may be followed via the above links or with RSS feeds.

Next time - a few amateur radio related podcasts.

Learning About Repeaters

We frequently hear QSO's on FM repeaters that seem to tell us that the participants don't quite understand what repeaters are and how they work.. There are statements like:

"I couldn't understand you through the noise, but your signal is strong because it's lighting all my bars."

(On the intertie) "Wow, I'm getting all the way to Las Vegas? This H-T gets out a lot better than I thought it would!"

"I'm surprised I can hear you this well, because there's a mountain between us."

"What's that beeping sound I keep hearing?"

The February issue of *QST* magazine has a great article that could help the newcomer understand some of the peculiarities of operating through repeaters, a kind of operation that probably makes up a large part of newcomers' QSOs. The problem is, though, that folks who haven't learned the basics of repeaters probably haven't joined ARRL to receive *QST* either. So maybe if you've been elmering a newcomer or two, you might let them borrow your latest *QST* and recommend the article "Analog FM Repeaters — an Overview" by Steve Sant Andrea, AG1YK.

The article tells the basics and includes a block diagram of the typical repeater.

There are a couple of small errors that probably won't be an issue for the newcomer, but that your editor couldn't help pointing out.

The article says that FCC requires repeaters to have a three-minute timer. In fact most repeaters do have such a timer and it's a very good idea to prevent possible lockup, but there's no such requirement in Part 97. The confusion probably comes from 97.213(b) which says that a station may be operated under "telecommand" provided that:

"Provisions are incorporated to limit transmissions to a period of no more than 3 minutes *in the event of malfunction of the control link.*" (Emphasis mine.)

In other words, if your repeater (or any other kind of station) is operated over a control link, the station must detect failure of the control link within three minutes and shut down the transmitter until the link is restored. Thus, if your link receive antenna blows down, you're prevented from having a transmitter on the air with no way to shut it off. That's particularly important for a mountaintop repeater site where access may require a three-day ski trip!

The author also makes it sound as if all repeaters have a single antenna for transmitting and receiving. Most do, but not all. Separate antennas can work better in some situations. Both approaches have advantages and disadvantages.

Nevertheless, the article could be a big help to most newcomers getting their first taste of FM operation, and may even clear up some misconceptions by folks that have been around for awhile.

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Member of the Month

Seth Edwards, N0SRE

By Linda Reeder, N7HVF

This month we are featuring Seth Edwards N0SRE. Seth has been in amateur radio since 2010 and has his General class license. It was his father, Shon, who got him interested in amateur radio. Seth's dad would let him talk third-party on his station. Seth says this is a great way to communicate. Seth's first and favorite contact was Venus, KB7FXB.

Seth is really interested in learning the Morse Code. It is his goal to be able to send and receive the code at 20 words per minute before this year ends. The reason he likes the code so much is that it may be the only way to communicate when there is an emergency, and you won't be able to get into the voice bands. This is because the CW bands are more narrow than the voice bands and sometimes CW is the only way you can get through when band conditions are bad.

Seth says their family is working on getting ward members interested in getting their amateur radio licenses. Seth is helping his brother, James, teach a Technician class coming up in February. Seth said many of the ward members are really interested in getting their amateur radio licenses for emergency purposes. Seth's family is very active in the emergency response team which is affiliated with the Church of Jesus Christ of Latter-Day Saints. Seth is also involved in RACES. Seth is a member

of UARC and the Davis County Amateur Radio Club.

Seth enjoys Field Day and has participated in the Davis County Radio Club's Field Day. However, he won't be going to a club Field Day this year because that is the week that the family will be going to their family cabin in Bedford, Wyoming. But they will be taking ham radio equipment with them and seeing how many Field Day contacts they can make. Maybe they will be able to make lots of Field Day CW contacts.

Seth is in the eighth grade and attends Legacy Junior High School. His favorite subjects are English, band, and science. He doesn't like math. In band he plays the tuba, which he really enjoys.

Seth is involved in The National Academics. Legacy Junior High School competes with other junior high schools. They have trivia questions dealing with science, history and mathematics. They practice every Thursday. They will be competing with West Point Junior High School on Monday, January 12. They do not win prizes but compete for fun and learning. Other hobbies Seth enjoys are flying ARC helicopter, playing his tuba, playing chess and learning to speak Spanish.

Seth, we wish you the best in all of your endeavors.