

The *Microvolt*

May, 2017



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 \$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 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 \$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: 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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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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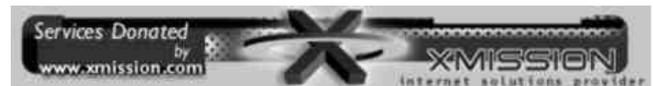
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IRLP Information

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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May Meeting: HF and VHF Digital Modes

There's been a revolution in ham radio ever since PCs became powerful enough to do digital signal processing at audio frequencies. There is now a whole suite of modes which allow two computers to communicate with each other over long distances on the amateur bands.

Our speaker at the UARC meeting on May 11 is Jeff McGrath, N1SC, who has been very active in digital modes and has made a well-received presentation at the Great Salt Lake Hamfest and at the Digital Communications Conference.

With a single interface to a single sideband transceiver one can operate on a variety of modes by simply installing the correct software, most of which is available at no cost. The suite of modes includes ones which are great for keyboard-to-keyboard QSOs, ones that will work under very poor band conditions, ones that take up only a sliver of bandwidth, ones that are particularly good for long paths, and ones which will let a ham be heard around the world while running five watts or less. There are modes which are perfect for obscure VHF modes such as meteor scatter and moonbounce.

Jeff will tell us what you need to get started and where to find the appropriate software.

The meeting will take place at 7:30 P.M. on Thursday, May 11, in room 1230 (the "Duke" 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 meeting, during the University's spring semester of 2017, will be in room 1230, the "Duke" classroom. To find the room, if you enter through the main (east) door, just go straight down the hall to the last classroom on the right. See the map at <http://user.xmission.com/~uarc/meetmap.html> for information on finding the building. (The room number varies through the year depending on availability.)

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

- Availability of ARRL books from Brett or John, the "book ladies"
- 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 Ron Wilcox, KF7ZN, the featured speaker at our April UARC meeting. Ron's presentation was on "History of Amateur Radio from a DX Perspective.". (*Thanks to K7RLS for the photo.*)

Field Day: June 24 & 25

It's time to be thinking about Field Day! One of UARC's favorite activities each year comes near the end of June when, along with thousands of other amateurs across the country, we take our radios to places in the great outdoors and try to make lots of contacts.

Field Day is a national operating event sponsored by the American Radio Relay League (ARRL). Portable and mobile stations try to work as many other stations as possible. Those who are not mobile or portable try to work those who *are*. For about 27 hours the 80- through 10-meter bands become essentially contest bands, with wall-to-wall activity by operators calling "CQ Field Day" on voice, CW, and digital modes.

UARC is planning to enter, again this year, with three stations set up near Payson Lakes on the Mount Nebo Scenic Loop. We hope we can find enough operators to man all three stations for 24 hours. That means we need you. Most of the contacts will be on the HF bands, but that doesn't mean you have to have a General class license to participate. There will be enough people holding higher class licenses that someone can be in tent with you and act as the official control operator, but you can do the actual talking, typing, or keying, and operate the PTT button.

If that seems too intimidating, you can start out logging while someone else operates. The contacts come in fast enough that it often takes a second

person to make sure they are all recorded correctly in a computer.

In addition to the chance to operate a fairly well-equipped HF station, you can also watch and help with the setup. We will go through tuning the Yagi, raising the tower, hooking up feedlines and antenna rotors, and trouble shooting in the rare event that everything doesn't work the first time. When you're ready to set up your own station, you will know all the steps.

The point of setting up stations in out-of-the-way places is really emergency preparedness. If a disaster hit, taking out our long distance phone service, we would know that, in a short time, we could set up communication with Denver, Washington D.C., or Timbuktu, and let the world know of our needs. We would not need utilities for power, telephone lines, or fiber-optic cable.

Field Day originated back in the 1930's and has, for many years, been the most popular operating event of the year for hams in the U.S. and Canada. It gets more participants than popular contests such as Sweepstakes, and the CQ WorldWide DX contest. It is officially not a contest, but has a lot of contest-like characteristics. It is administered by the League's contest department, operators compete for points, the same station can be worked on multiple bands and modes for more points, and the club, group, or individual who gets the most points is usually very proud.

For rules and more details about the activity, see: <http://www.arrl.org/field-day>.

Steak-Fry: July 15

It's time to start thinking about UARC's annual Steak-Fry. This year's event will take place on Saturday, July 15, at our usual location: The Spruces Campground in Big Cottonwood Canyon. The May meeting will be the first of only two chances to sign

up for the event at a regular UARC meeting. Price is yet to be determined at this writing but will be in the neighborhood of \$15.

Other chances to get a reservation will be at the Club's Field Day entry and via mail.

WIMU '17: June 16-18

After a number of years of non-existence, the Wyoming-Idaho-Montana-Utah (WIMU) Hamfest will be held this year at Garden City, Utah. John Jacobs, W7DBO, writes:

"This great traditional hamfest will be held in Bear Lake, Utah, June 16-18, 2017. Bear Lake is a great destination point for families to vacation while attending the hamfest. Activities will be held at the Garden City Conference Center and Park. Activities include: Outdoor vendors, swap meet, women and youth/child activities, fox hunt, and special event station. Much more is planned for the hamfest."

Information about accommodations is now on the WIMU website. For that and other hamfest details, see: <http://www.wimuhamfest.org/>.

From The Clipboard of the Editor

I was listening to a QSO on the club's 146.76 repeater when I heard something strange. Someone was keying up a transmitter while someone else was already transmitting. The newcomer did this repeatedly and I could make out that he was sending a touchtone sequence, possibly the one to activate IRLP.

"Oh gosh," I thought, "another goofball just trying to make himself annoying." But I listened further I realized his transmissions were not at all well-synchronized with the station he was doubling with. If he was trying to be annoying, he wasn't very proficient at it. It sounded more like he was not even hearing that the repeater was already in use. With that I was pretty sure I knew what the problem was: the operator was trying to use too many features of his transceiver.

Rocky Mountain Division Convention May 26-28

The 2017 ARRL Rocky Mountain Division Convention will be held on Memorial Day weekend, May 26-28 in Cody Wyoming at the Cody Holiday Inn. It is expected to draw attendees from the four states which compose the Rocky Mountain Division: Colorado, New Mexico, Wyoming, and Utah.

There had been some worry that planning for the convention had gone awry when the opening date for pre-registration came and went with no details appearing on the web site. However, Division Director Dwayne Allen, WY7FD, recently visited the Cody group and assures us that plans are moving ahead.

For more information see the convention web site at wyominghamcon.org plus the Facebook page at: <https://www.facebook.com/groups/246764465763764/>

Everyone who set up a VHF radio for repeater use is probably familiar with the sub-audible tones that most repeaters require their users to send. They are often called "PL" tones (for Motorola's "Private Line") and usually referred to in manuals by their generic name: "CTCSS" tones. I think not everyone, though, is familiar with why there are options for using the tone frequency on both transmit and receive. The fact is that one should never enable the tone on receive unless one has a good reason to.

Perhaps people think that unless they enable the tone on both transmit and receive, they are failing to use all the features of their transceivers. I don't know if folks realize that what they are doing is disabling their receivers most of the time. If you enable this feature, your radio will refuse to operate

unless it hears the tone. What was happening in the '76 case was that the operator had enabled the "disable-unless-tone" feature for a repeater that *never sends* a tone. He was guaranteed never to hear the repeater!

It is *never* necessary to enable tone-on-receive to use a repeater. Many repeaters send the same tone that they require, in which case those who have enabled their tone-on-receive will be able to use the repeater. But some repeaters don't send a tone at all, and others even send a tone of a different frequency than the one they require of their users.

Another reason to avoid the "disable my receiver" function is that you will not be able to hear any activity on the frequency other than the repeater's transmitter. Sometimes a visitor from out of town will transmit on the repeater output to ask what the tone frequency is. With tone-receive enabled you won't be able to hear him.

The tone-on-receive feature can be useful on simplex. Let's say you and a family member want to monitor a particular frequency, but don't want to hear any other activity. You can agree on a tone frequency and set both radios to send and receive that tone. Then you will hear no one but the other person you are looking for.

What's wrong with this picture? Plenty! If you decide to call the other party, you have no way to know if the frequency is clear. You may be clobbering another QSO and not know it. The solution is simple, though. Program *two* channels in each of your radios for the same simplex frequency. Set one of the two for tone transmit only, and the other for transmit and receive. Use the channel with the receive tone active for monitoring. But before you ever transmit, switch to the one with tone-transmit only so you know what's happening on the channel.

License Examination Schedule

Opportunities to test for new or upgraded amateur licenses

Date	Day	City	Contact Person	Phone
05/17/17	(Wed.)	Provo	Steve Whitehead, NV7V	(801) 465-3983
05/17/17	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
05/22/17	(Mon.)	Taylorsville ^{1,3}	Garth Wiscombe, W7PS	(801) 558-5936
05/27/17	(Sat.)	South Jordan	Michael W. Stout, AG7AS	(801) 750-8037
06/03/17	(Sat.)	Salt Lake City ^{1,4}	Gordon Smith, K7HFV	(801) 582-2438
06/07/17	(Wed.)	Ogden	Rick Morrison, W7RIK	(801) 791-9364
06/07/17	(Wed.)	Clearfield	Mike Youngs, KK7VZ	(801) 573-3922
06/10/17	(Sat.)	Hurricane ²	Gary O. Zabriskie, N7ARE	N/A
06/21/17	(Wed.)	Provo	Steve Whitehead, NV7V	(801) 465-3983
06/21/17	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
06/21/17	(Wed.)	Provo	Steve Whitehead, NV7V	(801) 465-3983
06/21/17	(Wed.)	St. George ²	Gary O. Zabriskie, N7ARE	N/A
06/26/17	(Mon.)	Taylorsville ^{1,3}	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/>

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

Member of the Month

Stephen Reeder, KI7KAH

By Linda Reeder, N7HVF

This month we are featuring Stephen Reeder, KI7KAH. Stephen was interested in amateur radio when he was a child. It all began with his grandfather. Stephen's grandmother had died and his grandfather was working at a steel mill. Stephen's grandfather had a heart attack and they wouldn't let him work there any more. His grandfather also had glaucoma and lost his vision. Stephen's family had his grandfather move in with them. The grandfather was a shortwave listener and had a 1937 table top radio.

Stephen got a Heathkit and started building radios. He built a glorified crystal set and a direct conversion receiver with coils for different bands. Steven really wanted to get his ham radio license, so he started studying. Back then one would have to pass a Novice test, which consisted of a written test and a five word-per-minute Morse Code test. There was an additional written test for the Technician class. If you wanted your General you had to pass code at 13 words per minute. Then there was more theory for the Advanced license, and still more theory and a 20-word-per-minute code test for the Extra.

Steve was overwhelmed by the challenge of learning the Morse Code and then family issues got in the way. When Stephen was 16 years old his father was in a horrific accident. He worked for a steel shop operating a machine that had a hammer on one end and a cone on the other end joined to a deep grinding wheel. One day while he was working, the grinding wheel shattered. Four hundred bars of steel fell on him. A coworker found him a few hours later. He had a serious brain injury that made it unlikely he would make it through the night. Ultimately, Stephen's father died four years later. Steve had to grow up fast

and had to help out with the finances. He had his first full-time job when he was only 17 years old.

Stephen went to college, got married, and raised a family. He and his wife, Nancy, have five grown children: three girls and two boys. Steve says the two boys are interested in getting into amateur radio and he hopes they will.

Stephen got his masters and baccalaureate degree in microbiology. He worked for 50 years in the LDS Hospital microbiology lab. Stephen has now retired.

Shortly after Steve retired, one of the persons he worked with in the CERT program told him that there was going to be an amateur radio class in West Valley. Steve decided to go for it. He was glad he didn't have to worry about the Morse Code. Stephen took the Technician class and studied the General material on the internet. In January, 2016, Stephen passed both the Technician and General license tests. They asked if he wanted to try for the Extra. He told them he would try it later. He wanted to spend time learning about amateur radio.

Stephen enjoys talking on ham radio. He loves to help new people get on the air and have fun. Stephen has two sons-in-law, both of whom have radios, but they are not active. One lives in California and the one, KE7YMM, lives here in Salt Lake and works for the state. Steve is hoping to get them on the air.

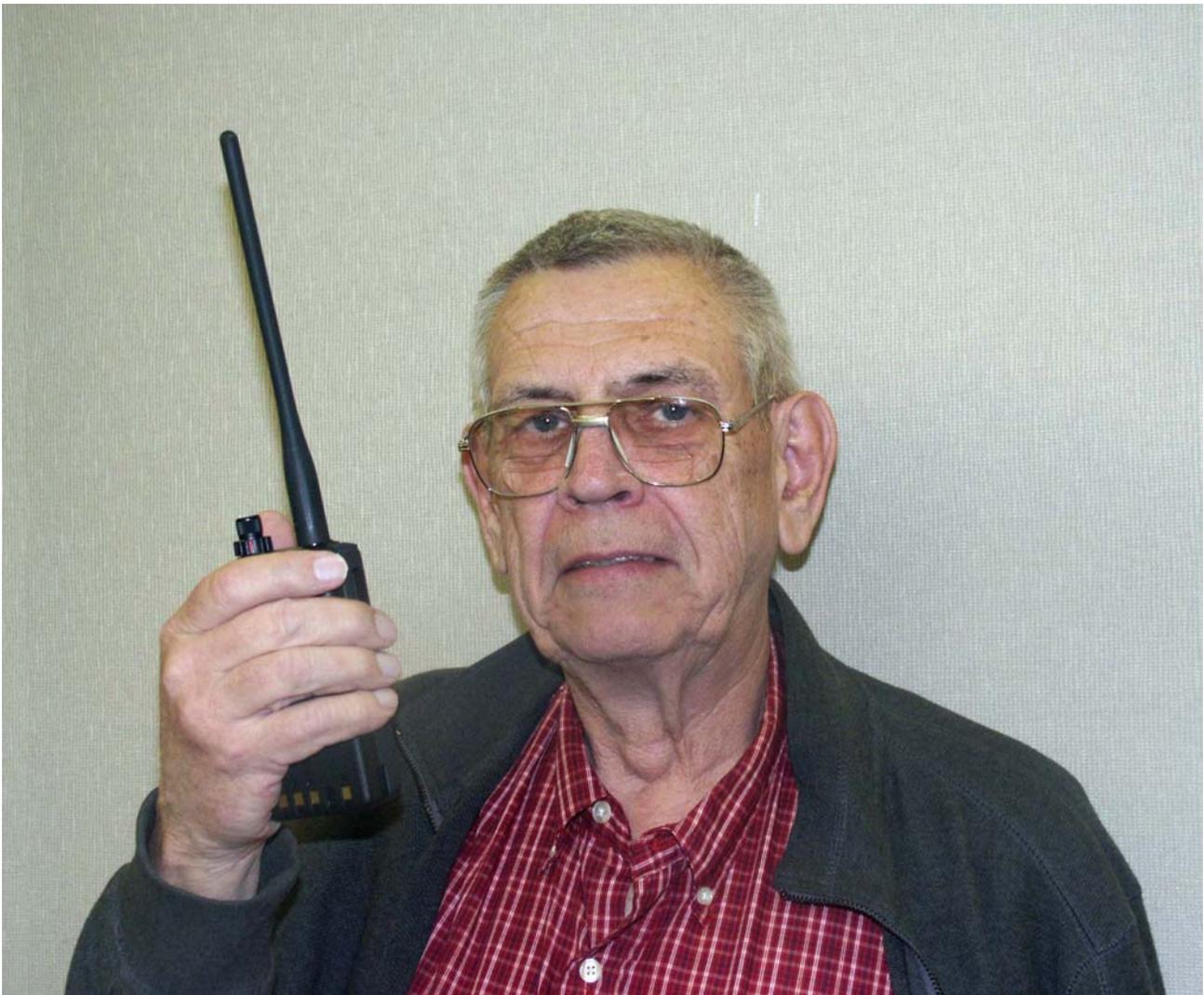
A couple of weeks ago Stephen called the ham hotline. He has the TH-D74A transceiver and was having exact the same problem I was having with the offsets. It needs to be entered in MHz, not

KHz. I don't know why it wasn't set up right out of the box. Both of our radios are up and running. Thanks to Gordon, K7HFV.

Stephen is a member of UARC. He has joined the ARRL and is interested in *QST* magazine. He is also thinking about joining the Taylorsville Amateur Radio Club.

Stephen, welcome to amateur radio.

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Stephen Reeder, KI7KAH
(Photo by K7RLS)