



THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

>>>>>>> <http://www.barconline.org> <<<<<<<

November 2010

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PRESIDENT'S MESSAGE

In the November issue of QST, the monthly amateur radio magazine from the [America Radio Relay League](#), there were a couple of articles that I found intriguing. The first article is "WSPRing Around the World" and the second is "The Tape Measure Vertical". Every month in QST there is interesting articles on technical advances, news, construction projects, contests, and product reviews.

WSPR (pronounced "whisper") is an acronym for "Weak Signal Propagation Reporter". The WSPR network ([WSPRnet.org](#)) is a group of amateur radio operators using K1JT's WSPR digital mode software to probe radio frequency propagation conditions using very low power (QRP/QRPP) beacon like transmissions. QRP operation means transmitting at reduced power levels while aiming to maximize one's effective range while transmitting. The term QRP derives from the standard [Q code](#) used in



radio communications, where "QRP" and "QRPP?" are used to request, "Reduce power," and "Should I reduce power?" Most QRP CW and other transmissions modes enthusiasts define QRP as 5 watts or less, and QRPP as less than 1 watt.

QRP is especially popular with CW operators and those using PSK31 because of its highly efficient, narrow-band mode that is very suitable to QRP operation. Communicating using QRP can be difficult since the QRPer must face the same challenges of radio propagation faced by amateurs using higher power levels, but with the inherent disadvantages associated with

having a weaker signal on the receiving end, all other things being equal. Radio propagation is affected by the daily changes of water vapor in the troposphere and ionization in the upper atmosphere, due to the Sun.

WSPR implements a beacon like transmission protocol designed for probing potential propagation paths with low-power transmissions. Normal transmissions carry a station's call sign, Maidenhead grid locator, and transmitter power in dBm. This information is transmitted using 4tone frequency shift keying at 1.46 baud. The signal bandwidth is only 6 Hz, so many WSPR signals can fit into the small 200 Hz segment that WSPR uses in each amateur band. The program can decode signals with S/N ratios as low as -28 dB in a 2500 Hz bandwidth, some 10 to 15 dB below the threshold of audibility. Stations with internet access can automatically upload their reception reports to a central WSPRnet database, which includes a [mapping facility](#).

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If you look below the map, you can select individual bands to see the current or a period of time signal propagation activity. This is helpful in determining band openings to different areas.

Next is a Tape Measure Vertical antenna. Reading this article reminded me of the club project when we built 2 meter tape measure antennas to use for direction finding in the bunny hunts. But this is a vertical tape measure antenna built for 20 meters. The antenna was designed as a temporary vertical ground plane antenna for easy deployment. It is built using a small step ladder where the vertical PVC pipe is mounted on the top of the ladder with a tape measure inside the PVC pipe. At the base of PVC pipe, a cross T connector was used with additional hardware to allow the vertical tape measure to move up and down in the center of the PVC pipe. The center of the cross T connector was drilled out to allow reading the vertical element length for tuning. On the one side of the cross T connector was the feed point and the other side of the T had a connection for a loading coil. Four additional tape measures are used for ground radials, from each corner of the step ladder top sloping down to and staked on the ground. The vertical element and the four ground radials elements can be adjusted for proper length for a frequency band.

The author of the article, David Poole AD9DP, used the vertical antenna on 10 through 40 meters. On 40 meters, it required a loading coil at the cross T connection. The tape measure vertical and radial lengths were recorded for a frequency and the frequency bandwidth to 2:1 SWR on each band. Once the tape positions were logged for a frequency on each band, they could move to any frequency by adjust the vertical and radial lengths without retesting for SWR. The SWR measured on all bands was 1.3 or less.

Additional information on David Poole's design can found at www.arrl.org/qst-in-depth. QST in depth features additional files and information to supplement articles published in QST. ARRL members can access this information. If you are not an ARRL member and would like to know more about what the ARRL has to offer, you can get a free 90 day guest account.

73,
Cordell
KE7IK

UPCOMING ACTIVITIES

Utah Simulated Emergency Exercise (SET) - 6 November

RACES Conference in SLC - 13 November

Club Meeting - **20 November**

(Changed from normal schedule due to RACES conference)

RACES HF Net - 20 November, 8:00 AM 3920 KHz

Club Christmas Party - 2 December, 6:00 PM
At the Bluebird Restaurant

VE Licensing Test Session - 11 December, 8:00 AM
Classroom area of the Cache County Sheriff's Complex 3rd Floor

RACES VHF Net - 16 December, 8:00 PM

2011

Club Meeting - 8 January 2011

RACES HF Net - 15 January 2011, 8:00 AM 3920 KHz

BARC Club Meetings are normally on the 2nd Saturday of the month at 10:00 A.M. on the 3rd floor of the Cache County Sheriffs Complex on 200 North and 1225 West, Logan, Utah.

ARES Meetings are usually held on the Third Wednesday of each month at 7 P.M. at the Cache County Sheriffs Complex. Contact Tyler Griffiths for more information.

The club meeting on November 20th (date change because of conflict the State RACES Conference on the second Saturday of November) with the topic of Ham Radio Deluxe and Winmor. We will be showing some of the features of Ham Radio Deluxe. HRD is a suite of free Windows programs providing computer control to commonly used transceivers and receivers. HRD also includes remote control, mapping, satellite tracking and digital modes. We will be demonstrating the remote control and the digital modes PSK31 and RTTY. Also we will be demonstrating Winmor. Winmor is a new HF radio transmission protocol used in the Winlink 2000 Global Radio E-mail System by amateur radio operators and radio stations in isolated areas.

Cordell

HAM PROFILE

Phil Rasmussen

Written by Himself

Phil Rasmussen grew up on a farm in Clarkston, Utah. He now resides in Hyde Park with his wife, Linda (KE7QBR). Linda, a busy grandmother, now, has a degree in physics from USU—and Phil notes that “Linda scored far better on the amateur exams than I did!” His five children are now grown and married, so both Phil and Linda, seemingly, have more time for amateur radio. “Dr. Phil” is a soil scientist at USU and has developed several RF sensors to measure soil moisture for irrigation scheduling.

Phil’s interest in electronics and amateur radio started when he built an Allied Radio “Knight Kit” (the poor man’s Heathkit) short wave radio when he was 11—circa



1961. In high school, Phil was helped by USU professors John Hanks and Clayton Clark (AC7O) @ USU to win first prize at a national science/engineering fair (see photo). He built a sensitive electrometer (an extremely high-impedance VTVM) to measure the varying electrical voltages (microvolts) in soybean plant leaves. Khalil Godfrey (WA7SHW), one of Phil’s classmates, kept encouraging him to get an amateur ticket. However, this did not happen until 1986 when Phil obtained his novice license and upgraded to technician-plus in 1987. Phil upgraded to Amateur Extra class in May of 2010. (Photo 1 — Phil @ 16 @ electronics lab)

Phil travels a great deal in his work. He manages an agricultural research program for the Department of Agriculture in Washington, DC. The program covers about half of the continental United States, Alaska, Hawaii, and the American protectorates of Guam, Micronesia, Northern Mariana Islands, and American Samoa (yes, these small islands have small Land-grant colleges like unto USU). Phil said he has enjoyed taking his little Yaesu FT-817 to the tiny islands of the Pacific—working HF, VHF and UHF where the seaside propagation is much better than in Hyde Park. He also notes that the Pacific islands are much more attuned toward emergency com-

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munications that we, in Cache Valley, sometimes are. The islands of Guam, Rota, Tinian and Saipan have endured two destructive typhoons (huge pacific hurricanes) in the last twelve years. “They truly value their amateur radio operators on those islands,” he said. For several days after a typhoon, amateur radio is the only communication system that is available.

Phil volunteers at the Logan Utah Bishops’ Storehouse where he works with Paul Hansen (WO7N), Boyd Humpherys (W7MOY), and Bob Humpherys (KD7BHB) in the emergency (radio) communications center there. He has also taught numerous Technician-prep classes for college-age adults throughout the Valley.

Phil is the ARRL-VEC (licensing exam) liaison for the BARC group in Cache Valley. Hence, he organizes and plans the exams that are held in the Valley. He notes that “it is always gratifying to see how many amateurs in Cache Valley have qualified as ARRL-VE’s and then share their time and talents unselfishly.” He continues: “It is not easy to ask people to donate a whole Saturday morning or an entire weekday evening to proctor amateur radio exams – but our group is always very willing to volunteer.” “It takes at least three qualified ARRL-certified examiners to proctor a test,” he continues, “but, now that ARRL has discontinued support of their computerized exams – at least double or triple that number are needed to complete an exam session in a timely manner.” Phil notes that part of the reason he feels strongly about his efforts to help with license exams in Cache Valley is because of the great help of Clayton Clark (AC7O), Jim Lofthouse (K7OA), and Bob Wood (WA7MXZ) who signed his first exam forms. “There are many amateurs in the Valley who spent a great deal of time mentoring me—and I feel that I owe the same commitment to the new corps of dedicated hams,” he said. “What a marvelous hobby we have!” he continued, “There are always new things to learn and new techniques to try... I am 60, and there are hundreds of new technologies yet to explore.” (Photo 2 – Phil @ 60)



Proxy (Absentee) Ballot and List of Candidates

For year 2011 Officers and Board
Of the Bridgerland Amateur Radio Club

Voting held on Saturday November 20th, 2010 at 10:00 A.M.
On the 3rd floor in the Cache County Sheriffs Complex on
200 North and 1225 West, Logan, Utah

Important Instructions: *If you are unable to attend the above meeting and wish to vote you may mail this ballot to any club officer in time to be in their hands before the meeting time noted above, or, you may seal the ballot in an envelope and send it with someone to be handed to a club officer at the meeting. If you need help, please contact any club officer.*
You need to be a current member of BARC to vote

For President	
• Cordell Smart KE7IK	
•	
For Vice President	
• Tyler Griffiths N7UWX	
•	
For Secretary	
• Tammy Stevens N7YTO	
•	
For Treasurer	
• Kevin Reeve N7RXE	
•	
For members of the board (Vote for three)	
• Roger Ellis AE7HB	
• Richard Ellwood KE7GYD	
• Guy Hatch N7WAT	
• Jared Luther K7LRX	
• Ted McArthur AC7H	
• Garth Timmins KF7ATL	
•	

You **MUST** get approval from a write-in candidate before submitting their name for office.
Additional nominations will be accepted from the floor at the meeting, with the approval of the nominee. Ballot can be mailed to **BARC P.O. Box 111 Providence Utah 84332**. It must reach the post office box by November 19th. Send in your ballot or come in person.
If mailed please put your name on the mailing envelope only.

BYLAWS of THE BRIDGERLAND AMATEUR RADIO CLUB, INC

Article I – NAME

Section 1: The name of this organization shall be **THE BRIDGERLAND AMATEUR RADIO CLUB, INC.**

Article II – PURPOSE

Section 1: The purpose of this organization shall be to unite radio amateurs in fellowship, to aid those not licensed in learning code and theory, and to provide service to the community especially in times of emergency.

Article III – MEMBERSHIP

Section 1: All persons having a bona fide interest in amateur radio, whether licensed or not, shall be eligible for membership.

Section 2: Application for membership shall be submitted to a club Officer. A member charged with conduct unbecoming a member of this Club may be expelled by a two-thirds (2/3) majority vote of the members if the Board of Directors (Board) has found the charges are sustained by its investigations. An expelled member may not reapply for membership unless approved by the Board.

Section 3: A member shall be defined as one who has submitted an application for membership and paid the appropriate dues.

Article IV – OFFICERS AND BOARD

Section 1: There shall be a Board of Directors which shall consist of the Officers, the immediate past President and two at large Board Members.

Section 2: The Officers of the club shall be: President, Vice-President, Secretary, and Treasurer.

Section 3: All Officers and Board members shall be members of the club in good standing.

Section 4: Any person elected to the office of President shall have served at least one year as Officer or Board member of the club, whether before or after incorporation.

Section 5: The immediate past president shall serve the subsequent year as a member of the Board.

Section 6: Committee chairpersons of the various committees required shall be appointed by the Board. Additional members of said committees shall be appointed by the committee chairperson.

Article V – ELECTIONS

Section 1: The Officers and Board members of the club shall be elected for the term of one (1) year and until such time as their successors shall have been elected and take office. Newly elected Officers and Board members shall take office the first day of January of the next year.

Section 2: The President shall appoint a nominating committee of three (3) members, at least one (1) of whom shall be a member of the Board. They will present their list of nominations by notification as specified in Article XII Section 6.

Section 3: Election of Officers and Board members shall be held at the November Club meeting. Nominations will be accepted from the floor. Those receiving the largest number of votes shall be elected.

Section 4: Vacancies occurring between elections must be filled by a special election at a general meeting after which the withdrawal or resignation is made known. Nominations for replacement shall be made by the Board. Nominations shall also be accepted from the floor. Voting shall be conducted per Article XII and the person receiving the largest number of votes will be the new Officer. The newly elected Officer shall take office immediately.

Section 5: Officers and Board members may be removed by a petition signed by at least ten (10) members and upheld by a three-fourths (3/4) majority vote.

Article VI – DUTIES OF THE BOARD AND OFFICERS

Section 1: The Board shall be the governing body of the Club and as such shall formulate and be responsible for all matters of policy. Decisions of the Board shall be reached upon majority vote; and thereupon the President shall execute the decisions so made or the policies so formed.

Section 2: The newly elected President shall call an organizational meeting of the old and new Officers and Board members within 30 days of the election meeting.

Section 3: The President shall preside at all meetings of this Club; shall enforce due observance of the by-laws; shall decide all questions of order; shall sign all official documents that are adopted by the Club; and shall perform all customary duties pertaining to the office of President.

Section 4: The Vice-President shall possess all the powers and assume all duties of the President in the event of the absence, disability, refusal, or failure to act, of the President. The Vice-President shall further assist the President in all functions of that office and shall perform such other duties as are properly assigned by the Board.

Section 5: The Secretary shall countersign all deeds, leases, and conveyances executed by the corporation; shall keep a record of all proceedings of all meetings; keep a roll of members and the current status of these members; shall keep a roll of members present at meetings; accept applications for membership; keep a copy of the Articles of Incorporation and By-laws present at all meetings; carry on all correspondence; read communications received at each regular meeting, and give notice of all meetings.

Section 6: The Treasurer shall receive and disburse all club funds, including dues from members; shall keep an accurate record of all such transactions; and shall give a financial report to the Board and members upon request.

Article VII – MEETINGS

Section 1: There shall be a general Club meeting held monthly. This meeting schedule may be changed, subject to a decision by the Board.

Section 2: Special meetings of the members may be called at any time by the President, provided the entire Club membership is notified in writing of such special meeting ten (10) days prior to the meeting. Notification may be done per Article XII, Section 6. The President shall be required to call a special meeting upon receipt of a written request signed by ten (10) or more members.

Section 3: The Board shall meet in a general or special meeting in order to transact business. The Board shall normally meet once a month. All meetings of the Board shall require ten (10) days notice to the Board members.

Section 4: All meetings of the Board shall be open to all Club members.

Article VIII – DUES

Section 1: The annual dues will be recommended by the Board and approved by the members. The dues year shall be January 1 to December 31. Pro-rated dues will only apply to new licensees or those new in the area. The Board has the authority to accept dues paid from any valuable consideration.

Article IX – AMENDMENTS

Section 1: The by-laws may be amended by a two-thirds (2/3) majority vote at a general meeting, providing that members shall have been notified per Article XII, Section 6. Proposals for amendments shall be submitted in writing to a Club Officer.

Article X –RULES

Section 1: Roberts's rules of Order shall govern all proceedings of this Club.

Article XI – BUDGET AND REPORTING

Section 1: The Board shall give an annual report to the members on the activities of the Club with a financial report including the receipt and disbursement of Club funds. The Board shall present an annual budget after receiving input from committee members and members at large. The members shall vote upon said budget within the guidelines of said budget. A vote of the members will not have to be given again unless the budget is changed materially or exceeded in total.

Article XII –VOTING

Section 1: Only members in good standing shall be entitled to vote.

Section 2: All voting shall be by majority vote of the members present, unless specially stated otherwise in these articles.

Section 3: Voting for the election of the Board and Officers; expulsion of a member; Board member or Officer; adoption or amendments of the By-laws; approval of the annual budget and dues; and other issues as designated by the Board shall be conducted as stated below in Section 4 through 6.

Section 4: Voting on matters specified in Section 3 of this Article shall be by secret ballot of members in attendance and by members Proxies.

Section 5: A Proxy shall be included with the notification as specified in Section 6 below. Proxies may be given to a Club Officer or any other member by mail or in person. Proxies may be specific or general. The form of the proxies, ballots and balloting procedures shall be determined by the Board.

Section 6: Notification to members of the subject matter of any vote to be taken shall be by publication in the OHM TOWN NEWS the issue prior to the meeting in which the voting is to be done. The notification shall include the time, date and place of the meeting in which the vote will be taken. The notification shall be sent no later than seven (7) days prior to the scheduled meeting date.

Membership in **The Bridgerland Amateur Radio Club, Inc. (BARC)** is open to anyone interested in Amateur Radio. You do not need an amateur license to join. Learn more online at <http://www.barconline.org/> or by emailing membership@barconline.org.

The Bridgerland Amateur Radio Club provides the following to its members:

- A repeater system that covers northern Utah from Bear Lake to Salt Lake Valley.
- Events where you can practice your radio skills in a fun learning environment.
- Club meetings are held the second Saturday each month from October to May. An opportunity to meet and learn from other amateur operators.
- Social activities where members can make friends and interact with other members.



Your tax deductible membership supports club activities and the BARC repeater system.



The Bridgerland Amateur Radio Club, Inc.

Membership application for the year 2011

*Dues are in effect January 1, 2011 through December 31, 2011
New Members Only, individual membership dues prorated quarterly
Please indicate if you or family member is an American Radio Relay League (ARRL) member*

Name _____ Call Sign _____ Date Paid _____

ARRL member

P.O. Box _____ Street Address _____

City _____ State _____ Zip Code _____

Home Phone () _____ Work Phone () _____

E-mail _____

(The club's newsletter, THE OHM TOWN NEWS, is sent to the E-mail Address)

Individual Membership - \$25 \$ _____

Addition Family members in same household - \$3 ea \$ _____

Donation for Repeater upgrades / equipment purchases \$ _____

Total \$ _____

Names and Call Signs of additional family members

Name _____ Call Sign _____

ARRL member E-mail _____

Name _____ Call Sign _____

ARRL member E-mail _____

Name _____ Call Sign _____

ARRL member E-mail _____



Bridgerland Amateur Radio Club is an ARRL affiliated club

Mail your completed form and a check to: B.A.R.C., P.O. Box 111, Providence UT 84322-0111 or pay online at <http://www.barconline.org/?q=node/242>

B.A.R.C. is a non-profit organization

**2010 BARC
CHRISTMAS PARTY**

WHEN: 2 DECEMBER, 6:00 P.M.

WHERE: THE BLUEBIRD RESTAURANT

**THE THIRD FLOOR WHERE IT
HAS BEEN IN THE PAST**

**MENU: PRIME RIB AND
CHICKEN TERIYAKI BUFFET
MASHED POTATOES, HOMEMADE
ROLLS W/ BUTTER, APPLE PIE
OR TURTLE CAKE FOR DESSERT**

COKE PRODUCTS TO DRINK

**PRICE: \$16 ADULT, \$14 CHILD
AGE 4-12, UNDER 4YRS FREE.**

**FOR QUESTIONS OR OTHER
INFORMATION CALL TAMMY**

**STEVENS. LAST DAY TO PRE-
PAY NOV. 28TH. PLAN ON COMING**

**AND HAVING A GREAT
TIME WITH YOUR
FRIENDS.**



Questions for Extra Class License

1. (E1A06) What is the maximum power output permitted on the 60 meter band?
 - A. 50 watts PEP effective radiated power relative to an isotropic radiator
 - B. 50 watts PEP effective radiated power relative to a dipole
 - C. 100 watts PEP effective radiated power relative to an isotropic radiator
 - D. 100 watts PEP effective radiated power relative to a dipole
2. (E2A04) What is meant by the term "mode" as applied to an amateur radio satellite?
 - A. The type of signals that can be relayed through the satellite
 - B. The satellite's uplink and downlink frequency bands
 - C. The satellite's orientation with respect to the Earth
 - D. Whether the satellite is in a polar or equatorial orbit
3. (E3A02) What characterizes libration fading of an earth-moon-earth signal?
 - A. A slow change in the pitch of the CW signal
 - B. A fluttery irregular fading
 - C. A gradual loss of signal as the sun rises
 - D. The returning echo is several Hertz lower in frequency than the transmitted signal
4. (E4B15) What happens if a dip-meter is too tightly coupled to a tuned circuit being checked?
 - A. Harmonics are generated
 - B. A less accurate reading results
 - C. Cross modulation occurs
 - D. Intermodulation distortion occurs
5. (E5A15) What is the resonant frequency of a series RLC circuit if R is 56 ohms, L is 40 microhenrys and C is 200 picofarads?
 - A. 3.76 MHz
 - B. 1.78 MHz
 - C. 11.18 MHz
 - D. 22.36 MHz
6. (E6A02) What type of semiconductor material contains more free electrons than pure germanium or silicon crystals?
 - A. N-type
 - B. P-type
 - C. Bipolar
 - D. Insulated gate
7. (E7A09) What logical operation does an OR gate perform?
 - A. It produces a logic "1" at its output if any or all inputs are logic "1"
 - B. It produces a logic "0" at its output if all inputs are logic "1"
 - C. It only produces a logic "0" at its output when all inputs are logic "1"
 - D. It produces a logic "1" at its output if all inputs are logic "0"
8. (E8C06) What is the necessary bandwidth of a 13-WPM international Morse code transmission?
 - A. Approximately 13 Hz
 - B. Approximately 26 Hz
 - C. Approximately 52 Hz
 - D. Approximately 104 Hz
9. (E9D14) Which of the following types of conductor would be best for minimizing losses in a station's RF ground system?
 - A. A resistive wire, such as a spark-plug wire
 - B. A thin, flat copper strap several inches wide
 - C. A cable with 6 or 7 18-gauge conductors in parallel
 - D. A single 12 or 10 gauge stainless steel wire
10. (E0A02) When evaluating exposure levels from your station at a neighbor's home, what must you do?
 - A. Make sure signals from your station are less than the controlled MPE limits
 - B. Make sure signals from your station are less than the uncontrolled MPE limits
 - C. Nothing; you need only evaluate exposure levels on your own property
 - D. Advise your neighbors of the results of your tests

(For answers to test questions see page 14)

BARC Club Officers

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Answers to questions on page 13: 1-B, 2-B, 3-B, 4-B, 5-B, 6-A, 7-A, 8-C, 9-B, 10-B