

“The Illuminator Project”

- Obviously needs the other station to have an antenna system with enough gain to make up the difference and complete the path.
- Fortunately, there are enough efficient stations around to enable making some QSO's.
- By the way, the band sounds very quiet with this antenna.



The Light bulb Antenna from Tom Schiller's Presentation at the February Meeting.

The

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Microvolt

March 2003

Please Send Dues to:

UARC

c/o Gregg Smith

7546 S. Uranium Drive

West Jordan, UT 84084-3942

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Prologue

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 first Thursday of the month at 7:30 PM in the University of Utah Engineering and Mines Classroom (EMCB) building, Room 101.

Membership: Club membership is open to anyone interested in amateur radio; a current license is not required. Dues are \$15 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 \$15 may obtain a membership without a Microvolt subscription for \$9. Send dues to the Club Secretary: Gregg Smith, K7APW, 7546 S. Uranium Dr., West Jordan, UT 84084-3942. ARRL membership renewals should specify ARRL Club #1602.

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-) has autopatch facilities on both the Orem exchange (covering Santequin to Lehi) and the Salt Lake City exchange (covering Draper to Layton). The 449.10 repeater has autopatch facilities into Salt Lake City only available to UARC members. Due to the volume of traffic, only mobiles should use this autopatch. Autopatch use is open to all visitors to our area and to all club members. Non-members who wish to use the autopatch are encouraged to help with the cost of maintaining the equipment by joining the club.

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.

Publication: The Microvolt is the official publication of the club. Deadline for submissions to the Microvolt is the 10th of each month prior to publication. Submissions by email are preferred (uarc@xmission.com), but other means including diskettes and typewritten submissions can be mailed directly to: Tom Schaefer, 11678 Littler Rd., Sandy, UT 84092. All submissions are welcome but what is printed and how it is edited are the responsibility of the Editor and the UARC board. Reprints are allowed with proper credits to *The Microvolt*, UARC, and authors. Changes in mailing address should be communicated to the Club Secretary: Gregg Smith, 7546 S. Uranium Dr., West Jordan, UT, 84084-3942.

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For late breaking news listen to the UARC Information Net Sundays at 21:00 on 146.62 or set your browser to:
www.xmission.com/~uarc/announce.html

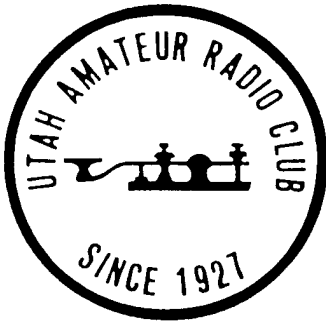
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The Microvolt

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QST from the Prez

Brett Sutherland, N7KG

I wanted to take a minute to tell you about the most interesting experience I have had in ham radio in awhile. Recently, I called Gordon Smith, K7HFV to go direction find (DF) an interference problem. After confirming the interference was not where we suspected, we decided to pay a visit to another ham, whom we shall call Mr. X, to see if he, and/or his direction finding equipment wanted to go on a little excursion. We had no idea where to start from on this particular interference, so a direction would have been very handy.

Mr. X was in, and was interested in going out with us. After hooking up the antennas and such in the truck, we took off. We positioned ourselves in a good listening position and began to monitor. We listened, and listened, and listened some more. Nothing. Not a thing. So, as it was getting time for dinner plans, we packed up and headed back to Mr. X's house to unload the gear. We pulled in the drive, and hadn't even begun tearing things down when a different "interference" problem cropped up. It wasn't the one we were after, but all the same it was a viable target. Away we went.

Our path took us almost 50 miles one way from Mr. X's

house. The "interference" was coming from a station that was transmitting music, re-broadcasting scanner transmission, solid carriers, DTMF tones, etc. We had a number of delays in the process, but it eventually all worked out. We were able to DF the house where the interference was coming from, and the specific feed line.

We confronted the offender and let that person know that "jamming" was an illegal activity. Rest assured, if the problem persists, that appropriate action will be taken.

I wanted to comment on a couple of items tangential to this experience.

1. I had a great time. I was participating in hobby I love with very good friends. Time spent that way is time well spent.
2. I learned a lot about an aspect of radio I had only heard about. Frankly it intimidated me. Not now. Familiarity breeds comfort.
3. We were able to provide a service to our entire ham community. Listening to malicious interference is annoying to everyone.

With that said, what can you do to help in these situations?

1. At a very minimum, figure out how to listen to the input on your radio. When interference occurs, switch to the input and listen to see if the signal is close to you. Make a written note of the location, date, and time, along with the signal strength received and the type of interference. This information can be tremendously helpful. What kind of rig is also helpful. Just state whether it was an all mode or FM only radio.
2. Don't get into a one sided argument with jammers. Just ignore them. They feed off of the attention. Don't give it to them.
3. Report the information off air to a club officer, repeater trustee or Official Observer Coordinator.
4. Develop an interest in DF'ing. There are a number of people who can help get the equipment built and/or set up. It's more fun than I had imagined.

My thanks to those who have made an effort to help keep a pleasant operating environment for all of us.

73 de N7KG Brett

March Meeting

Gordon Smith, K7HFV

Have you ever wondered how to be at the top of your class in the annual Field Day contest? Our speaker at the March UARC meeting is someone who has had that experience.

Bob Armstrong, N7XJ, is the trustee for NC7X, the call of the “Manti Camping and Contest Club,” which was the hands-down national winner of the 2B Battery Class in 2001 Field Day. They were also the clear Utah winner in 2002 (see [Field Day Results](#)). Bob has also had experience with the Utah Contest Club, NC7J, another one of the consistent high-scoring groups from Utah.

At our March 6 meeting, Bob will tell us not only how to do well on Field Day, but also how to have fun with QRP while exploring the outdoors. Bob is a contributing editor to *The Sojourner*, the internet magazine which is the official voice of the “Adventure Radio Society,” an internet organization for outdoor and portable operating. (See the Adventure Radio Society's [web page](#) for more information.)

Apart from his hamming and hiking activities, Bob is an M.D. in central Utah. A more complete biography can be found at http://www.natworld.com/ars/pages/sojourner_staff/n7xj_bio.html. We look forward to Bob's presentation.

The UARC meetings are now being held in Room 101 of the Engineering/Mines Classroom Building (EMCB) on the University of Utah campus. Meeting time is 7:30. An orientation meeting for newly licensed hams or those new to VHF FM is held at 7:00. Check the UARC website for [meeting location details](#) for maps and instructions.

Of course, even in the new location, we continue to have all the “standard” features of UARC meetings including a chance to check out the latest ARRL books from Fred the book lady, eyeball QSOs, and the chance to join ARRL or UARC. Fred is now setting up in a more convenient location, right at the front of the meeting room. Finally, there will be the “meetings after the meeting” which provide a chance to continue the eyeball QSOs over pizza or other gastronomic delights.

Elmer List

Brett Sutherland, N7KG

Topic	Elmer Name
Antennas	Available
APRS	Steve Baxter - K7SRB Tom Schaefer, NY4I
Awards	Available
Circuit Design	Available
CW	Gary Openshaw – KC7AWU
DF'ing	Available
DSP	Available
DX'ing	Available
EME	Available
EMI	Available
Emergency Communications	Available
HF Contesting	Available
HF Digital	Ron Speirs – K7RLS
HF Mobile	John Hays – K7VE Brett Sutherland – N7KG
HF Propagation	Available
HF Station Setup	Dean Lang – WA9AZK
Homebrew	Chuck Johnson – WA7JOS Ron Speirs – K7RLS
IRLP	Available
License Upgrade	Available
Linux for Radio	Brent House – KD7ICT
Mountain Topping	Available
Operating Practices	Dean Lang – WA9AZK
QRP	Andrew Madsen – AC7CF
Repeater Construction & Maintenance	Available
RFI	Available
Satellite	Ron Speirs – K7RLS
Slow Scan ATV	John Hays – K7VE
Software Defined Radio	Available
Spread Spectrum	Available
Traffic Handling	Available
VHF Contesting	John Hays – K7VE
VHF Digital	John Hays – K7VE Ron Speirs – K7RLS
VHF Station Setup	Ron Speirs – K7RLS

Member of the Month

Linda Reeder, N7HVF



Smith building. Last year Rulon was involved in the iron man competition in Provo. This was a marathon involving swimming, bike riding and running. Last summer he was involved in the pioneer trek in Wyoming. Last year in November he was elected as one of the program chair persons for UARC. One of Rulon's goals is to improve on his Morse code skills. He feels like this is an important skill to have especially in emergencies situation when code is the only mode of communication available.

Rulon we wish you the best in all of your endeavors.

Upcoming Testing Sessions

Date	Location	Contact
3/5/2003	Farmington	Fred Villanueva, 295-6560
3/8/2003	Logan	Clyde A. Best, (435) 563-9492
3/19/2003	Provo	Steve Whitehead 465-3983
3/25/2003	Salt Lake	Eugene McWherter 484-6355
3/28/2003	Roosevelt	R Chandler Fisher, (435) 722-5440
4/5/2003	Salt Lake	Gordon Smith 582-2438

This month we are featuring Rulon Holyoak (AC7GR) Rulon received his novice license in 1958, but back in those days if you didn't upgrade within one year the license expired. He received his novice license again in 1980. Rulon had a friend who was a General, so he studied with a group of friends. In 2000, Rulon went from novice to extra in one night. Rulon says he has a 3 generation ham family. Rulon's son Trevor (KD7GHI) has his technician license and Trevor's wife Janna KD7KGO has her technician license. Rulon's wife Millie KD7NNB has her technician license. She was in the women's class in March of 2001. Rulon said just last week his 17 year old granddaughter, Xela House, received her technician license. Her call sign is KD7UGA. Additionally, his ten year old grandson, Nephi, received his technician license KD7UHX. Rulon really enjoys communicating with his family on 2 meters. Rulon and his wife Millie have five children three girls and two boys. Rulon works for the LDS church. He is the computer support person at the Joseph

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**Bob Wood, W7OAD
UARC Member**

Hunting the Monster

Randall Shreve, KD7PCW

It was New Year's Eve and after talking with a few stations on VHF I decided to go over to HF and do a little shortwave listening. Uh oh, what was this?

Guzhh, guzhh, guzhh...

A new and terrible interference was loud and clear at S2 and even listening to some of the more robust broadcasters was troubled by this dreadful noise. The following day I discovered that this new interference could be heard on all HF bands at all hours of the day or night and even affected the AM broadcast band.

Living here in Hooper, I have enjoyed a certain freedom from RFI. Times, they are a changing with the demographics evolving from cattle, corn and onions to houses. With the increase of new homes in the area an increase in the RF noise floor has occurred over the past couple of years. However, I was convinced that this new interference was that of a new radar system.

Sitting at my computer in my frustration it occurred to me that I could turn to the powerful resource of fellow Hams. As a member of both DARC and UARC I decided that Amateurs nearer to my QTH might also be hearing this interference. A quick mass E-mail with a sound clip attachment was sent to all DARC club members resulting in several responses, all of which lead me to believe that my problem was not radar related (one fellow suggested that it was an Alien Invasion). Various suggestions and offers to assist in tracking down the source of the interference flooded in. I was no longer alone in my troubles and was getting good advice.

An E-mail from Earle, NT7Y, caught my attention. Earl had listened to the sound clip and identified the interference. Labeling it as the "Monster" with the source being a farmer's electric fence, NT7Y gave some reasons how a simple device can become such a RFI monster of sinister proportions. Wow! Other than the occasional soft clicking of my fence or that of a neighbor's, I had never heard anything like this before.

With portable shortwave receiver and headphones I walked my yard, my fence and my neighborhood. I was on a RFI hunt and it made me think of the Allies in World War II tracking German U-boats, (not to mention that gossip factor that I gave my neighbors).

Other than badly needed exercise I was getting nowhere as I could not locate its source. Indeed, while walking near AC power lines the guzhh, guzhh, guzhh would increase slightly in signal strength, however it wasn't coming directly from my neighborhood. Time to fan out.

Now I was in my Jeep driving Hooper in grid squares listening with my portable and making notes. After 45 minutes I changed directions when the signal levels starting dropping and an east to west tack found the signal increasing then decreasing. I was onto it now as I backtracked and changed to a north/south track and bingo, I found the bonanza of RFI.

The "Monster" was living at a hog farm approximately 1- miles away from my QTH. I was also in luck as the gentleman who farmed here was out in front of his house (I found out later that he was awaiting the arrival of the pizza deliveryman). After some polite dialogue explaining the RFI problem that I was having and allowing the farmer to listen to the repeated guzhhs on the portable, I asked if he had electric fences. Oh yeah, but so did his neighbors...

Again, being polite, I asked if he would mind turning off his fence for a minute as a test. "Sure, no problem." As we walked towards the electric fence controller I could see the monitoring lights in perfect time with the RFI; however when he unplugged the fence the RFI remained. Ah, so close, but no cigar! Now discouraged I was about to take my leave when I happened to ask if he had more than one fence. Guess what, he did and as we started towards another fence line in the back of his property the RFI went off scale. Sure enough, as soon as he unplugged the second fence the "Monster" completely disappeared!

With a smile across my face I passed the headphones back to the farmer so that he could hear the absence of the RFI. As he listened he admitted that he knew that he had a ground problem on this fence as it was causing bad interference to his TV as well and he wasn't sure when he could fix it. At this point I was happy as a clam in just finding the source of the RFI so

with my thinking geared towards a “one-bridge-at-a-time” approach, I shook hands, bid him goodbye and offered to assist in the resolution if he couldn’t cure it.

No sooner than I was down the street the “Monster” came back to life. The farmer had powered the fence back up!

This story has a good ending as the following day the “Monster” was gone and hasn’t returned. Being polite worked and with the “Monster” dead, good listening has returned to my shack. While the “Monster” did give me a great deal of “gas” while it was charging through my headphones it also turned out as a good learning experience. I turned to fellow Amateur Radio Operators and received experience and help that I needed and in the process learned valuable lessons about RFI and hog farmers.

In closing, thanks to all.

73,
Randall

High School Needs Coax

Mark Engebretsen

Layton High School is in need of 50 ohm coax to replace their decayed coax. They have a fantastic multi-band Yagi mounted high on a 30 foot tower, but years of weather have worn the coax to an unusable state. With no school budget for a radio club, the science teacher (a ham) is trying to get the shack back in strong condition to build up a radio club for both ham and FM broadcast. I substitute teach at the school on occasion and am trying to help out. If you've got a substantial length of coax (hopefully low loss) you could possibly donate, or even a few dollars to contribute to help them purchase some line and connectors, please let me know. I can be reached at 801-294-6655.

PRB 1 Bill Passes Utah Legislature

Gordon Smith, K7HFV

Yea 23 Nay 0 Abs 6 Total 29

That's the way the Utah Senate display board looked just before 11 A.M. on the morning of February 14 as Utah's PRB-1 bill got the final vote it needed for passage. This bill could be a major boon to amateurs wanting to erect antenna structures. The next major step will be the Governor's signature.

Many other states have passed similar bills in order to ease the legal hoops through which amateurs must pass to erect reasonable antennas. FCC made a clear claim of federal preemption with its [PRB-1](#) declaration that required cities, counties, zoning commissions, etc. to reasonably accommodate amateur antennas enacting only the minimum restrictions necessary for health and safety considerations. (“Federal Preemption” is the notion that federal rules override state and local legislation in matters the federal government regulates, such as radio licensing.) Unfortunately, hams have sometimes needed a great deal of time and money to fight unreasonable restrictions using PRB-1. A state law that reflects or emphasizes the PRB-1 provisions can make it much easier to convince local government entities that they need to comply with those provisions.

It all started in Utah when Mike Davis, KD7FQD, who drives for the Granite School District, realized that one of his fellow drivers, Neal Hendrickson, was a representative in the Utah Legislature. With Mike's input and help from the Capitol Hill attorneys, Representative Hendrickson drafted a bill that would prevent cities and counties from restricting amateur radio antenna structures in a way that would be inconsistent with FCC rules, particularly PRB-1. The bill became known as HB-79.

The first major hurdle for the bill was passage by the House Political Subdivisions Committee. John Hanson, KI7AR, using his experience in the Washington Legislature, came to bat to help fight for the bill. However, on January 21, the bill was rejected by a 3-7 vote in the committee.

Representative Hendrickson, though, did not give up. Part of the problem had been that time for the committee meeting ran out when some of the members still had unanswered questions. A few days later Representative Hendrickson let Mike and John know that he believed he had the votes to pass the bill and it would come up for reconsideration. On January 28 the bill was recommended favorably by the committee on a vote of 8-0 with two absent or abstaining.

From that point on, the bill met little opposition. It was passed by the full House on January 31 with a 65-8 vote (two absent or abstaining).

In the Senate, the bill was referred to the Business and Labor Committee which reported it out favorably on February 6. John Hanson, KI7AR, tells us that he went to the hearing prepared to address the issue. He got only a minute and a half into his presentation when the Chairman said,

“You're speaking in favor, right?”

When John indicated that he was, the Chairman suggested there was no need. A 6-0-2 vote demonstrated that he was correct. John says he's sure the favorable report was the result of the Committee realizing it was the only way they could avoid hearing him speak for another fifteen minutes.

The Senate votes on most bills twice, once on “Second Reading” and once on “Third Reading.” The Second Reading vote was taken on February 13 and HB-79 passed on a 26-0 vote (three absent or abstaining). The final vote came on the following day when the bill won a 23-0-6 approval.

The bill's status and text can be found at <http://www.le.state.ut.us/~2003/htmdoc/hbillhtm/HB0079.htm>. The “status” page shows the various steps the bill had to go through for passage. Several more remain before it becomes law.

Thanks to the hams that originated the bill and defended it in its committee hearings. Thanks also to those who contacted their state Senators and Representatives and helped assure passage.

Newcomer Teachers Needed

Gordon Smith, K7HFV

Remember the Newcomers' Meeting? The UARC Board would like to get it started again, but it needs some volunteers to conduct it.

We used to have a feature called the “Newcomers' Meeting” preceding each regular UARC meeting. In it we had a short lecture about operating procedure for new licensees along with explanations of some things they would need to know such as how PL tones work. Then there was a period when the newcomers could ask questions.

In the past, one volunteer has done duty as the newcomers' instructor for a whole year or more. The board now feels it would be better to spread the duty around more and involve more people. If you would like to be the instructor, even for only one or two evenings a year, get in touch with one of the [club officers](#). The Newcomers' Meeting starts at 7 P.M. on regular meeting nights.