

The *Microvolt*

September 2022



UARC's 2022 Steak Fry – Spruces Campground, Big Cottonwood Canyon

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. 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 2022 Board

President: Morris Farmer, AD7SR	801 278-4966
Executive VP: Lonnie Oaks, K7LO	801 255-1225
Vice Pres: Bruce Fereday, KF7OZK	801 883-9428
Secretary: Tom Kamlowsky, WA7ZRG	801 505-9134
Treasurer: Chuck Johnson, WA7JOS	801 268-0153
<i>Microvolt</i> Editor: Position open	
Asst. <i>Microvolt</i> Editor: Rick Asper, AC7RA	801 865-1693
Program Chairperson: Rian McKee, KF7QGY	801 548-1084
Program Chairperson: Mike McAinsh, KI7MTI	385 246-3981
Imm. Past President: Clint Turner, KA7OEI	801 566-4497

Committee Chairpersons and Members

Bookseller: Rick Gregory, KG7GOW	801 582-7783
Historian: Ron Speirs, K7RLS	801 904-3587
License Trustee: Brett Sutherland, N7KG	801 298-5399
Repeater Engineer: Clint Turner, KA7OEI	801 566-4497

Contents

The October meeting – “Homebrew Night”!3
 UARC on Social Media.....4
 Mysterious carrier on 7033 kHz.....4
 USPS Circulation Notice.....6-7
 Member of the Month.....7

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

Latest News

The October UARC meeting means Homebrew Night!

Holding to tradition, the October meeting will be Homebrew Night. In case you are unfamiliar with UARC's Homebrew Night, you may be disappointed to learn that it has little to do with a beverage – unless that beverage refers to an antenna that you have put up – but rather projects that you may have built in the past year, or even something that you put together many years ago.

We ask that the project be plausibly amateur radio-related in some way (*computer-type projects generally count*) which means that if you lug in a rebuilt VW beetle engine to talk about, you *will* look out of place! If possible, bring in the project itself and demonstrate it – if possible to do so, especially in the space of 3-5 minutes. If your project is *too* big to fit through the door (*perhaps that beverage antenna*) or too dang heavy (*such as that boat anchor radio that you have restored*) then be sure to bring a thumb drive with photos that you can share with the crowd.

In-person meetings have resumed!

You may have noticed that the September UARC meeting was actually held in person – quite a welcome change to over two years of online meetings!

We encourage everyone who *can* come to the live meeting to do so and re-acquaint themselves to their fellow club members. We understand that there will be some who, for whatever reason, may not be able to attend the live meeting and we'll do our best to do a “live” stream via YouTube as we have been doing since early 2020, making available an edited version of the meeting a few days after the fact on YouTube, as we have also been doing for the past couple of years.

You can find the club material – including past meetings - on YouTube by going to:

<https://www.youtube.com/c/UtahAmateurRadioClub>.

From there, look for the feature that is marked “live.” The meeting should commence at 7:30. There should be some chatter on the channel by about 7 P.M. and you can connect in that period to make sure everything is working.

UARC meetings are held on the second Thursday of each month except for July (annual steak-fry) and August (vacation).

Our Cover

While there isn't a UARC meeting held in July, a reasonable stand-in is the annual steak fry! This year it occurred on the 16th and we're pleased to say that to a person, almost everyone who made reservations attended!

(Pictures by Elaine Jones, N7BDZ)

Consider a UARC board position!

In addition to an editor, UARC is also looking for “new blood” for 2023 – and the future. If you are willing, please consider running for a club office.

All positions are available for nominations (*there are two individuals for the “Program Chair” positions*) so if you are interested in running for an office, be sure to let the UARC president (*or any UARC officer, for that matter*) know. The initial slate of candidate officers will first be presented during the November meeting and again during the December meeting, prior to the elections.

UARC on Social Media!

UARC occasionally has "late breaking news" for club members that doesn't meet the time constraints for *Microvolt* publication. We have two methods of disseminating such news.

The first of these is the Facebook page at: <http://facebook.com/UtahAmateurRadioClub>

Like, subscribe, and click the notification "bell" and you "should" receive notification of any new postings.

The email reflector is a subscription system on Google Groups. Once you join the group, you will receive any email sent to the group (UtahAmateurRadioClub@googlegroups.com).

If you aren't already getting these emails, request to join by sending a blank email to: UtahAmateurRadioClub+subscribe@googlegroups.com

You will receive an email back asking you to register. Once that is done, your request to join will be vetted by an administrator and you will be approved.

We usually send any news to both venues, so it is not necessary to join both unless you want to, but please join one of them so we can stay in touch.

Consider being an editor of the *Microvolt*

With the passing of our friend Gordon Smith, K7HFV, we have also lost our *Microvolt* editor and are seeking a new editor for *this* publication.

What is required:

The editor isn't just responsible for putting together the content of the *Microvolt*, but also gathering the information for articles to be put in the *Microvolt* working with contributors of features and submitted articles, – and may even to pen a few articles if the column-space seems to look a bit empty when everything else is done.

Knowing word processing software is an absolute must (*we use LibreOffice* – available for PC, Mac and Linux) and having a reasonable handle on the English language and its grammar is a definite plus, as having a flair for the aesthetics of putting everything together in a sensible fashion on the page and screen.

Who may apply:

The editor, who must be a UARC member, is *elected* by the club membership during the December meeting. If you are willing to do this task, please contact the UARC club president, Morris Farmer, via email – or, for that matter, *any* of the club officers.

The mysterious carrier on 7033 kHz

Sometime in late February of this year, those who frequent the 40 meter CW band noticed something odd: A continuous carrier near 7033 kHz. This, by itself, isn't too odd: People will often key up for a long time (*possibly IDing legally, possibly not.!*) when testing an antenna – but this signal persisted for a day, a week, and then a month!

In these days of online forums and social media, there's nothing like a mystery to spawn conjecture and theories of conspiracy, often unencumbered by the thought process, leading to all sort of weird explanations.

Many of these proposed explanations could be dismissed out of hand by simple observation of the

signal itself: For example, some people surmised that this signal – which happens to be on a frequency near one on which clandestine activity was occurring in the Eastern European conflict – was, in fact, European in origin, but a simple check of signal reports and being able to listen on remote, Internet-based receivers around the world would quickly allow one to dismiss this notion.

The fact that this signal was unmodulated was, itself, vexing. On HF, one of the ways that signals are analyzed is by looking at modulation, and in doing so one can estimate the signal's time of arrival to several disparate geographical locations and divine its likely origin. The lack of modulation meant that one of the systems for locating signals – the KiwiSDR TDOA network – was not usable for this signal, and those that attempted to do so came up with confusing results – including the possibility of the signal emanating from those sites - often leading to yet more strange theories.

When amateurs think of directional antennas, they think of a Yagi – but it turns out that an antenna like this on HF is only marginally useful. Ignoring the fact that 40 meter Yagi antennas are somewhat rare, it should be remembered that one 4 or 5 elements will have a beamwidth of 10s of degrees which, from thousand miles away imparts a lot of uncertainty – but it's still useful in the sense that it can augment *other* data.

The humble loop antenna is a better option: Used since the earliest days of radio, this antenna has very broad peaks, but more usefully it has very sharp *nulls*: Knowing the bearings at which the signal disappears provides useful information. Unfortunately a loop by itself has a 180 degree ambiguity – which is to say, if a signal is coming from due North, you can't determine with *just* the loop if the signal is coming from the North or South.

Collaborating with others becomes invaluable at this point: It wouldn't take too many other lines

drawn on a map to remove the 180 degree ambiguity.

Such was the case with this signal. By collaborating online and taking several bearings, it was possible to *begin* to narrow down a possible geographical location – but as seen in the map – which is centered roughly on Moab, Utah (*with the four corners area near the bottom center*) these lines really didn't cross in any specific location.



A collection of bearings from western states that seem to indicate a source in southeastern Utah or southwestern Colorado

Since it was pretty clear that the signal was from the “Utah/Colorado/Arizona/New Mexico” area, it was possible to use distant, remote receivers to tell something about the signal itself. By transmitting near the errant signal – IDing of course – and comparing the signal strength of the two, it was possible to determine that the power of this carrier was likely in the 25 watt range, which is why it managed to endure for many weeks without burning up the transmitter!

Another observation was made by precisely measuring the frequency and seeing a period of about 20 minutes over which the signal would vary by a bit less than 1 Hz, indicating that it was likely in an environment with a cycling heater. This didn't really narrow down its location, but it indicated that it was likely in someone's house.

One problem with lower-frequency HF signals is that at close range, they propagate primarily by skywave meaning that they come from a very high angle – nearly vertical if you are near the transmitter. It isn't until you are within nearly visual distance that one can start to hear "groundwave" – particularly on 40 meters where many people use a dipole which doesn't radiate its energy toward the ground, causing signals to simply go overhead. With a huge geographical area, that meant that both luck and skill would be involved in finding the signal.

While further efforts were made to locate the signal – including listening to HF from an airplane and carefully observing known nulls of its antenna

– it appears that luck had as much to do with its locating: An amateur in Colorado reported hearing it very strongly in a small community and was able to narrow down the possibilities.

Either by physically locating the transmitter itself or simply contacting all hams in the area, the signal finally disappeared in the evening of April 19 when the 20 minute frequency oscillation stopped (*perhaps from someone remotely turning up the heat at the QTH?*) about three hours before. The report on QRZ implies that "someone" figured out it was likely *their* transmitter and immediately took action and shut it off.

While it would be interesting to know the details of what happened: Did someone leave their rig on

PS Form 3526 Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)
U.S. POSTAL SERVICE PERIODICALS
STATEMENT OF OWNERSHIP - FORM 3526

1. Company Name/Publication Title
UTAH AMATEUR RADIO CLUB/MICROVOLT (THE)
2. Publication Number
75430
3. Filing Date (mm/dd/yyyy)
09/05/2022
4. Issue Frequency
MONTHLY EXCEPT AUG
5. No. Issues Published Annually (required)
11
6. Annual Subscription Price
20.00
7. Complete Mailing Address of Known Office of Publication (Not printer)
Address Line 1
280 N 200 W STE 200
Address Line 2
BOUNTFUL
County
SALT LAKE
State
UT
City
BOUNTFUL
Foreign Address
84010
Contact Person
GORDON SMITH
Telephone (include area code)
7169
Ext.
2438

8. Complete Mailing Address of Headquarters or General Business Office of Publisher
Address Line 1
632 S UNIVERSITY ST
Address Line 2
SALT LAKE CITY
City
SALT LAKE CITY
State
UT
ZIP+4
84102
Foreign Address
3213
9. Full Name and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)
Publisher
Utah Amateur Radio Club
Address Line 1
632 S University st.
Address Line 2
Salt Lake City
City
Salt Lake City
State
UT
ZIP+4
84102
Foreign Address
321E
Editor
Same as Publisher
Full Name
Utah Amateur Radio Club
Address Line 1
632 S University St.
Address Line 2
Salt Lake City
City
Salt Lake City
State
UT
ZIP+4
84102
Foreign Address
321E
Managing Editor
Same as Publisher
Full Name
Address Line 1
Address Line 2
City
State
ZIP+4
Foreign Address
10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the name and address of the individual owner. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)
Full Name
Utah Amateur Radio Club
Complete Mailing Address
632 S University st., Salt Lake City, UT 84102-3213

The Microvolt September 2022

and accidentally set something on their key? Was it a remote station that we awry? Unless the amateur to which this happened comes forth and writes about it as a cautionary tale, we'll likely never know, but the lessons are quite clear:

- Turn off your radio and disconnect the antenna before you leave for an extended period.

- If you are running a remote station, check it once in a while, and have an alternate means (*Internet-controlled "smart plug"*) to disconnect its power.

If you are interested a detailed message thread about this event, search for "Carrier on 7033 khz for 3 weeks" on the QRZ forums.

PS Form 3526 Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)
 U.S. POSTAL SERVICE PERIODICALS
 STATEMENT OF OWNERSHIP - FORM 3526

13. Company Name/Publication Title:

14. Issue Date for Circulation Data Below (mm/dd/yyyy):

15. Extent and Nature of Circulation		Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a.	Total Number of Copies (net press run)	<input type="text" value="240"/>	<input type="text" value="240"/>
	Mailed Outside County Paid Subscriptions Stated on PS Form 3541 (include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	<input type="text" value="66"/>	<input type="text" value="66"/>
b.	Paid Circulation (By Mail and Outside the Mail)		
	Mailed In-County Paid Subscriptions Stated on PS Form 3541 (include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	<input type="text" value="173"/>	<input type="text" value="173"/>
	Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS	<input type="text" value="0"/>	<input type="text" value="0"/>
	Paid Distribution by Other Classes of Mail Through the USPS (e.g. First-Class Mail)	<input type="text" value="0"/>	<input type="text" value="0"/>
c.	Total Paid Distribution (Sum of 15b (1), (2), (3), and (4))	<input type="text" value="239"/>	<input type="text" value="239"/>
	Free or Nominal Rate Outside County Copies included on PS Form 3541	<input type="text" value="1"/>	<input type="text" value="1"/>
d.	Free or Nominal Rate In-County Copies included on PS Form 3541	<input type="text" value="0"/>	<input type="text" value="0"/>
	Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g. First-Class Mail)	<input type="text" value="0"/>	<input type="text" value="0"/>
	Free or Nominal Rate Distribution Outside the Mail (Carriers or other means)	<input type="text" value="0"/>	<input type="text" value="0"/>
e.	Total Free or Nominal Rate Distribution (Sum of 15d (1), (2), (3), and (4))	<input type="text" value="1"/>	<input type="text" value="1"/>
f.	Total Distribution (Sum of 15c and 15e)	<input type="text" value="240"/>	<input type="text" value="240"/>
g.	Copies not Distributed	<input type="text" value="0"/>	<input type="text" value="0"/>
h.	Total (Sum of 15f and 15g)	<input type="text" value="240"/>	<input type="text" value="240"/>
i.	Percent Paid (15c divided by 15f times 100)	<input type="text" value="99.58 %"/>	<input type="text" value="99.58 %"/>
16.	If total circulation includes electronic copies, report that circulation on lines below		<input type="checkbox"/>
a.	Paid Electronic Copies	<input type="text" value="0"/>	<input type="text" value="0"/>
b.	Total Paid Print Copies (Line 15c) + Paid Electronic Copies	<input type="text" value="0"/>	<input type="text" value="0"/>
c.	Total Print Distribution (Line 15f) + Paid Electronic Copies	<input type="text" value="0"/>	<input type="text" value="0"/>
d.	Percent Paid (Both Print & Electronic Copies)	<input type="text" value="0.00 %"/>	<input type="text" value="0.00 %"/>

I certify that 50% of all my distributed copies (Electronic & Print) are paid above a nominal price.

17. Publication of Statement of Ownership
 If the publication is a general publication, publication of this statement is required. Will be printed in the issue of this publication.
 Publication not required.

18. Signature and Title of Editor, Publisher, Business Manager, or Owner
 Signature:
 Title:
 Date:

Reason for Amendment:

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

This is a yearly statement of circulation required by the U.S. Postal Service

September Member of the Month: Jeffery Burgener, KK7BSX

by Linda Reeder, N7HVF

This month we are featuring Jeffery Burgener KK7BSX. Jeffery has always been interested in radio communications and would listen to the scanners, hearing police, fire and air craft.

Jeffery and his wife Jodi have two girls, grown now, and had his own insurance business for 40 years before selling it and retiring.

After retiring he wanted to become familiar with other radio communications and Jeffery was impressed with amateur radio. Because of his background in electronics, he studied for his technician license on his own and received it in November 2021 and was issued the call KK7BSX.

Jeffery is now working on his general license. He has a Icom 7100 multi band radio and a multi band receiver that he listens on. Jeffery was excited to have made his first contact on echo link, using his cell phone, talking to a ham in Missouri. He is a member UARC, the Salt Lake Crossroads Amateur Radio Club and the Utah VHF Society. Jeffery said it is very important to help pay for the use of the repeaters.

Jeffery's favorite thing about amateur radio is all of the friends he has made since he received his ham radio license. When talking to people on the nets and on the repeaters you feel like you really know them. Jeffery has met several of them in person when attending ham radio activities.

Jeffery is a sound engineer and has a recording studio in the basement of his home. He makes albums and single recordings for individual customers. You can stream these recordings on the internet.

The Microvolt (USPS 075-430) is published monthly except August for \$20.00 per year or \$1.50 per issue by the Utah Amateur Radio Club, 632 S. University St., Salt Lake City, UT 84102-3213. Periodicals Postage Paid at Salt Lake City, Utah. POSTMASTER: Send address changes to *The Microvolt*, c/o Tom Kamlowsky, 4137 S Clover Lane, Salt Lake City, UT 84124-2711

For 20 years Jeffery was a member of a local rock and roll band. They played for festivals, clubs, and restaurants.

Jeffery, We wish you the best in all of your endeavors.

