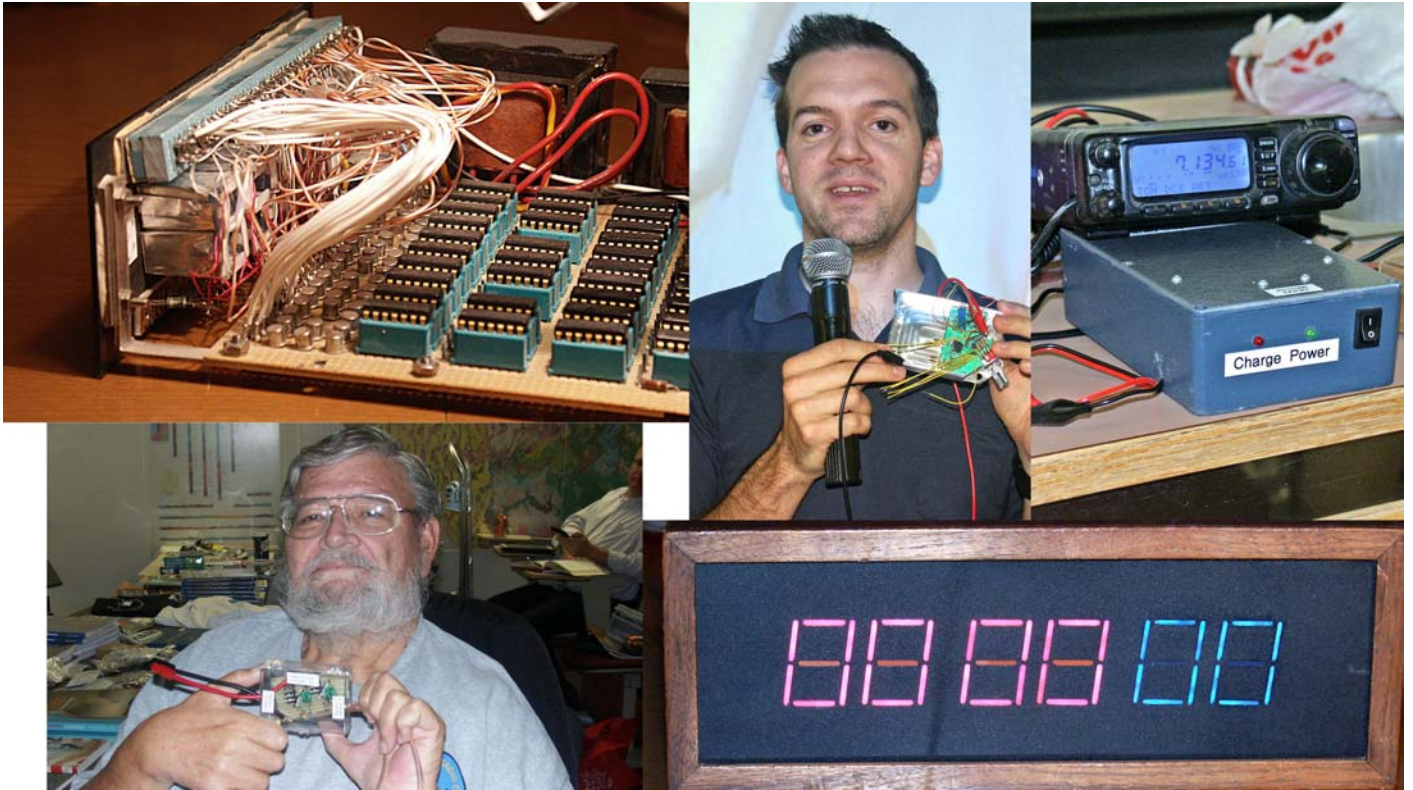


The *Microvolt*

November, 2015



Homebrew Night Projects

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.

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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://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>

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The Microvolt

The Official Publication of the Utah Amateur Radio Club, Salt Lake City, Utah
Volume 58, Issue 10, November, 2015

November Meeting: Digital Voice Modes

Have you been hearing about strange modes? Cryptic names like D-Star, System Fusion, NXDN, NEXEDGE, P25, and DMR? Have you wondered how they compared to the old standbys like SSB, FM, and CW? The November 12 UARC meeting will be the chance to find out.

Christ Andrist, KC7WSU; and Roger Davies, N6DVZ, will be telling us all about the current batch of digital voice modes. What kind of radio do you need to operate them? What are their individual strengths and weaknesses? Are they compatible with one another? How do they compare to the familiar analog modes? All these will be addressed.

The November meeting is also the time when the floor is open for nominations for 2016 officers. If you would like to help with UARC administration, this will be a great time to volunteer. If you have some good suggestions for others who would do a good job, talk them into the idea and be prepared to nominate them.

The meeting will be on Thursday, November 12, at 7:30 P.M. in room L103 of the Warnock Engineering Building. To reach the “L” three-digit numbered rooms, take the elevator in the southwest corner of the main floor down to level “L1.” (The elevators near the east entrance don't go there!)

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 fall, 2015, meetings will be in room L103 on level “L1.” See the map at <http://user.xmission.com/~uarc/meetmap.html> for information on finding the building. The room number varies depending on availability. Parking lots circled in green are ones where you can park without needing a University permit.

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 November 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 a sample of Ron Speirs' photos from Homebrew Night at our October meeting. In the upper left is the back of Ron's clock. This was a project built long ago when you couldn't just buy a clock IC but needed to do the logic with individual gates, counters, and flip-flops. Ron resurrected it by replacing the old incandescent lamps behind each segment with LEDs. The resulting display is on the lower right.

In the top center is Michael Colton, KE7HIA, showing a board from his "Pocket SDR," a complete transceiver using software-defined-radio technology. More information can be found at: https://www.kickstarter.com/projects/1703258614/psdr-pocket-hf-sdr-transceiver-with-vna-and-gps?ref=nav_search.

In the upper right is a project built by our president, Clint Turner, KA7OEI. It allows a 100-watt HF SSB rig to be powered by 10 D-cells. The secret is combining the D-cells with the super capacitors that are available these days, in this case six 350F 2.7V capacitors in series. The capacitors provide the capability of supplying high current spikes, needed for voice peaks on single sideband. Clint points out "You can probably get D-cells in Afghanistan."

In the lower left, one of our program chairpersons, Morris Farmer, AD7SR, shows a board using a state of the art IC to control power FETs and create "the ideal diode." One can use diodes to isolate batteries being charged from a common source so the load on one does not discharge another. The problem is that the voltage drop across the diodes prevents the batteries from charging fully. The "ideal diode" (one with negligible voltage drop) solves the problem.

To see the whole set of Ron's photos, go to: <http://user.xmission.com/~uarc/pichb15.html>.

Dues Increase Approved

At the regular UARC meeting on Thursday, October 8, the members present voted to increase UARC annual dues as proposed by the Board of Directors. The increase was proposed to replenish reserves recently used for new antennas for the club's 146.76 MHz repeater and allow for new projects such as a remote-controlled HF station for use by UARC members.

Provisions of the change include:

- Starting January 1, 2016, annual dues for regular members will become \$20.
- Starting January 1, 2016, annual dues for additional family members will become \$12.
- A lifetime membership will become available at 25 times the annual dues.
- Until January 1, 2016, it will be possible to pay dues for any number of years in advance at the old rate of \$17 per year.

Wasatch Front Hamfest for 2016

Utah's ARRL Section Manager, Mel Parkes, NM7P, has announced that during summer of 2016 there will be a hamfest along the Wasatch Front. After talking with hams from various Utah clubs, Mel is convinced that a hamfest near Utah's population center will draw a larger attendance than the recent hamfests near Bryce Canyon.

(Utah has been host to the Rocky Mountain Division Convention every three to four years and has held these events at Ruby's Inn near Bryce Canyon. In 2016 it will be Colorado's turn to host the Division Convention. The event will be held at the Keystone Conference Center near Dillon, Colorado, May 13-15. See:

www.hamconcolorado.org for details.)

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The Utah Hamfest will likely include the usual kinds of hamfest events: seminars, contests, swap tables, awards, etc. A venue for the event has been arranged. The dates have yet to be determined.

Mel is looking for volunteers to help plan the event. Anyone interested should contact Mel at nm7p@msn.com or his office phone: (801) 581-8766.

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Write Your Congressman

The Amateur Radio Parity Act of 2015, a measure which would reduce the problem of antenna restrictions under land covenants, has now passed the milestone of 100 co-sponsors in the U.S. House of Representatives. However, there is still not a single co-sponsor from Utah. In addition, the Community Associations Institute (CAI), which represents home owners associations, is about to meet with Congressional representatives, and is strongly opposed to the measure. If you want to keep the right to erect antennas, please contact your Representative and/or Senators.

ARRL has a great web page at <http://www.arrl.org/amateur-radio-parity-act> which suggests talking points, has a sample letter, and tells how best to get your message to your Congressman. Direct mail is *not* the best option. The site also has a video, *Clarity on Parity*, to help dispell unfounded beliefs on the part of HOAs. Please help this important cause.

Member of the Month

Dennis Nelson, N7FOD

By Linda Reeder, N7HVF

This month we are featuring Dennis Nelson, N7FOD. Dennis was first licensed in 1953 when he was in the sixth grade. His first call sign was WN7ESK. Shortly after that Dennis obtained his General class license. Back in those days, the Novice license had a term of one year and was not renewable. If you didn't upgrade you would have to start all over again. It was just a couple of years ago when Dennis obtained his Extra Class license. He took the upgrade class that Ron Speirs, K7RLS, and Morris Farmer, AD7SR, were teaching. It was Dennis's friends that he talks to on 3,905 kHz who convinced him to get his Extra Class license.

It was Ted James, who was three years older than Dennis, and George Lawrence, WA4FAT, who got Dennis interested in amateur radio in 1953. Dennis was in the sixth grade. Ted James would invite them over to his house and they would build electronic equipment. Dennis loves to build. He has built one black and white and two color TVs. Dennis rebuilds old cars and puts them in car shows. Dennis also built test meters

Dennis's first radio was a Hallicrafters. Dennis now has a Heathkit 104 that he operates at his house. Dennis also has a Kenwood TS-430 which he has had since 1978. He says it still works just fine and he uses it in his vehicle when he travels. This was around the time he obtained his current ham call, N7FOD. Dennis said at first he didn't get on the air much and just listened, but that soon changed.

Dennis is a wholesale used car dealer and that requires lots of traveling. He used to have to go to California a lot. In 1978 Dennis made 75 contacts using the Morse Code. During his travels Dennis has worked all states. In 1973 Dennis started working for the county in planning, building inspection, and zoning. He worked this job for 28 years.

Dennis and his wife, Georgie, have been married for 55 years. They have six grown children: two girls and four boys. Dennis says none of them have their ham radio licenses.

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Dennis is a member of UARC and the ARRL. Other hobbies that Dennis enjoys are model trains and flying remote helicopters.

Dennis, congratulations on all of your accomplishments.

