BARC
BRIDGERLAND AMATEUR RADIO CLUB

THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

April 2011

Some Contents…

ARRL Affiliated

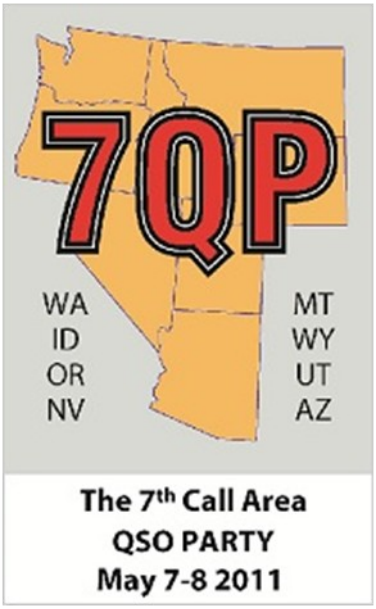
PRESIDENT'S MESSAGE

It is a Friday evening, March 4th, and I turned on my HF radio to listen to the evening HF activity. There was a lot of activity going on with stations calling "CQ Contest, CQ Contest". A contest was in progress, but what contest is it? A quick look at the contest calendar showed several possible contests. A good place to look up amateur radio contests is on www.hornucopia.com/contestcal/index.html. The WA7BNM Contest Calendar provides detail information about amateur radio contests throughout the world, including their scheduled date/times, rules summaries, log submission and links to the official rules as published by the contest sponsors.

After listening to the contest exchange content, it was the ARRL DX Phone contest. Here is a link to the 2011 ARRL DX contest details, www.arrl.org/arrl-dx.

So what is a contest? A contest is where an individual or a team seeks to contact as many other amateur radio stations as possible in a given period of time and exchange information. Rules for each competition define the amateur radio bands, the mode of communication that may be used, and the kind of information that must be exchanged. The contacts made during the contest contribute to a score by which stations are ranked. Contest sponsors publish the results of the contest event.

Contests are a great way to further your other operating goals. There are more stations on the air in a major contest than you'll find in a year of fairly serious scanning the bands for DX (distant stations in a foreign country) or for new states, counties, or whatever.



The 7th Call Area
QSO PARTY
May 7-8 2011

And it is fun to make contacts to those distant stations. Here are some of the countries that I made contacts to during the ARRL DX contest: Ecuador, Brazil, Hawaii (considered a DX station in this contest), Antigua, Costa Rica, Japan, Cayman Islands, Spain, Columbia, New Zealand, Martinique, Suriname, Puerto Rico, Dominican Republic, Aruba, Curacao, Bahamas, Bonaire, Russia, and Argentina. I spent about 6 hours making 63 contacts on the 80, 40, 20, 15, and 10 meter bands. The ARRL DX Phone contest time period was 48 hours from 0000 UTC March 5th to 2400 UTC March 6th.

Want to try your hand at working a contest, making some contacts, learning how to use contest logging software, or just watch and listen to a contest? BARC will be participating in the 7th Call Area QSO Party (7QP) contest on May 7th from 7 AM to after midnight. This is a state QSO party involving the 7th call area states. We will be at the club ham shack in the Engineering Lab Building room EL224 on the USU campus. Drop by and we will get you involved with whatever you would like to do.

The 7QP contest is where 7th call area stations work everyone, others work 7th area stations only. Stations that are in the 7th call area give a signal report and a 5-letter state/county code. There are 259 counties in the 7th call area and each county may be active with at least a fixed, portable, and/or a mobile station. Non 7th area stations give a signal report with their state/province/"DX" two-letter code. More information on 7QP is at www.7QP.org. Also, the Indiana QSO Party and New England QSO Party are happening the

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UPCOMING ACTIVITIES

7th Call Area QSO Party (7QP) contest - 7 April, 7:00 AM – Midnight+

Club Meeting - 9 April, 10:00 AM

ARES Meeting - 20 April, 7:00 PM

RACES VHF Net - 21 April, 8:00 PM

ARRL Idaho State Convention - April 21

Albuquerque Spring Tailgate Swapfest (Albuquerque, NM) - 30 April

Mesilla Valley Radio Club Bean Feed (Las Cruces, NM) - 1 May

Club Meeting - 14 May, 10:00 AM

Mountain Man Rendezvous - 24-25 May

RACES HF Net - 28 May, 8:00 AM 3920 KHz

Wyoming State ARRL Convention (Cheyenne, WY) - 3 June

Little Red Riding Hood Bicycle Race - 4 June

Tour De Cure (Box Elder Co.) - 11 June

RACES VHF Net - 16 June, 8:00 PM

Radio Rocket Recovery - 16-18 June

Wasatch Back Relay - 17 June

Field Day - 25-26 June

MS 150 - 25-26 June

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.

HAM PROFILE

Jeanette Campbell - KF7GSR

I have had the wonderful opportunity of doing many different jobs in my life. I was a waitress for a truck stop (Crossroads over in Tremonton), and a candy striper at the Brigham City hospital. I worked at a couple of gas stations. I drove several different kinds of forklifts for American Greetings for several years loading the warehouse and unloading the trains. I then went to Thiokol building flares for a year. I then changed jobs to quality Inspector at Thiokol. I worked about every program and area. From mixing propellants for shuttle, peacekeeper, D-5 and Pam motors. I worked in assembly and in casting. After the 1986 Challenger explosion, I started working in home health. Then for two years as a quilter. In 2001, I went back to school and got my BSN in Nursing. I was working as a labor and delivery nurse at Ogden Regional Hospital until I needed to take family leave for my husbands double lung transplant. This time home with my husband has allowed me to follow an interest of the Ham radio. My husband got his license a couple of years ago and encouraged me to get mine. I am enjoying myself very much at this time, and desire to learn much more involving ham radio. I just received my general license. Shirley allowed me to do the Ladies net for the month of March. I am grateful for all those in the BARC group who have continuously encouraged me and allowed me to grow. I learn slowly, not having any electronic basics. My next project is to learn to solder, and put together Anderson connectors.

I have been married to my eternal love for 25 years. We have one daughter who is married and lives in Taylorsville. Our two grandchildren are the joys of my husband's and my life. I enjoy gardening and cooking food for my husband. I love books and music. I taught piano lessons for several years and loved working with the youth. Presently I have been called as our LDS Ward's Communication Specialist. Every other Sunday we have a net call in with the FRS radio from the block captains. Still some work to be done there. I volunteer for the Red Cross teaching CPR classes, and for the Medical Reserve Corps. I have been a CERT for 5 years. I believe very strongly in emergency preparation.

Thanks so much for all the help you Elmers continue to give me and my husband. Looking forward to working with you all again for the races and camping for field day!

(Presidents Message Continued from page 2)

same weekend, and those stations will be giving their appropriate exchange. It is fun to see what counties, states, and DX stations that can be contacted.

With the increased sunspot activity, the sun puts out radiation that charges particles in the earth's ionosphere. Radio waves bounce off of (refract from) these charged particle, and the denser these clouds of ions, the better the HF propagation. Many have noticed that the upper HF bands are also becoming active. It will be interesting to see what the conditions are like at the time of the contest. Those distant stations might be booming in on all the HF bands.

Here is a conversion table from Coordinated Universal Time (UTC) and also known as Greenwich Mean Time (GMT) to Mountain Time that I made so I could figure out what the UTC was in local time. Mountain Time is a number of hours behind UTC depending if Standard or Daylight Savings time is being used. If a contest starts at 0000 UTC on March 5th, the local time would be 5 PM MST on March 4th. If a contest starts at 1800 UTC March 26th, the local time would be 12 Noon MDT on March 26th.

Now for some Trivia Questions on Time (with answers).

Why is UTC used as the acronym for Coordinated Universal Time instead of CUT?

In 1970, the Coordinated Universal Time system was devised by an international advisory group of technical experts within the International Telecommunications Union (ITU). The ITU felt it was best to designate a single abbreviation for use in all languages in order to minimize confusion. For example, in English the abbreviation for coordinated universal time would be CUT, while in French the abbreviation for "temps universel coordonné" would be TUC. To avoid appearing to favor any particular language, the abbreviation UTC was selected.

What is Greenwich Mean Time (GMT)?

Greenwich Mean Time (GMT) originally referred to the mean solar time at the Royal Observatory in Greenwich, England. As an astronomical time scale, it followed the irregular motion of the Earth. The modern term for this astronomical time is UT1. The term GMT is now more commonly used to refer to the time zone at the prime meridian (0° longitude), in which case it is being used as a local representation of Coordinated Universal Time (UTC) and not UT1. However, UTC is adjusted with leap seconds to always be within less than one second of UT1, so either use of GMT can be considered equivalent to Coordinated Universal Time (UTC) when fractions of a second are not important.

What was the International Meridian Conference?

In October 1884 at the behest of the President of the United States of America, 41 delegates from 25 nations met in Washington DC for the International Meridian Conference. At the conference the following important principles were established:

UTC / Mountain Time

UTC-7 = MST UTC-6 = MDT

* previous day

UTC (GMT)	MOUNTAIN STANDARD TIME		MOUNTAIN DAYLIGHT TIME	
0	5 pm *	17	6 pm *	18
1	6 pm *	18	7 pm *	19
2	7 pm *	19	8 pm *	20
3	8 pm *	20	9 pm *	21
4	9 pm *	21	10 pm *	22
5	10 pm *	22	11 pm *	23
6	11 pm *	23	12 mid	0
7	12 mid	0	1:00 AM	1
8	1:00 AM	1	2:00 AM	2
9	2:00 AM	2	3:00 AM	3
10	3:00 AM	3	4:00 AM	4
11	4:00 AM	4	5:00 AM	5
UTC (GMT)	**MOUNTAIN STANDARD TIME**		**MOUNTAIN DAYLIGHT TIME**	
12	5:00 AM	5	6:00 AM	6
13	6:00 AM	6	7:00 AM	7
14	7:00 AM	7	8:00 AM	8
15	8:00 AM	8	9:00 AM	9
16	9:00 AM	9	10:00 AM	10
17	10:00 AM	10	11:00 AM	11
18	11:00 AM	11	12 Noon	12
19	12 Noon	12	1:00 PM	13
20	1:00 PM	13	2:00 PM	14
21	2:00 PM	14	3:00 PM	15
22	3:00 PM	15	4:00 PM	16
23	4:00 PM	16	5:00 PM	17

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(Presidents Message Continued from page 5)

1. It was desirable to adopt a single world meridian to replace the numerous one's already in existence.
2. The Meridian passing through the principal Transit Instrument at the Royal Observatory at Greenwich was to be the 'initial meridian'.
3. That all longitude would be calculated both east and west from this meridian up to 180°.
4. All countries would adopt a universal day.
5. The universal day would be a Mean Solar Day, beginning at the Mean Midnight at Greenwich and counted on a 24 hour clock.
6. That nautical and astronomical days everywhere would begin at mean midnight.
7. All technical studies to regulate and extend the application of the decimal system to the division of time and space would be supported.

What is Aluminum and 3.7 billion years?
www.nist.gov/pml/div688/logicclock_020410.cfm

Well that's enough time stuff. Sometime there is not enough time in a day to do the things I would like to do.

May 7th will be here in no time. Join the fun and excitement of working the 7QP contest. See you there.

73,

Cordell

KE7IK

The ARRL Letter for March 17, 2011

Amateur Radio in Space: Hams Invited to Track Satellites

In November 2010, five research satellites were carried to orbit aboard a Minotaur V rocket from Kodiak Island, Alaska. Two of these satellites -- FASTRAC 1, known as "Sara Lily" and FASTRAC 2, referred to as "Emma" -- entered orbit as a single nanosatellite, but on March 15, scientists sent the command to have them separate. According to FASTRAC Student Program Manager Sebastian Munoz, KE5FKV, students at the University of Texas will be confirming the separation as the satellites pass: "We started one of the most exciting phases of our project by separating both of our girls so that they can compute on-orbit real-time relative navigation solutions while both of them are freely drifting from one another." Munoz said that they will continue to update the satellites' two line elements (TLEs) on their website for those radio amateurs interested in tracking the two nanosatellites. "I want to thank the ham community all over the world for supporting our project," Munoz said. "Your support has been incredible and we really value it. We really appreciate all of your help so far and we hope that we can continue to count on it."

The ARRL Letter for March 31, 2011

Public Service: Hams Help When Phones Fail at Southern California Hospital

When nurses and other caregivers picked up their phones at Children's Hospital of Orange County in California in the early morning on March 21, there was no dial tone. A power surge caused the central processor in the hospital's phone switch to fail. Following established procedures, the lead operator at the hospital switchboard immediately activated the Hospital Disaster Support Communications System, using an off-switch tie-line to reach April Moell, WA6OPS, head of this ARES® group that specializes in helping hospitals when their communications fail. Read more here.

Public Service : Western Pennsylvania Hams Respond as Tornado Sweeps Through Area

At approximately 4:30 on the afternoon of Wednesday, March 23, severe thunderstorms started to roll into Westmoreland County, Pennsylvania, producing golf ball-sized hail and heavy winds. Members of the Westmoreland County Public Service/ ARES® group began to meet on the W3CRC repeater in Derry, Pennsylvania, which serves as the main ARES®/SKYWARN repeater in Westmoreland County. Soon after, the National Weather Service issued a tornado warning for the area and the Public Service Net was opened formally at 5 PM. Walter Bashaw, W3ZEH, began taking check-ins and reports of severe weather, relaying them to the NWS in Pittsburgh. Read more here.

This tornado -- as seen just outside of Pittsburgh -- swept through Western Pennsylvania on March 23, destroying at least 30 homes and damaging another 90. [Photo courtesy of Rebecca Mink and Rabe Marsh, W3TNU]

NCVEC Deletes Question from Amateur Extra Question Pool

Due to the FCC revising the rules concerning Spread Spectrum, the Question Pool Committee of the National Council of Volunteer Examiner Coordinator (NCVEC) has decided to delete a question from the Amateur Extra class question pool. According to QPC Chairman Rol Anders, K3RA, as of April 29 when the new Spread Spectrum rule change goes into effect, the answer to question E1F13 in the Amateur Extra class question pool will no longer be correct . Read more here.

New Mars Rover to Feature Morse Code

As the Jet Propulsion Laboratory (JPL) builds the next Mars rover -- this one is named *Curiosity* -- to deploy to the red planet in the fall of 2011, they're having a little fun with it. Back in 2007 when the *Curiosity* team was putting together the rover, its wheel cleats had a raised pattern with the letters "JPL," leaving a little stamp of the rover's birthplace everywhere it rolled. "At the time, I asked whether the real rover would have those wheels, and they said, no, they weren't going to get to advertise JPL with each turn of each of the rover's six wheels; the real rover would have some other pattern," said Emily Lakdawalla of The Planetary Society in her blog. Lakdawalla is the organization's Science and Technology Coordinator.

JPL's Mars Science Laboratory Lead Engineer Jaime Waydo with Curiosity -- and the rover's old wheels. [Emily Lakdawalla, Photo]

Lakdawalla said that there is nothing special about the shapes of the markers in *Opportunity*'s wheels; they are just square holes through the wheels through which the wheels were bolted to the lander during cruise and landing." *Opportunity* is the name of the rover that went to Mars back in 2003. "But *Curiosity* didn't need holes in its wheels for attaching to any lander -- there isn't one. So the engineers got to make the markers in any shape they wanted to."

But in March 2011, she saw a video of the rover as it is today: "I had to chuckle at those 'visual odometry markers' [on its tires]. Before I explain why, I'll point out that they really are useful things to have in rover wheels. The repeating pattern of the 'visual odometry markers'...makes it fairly easy for both the rover and human operators to determine visually how far the rover has roved using rear-view imagery."

So what pattern did JPL choose to put on *Curiosity*'s wheels? One that Lakdawalla called "very amusing. The holes are in a pattern of short squares and longer rectangles -- almost like dots and dashes. Morse code." And what does it spell out in Morse code? JPL.

The tires on the new Mars rover -- set to launch in November or December 2011 -- will display the letters JPL in Morse code. [Photo courtesy of NASA/JPL]

According to JPL, *Curiosity* is about the size of a small SUV -- 10 feet long (not including the arm), 9 feet wide and 7 feet tall -- or about the height of a basketball player -- and weighs 2000 pounds. It features a geology lab, rocker-bogie suspension, a rock-vaporizing laser and lots of cameras. *Curiosity* will search areas of Mars for past or present conditions favorable for life and for conditions capable of preserving a record of life. It is set to launch between November 25-December 18, 2011 from Cape Canaveral, Florida and will arrive on Mars between August 6-20, 2012. The prime mission will last one Mars year, or about 23 Earth months

On the Air : NIST to Conduct Time and Frequency User Survey

The National Institute of Standards and Technology's (NIST) Time and Frequency Division is conducting a survey to learn more about its users, seeking to determine how the agency can make its services more useful in the future. NIST services include WWV, WWVH and WWVB, which provide reference time and frequency signals via radio. The NIST also provides the Internet Time Service -- which provides accurate time synchronization to computer systems -- and several other services to offer accurate time information via telephone or web pages. Radio amateurs are encouraged to complete the survey. Read more here.

March 2011 BARC meeting notes:
By Guy Hatch N7WAT

The BARC club "Emergency Communications Conference," held March 12 at 1:00 p.m., focused on preparation for amateur radio service during emergencies. First, we all heard Mr. Rick Williams, Cache County Emergency Manager, present a discussion on ways amateur radio operators can be of assistance in our community during emergency and disaster situations.

We then divided into two sets of special interest groups including:

Theo Thompson presented how we can keep vital electric-powered functions of our homes operating during a power outage with use of a 2000 Watt generator. His extensive experience as an electrician was evident as he explained safely linking a generator into home power wiring. Critical issues concerning keeping generator power from back-feeding into the utility power grid were presented, with recommendations about needed equipment.

Kevin Reeve presented key components of becoming effectively deployable as an emergency communicator and radio operator. Various battery power systems to support radio use were demonstrated. Of special interest was his recently completed "radio-in-a-box" system for quick and effective setup. Useful antennas were also presented and demonstrated.

Tyler Griffiths presented a session on selecting and organizing important items for a radio communications "grab-n-go kit."

Cordell Smart and Ted McArthur demonstrated various means of digital radio communications techniques and equipment, including D-Star, for conveying computer files accurately and quickly in an emergency.

Those attending came away with important information and a renewed enthusiasm for the emergency service aspects of amateur radio.

Club Meeting for 9 April, 2011, 10 AM
Amateur Radio Satellite Communications

Stan Sjol W0KP will be giving a presentation on Amateur Radio Satellite Communications with some facts, equipment needed, and his experiences of using amateur radio communications to/from amateur radio satellites in earth orbit.

There are many amateur radio satellites orbiting the earth. AMSAT (www.amsat.org) is a worldwide group of Amateur Radio Operators who share an active interest in building, launching, and then communicating with other amateur radio operators through non-commercial amateur radio satellites. Most amateur satellites are placed in Low Earth Orbit (LOE) over the poles. These satellites have various modes of operation where communications can be by Morse code, voice, or packet radio, over large distance using line-of-site frequencies in the VHF and UHF spectrum.

See you there. As always, visiting with friends and refreshments after the meeting.

Cordell
KE7IK

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.

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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** _____

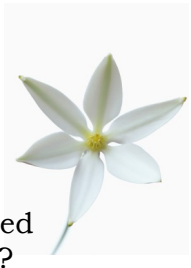
Name _____ **Call Sign** _____
☐ **ARRL member** **E-mail** _____

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 84332-0111
or pay online at http://www.barconline.org/?q=node/242

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

Questions for General Class License



1. (G1A11) Which of the following frequencies is available to a control operator holding a General Class license?
A. 28.020 MHz
B. 28.350 MHz
C. 28.550 MHz
D. All of these answers are correct

2. (G2B03) What should you do if you notice increasing interference from other activity on a frequency you are using?
A. Tell the interfering stations to change frequency since you were there first
B. Report the interference to your local Amateur Auxiliary Coordinator
C. Move your contact to another frequency
D. Turn on your amplifier

3. (G3C08) Why are HF scatter signals in the skip zone usually weak?
A. Only a small part of the signal energy is scattered into the skip zone
B. Signals are scattered from the troposphere which is not a good reflector
C. Propagation is through ground waves which absorb most of the signal energy
D. Propagations is through ducts in F region which absorb most of the energy

4. (G4B04) How is a noise bridge normally used?
A. It is connected at an antenna's feed point and reads the antenna's noise figure
B. It is connected between a transmitter and an antenna and tuned for minimum SWR
C. It is connected between a receiver and an antenna of unknown impedance and is adjusted for minimum noise
D. It is connected between an antenna and ground and tuned for minimum SWR

5. (G5A13) Which of the following devices can be used for impedance matching at radio frequencies?
A. A transformer
B. A Pi-network
C. A length of transmission line
D. All of these choices are correct

6. (G6C06) Which type of integrated circuit is an operational amplifier?
A. Digital
B. MMIC
C. Programmable
D. Analog

7. (G7B13) How is the efficiency of an RF power amplifier determined?
A. Divide the DC input power by the DC output power
B. Divide the RF output power by the DC input power
C. Multiply the RF input power by the reciprocal of the RF output power
D. Add the RF input power to the DC output power

8. (G8A02) What is the name of the process that changes the phase angle of an RF wave to convey information?
A. Phase convolution
B. Phase modulation
C. Angle convolution
D. Radian Inversion

9. (G9B02) What is an advantage of downward sloping radials on a ground-plane antenna?
A. They lower the radiation angle
B. They bring the feed-point impedance closer to 300 ohms
C. They increase the radiation angle
D. They can be adjusted to bring the feed-point impedance closer to 50 ohms

10. (G0A03) Which of the following has the most direct effect on the permitted exposure level of RF radiation?
A. The age of the person exposed
B. The power level and frequency of the energy
C. The environment near the transmitter
D. The type of transmission line used

(For answers to test questions see page 12)

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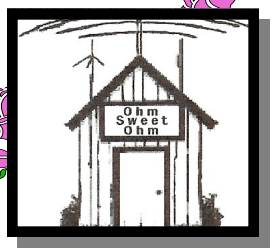

Answers to questions on page 11: 1-D, 2-C, 3-A, 4-C, 5-D, 6-D, 7-B, 8-B, 9-D, 10-B