BARC
BRIDGERLAND AMATEUR RADIO CLUB

THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

March 2013

Some Contents…

ARRL Affiliated

PRESIDENT'S MESSAGE

There were floods in 2011 and fires in 2012. What does 2013 have in store for us? Those are the two common ways Mother Nature reminds us who is in charge. Obviously, she has major tools at her disposal. But we have three things working for us, knowledge of what natural disasters are capable of, the ability to plan, and time to prepare.

There could also be a major earthquake. We have learned about what such an earthquake can do from past emergency preparedness tests such as the Great Utah ShakeOut. An earthquake can disrupt utilities, damage buildings, and bring everything to a standstill. Again this year on April 17 at 10:15 is the Great Utah ShakeOut emergency preparedness exercise.

A person's emergency kit and plan preparations can help him or her get ready for the other natural disasters that can hit Utah. Fire, floods, severe winter storm, extended power outages, extreme heat, drought, landslides, and earthquakes are all possibilities. Just knowing what nature can hurl at you is a great first step toward your personal, family, school, business or community preparedness.

Some of the many hazards to be aware of:

Earthquakes — Can strike at any time. Forecasting is impossible. Start preparing by signing up for the Great Utah ShakeOut at ShakeOut.org/utah. Great ShakeOut earthquake drills help people in homes, schools, and organizations improve preparedness and practice how to be safe during earthquakes.

Flooding — Typically during or after heavy rains. Watch for forecasts.

Wildfires — Typical season runs from spring until fall. Watch for fire weather or red-flag warning forecasts.

There are many other types of disasters, Be Ready Utah provides information to help you better know and be prepared for potential emergencies and disasters.

73,
Cordell
KE7IK

UPCOMING 2013 ACTIVITIES

BARC Club Meeting about **ARES** & **RACES** - 9 March 10:00 AM

ARRL Rocky Mountain Division Net — 13 March, 7:30 PM IRLP Node:9871

RACES HF Net — 16 March 8:00 AM 3920 KHz

ARRL Rocky Mountain Division Net — 10 April, 7:30 PM IRLP Node:9871

BARC Club Meeting - 13 April 10:00 AM

RACES VHF Net — 18 Apr, 8:00 PM 447.00 IRLP 145.49 Promontory 147.18 Snow-bird

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ARRL Rocky Mountain Division Net — 8 May, 7:30 PM IRLP Node:9871

BARC Club Meeting — 11 May, 10:00 AM

RACES HF Net — 18 May 8:00 AM 3920 KHz

Mountain Man Rendezvous — 20-21 May

Little Red Riding Hood Bicycle Race — 1 June

ARRL VEC-listed Local Radio test — 6 June, 7:00 PM (Info on web site)
USU's ASTE building (Room 108 @ 1498 North 800 East, Logan, UT 84321)

Rocky Mountain Division Convention (Estes Park, CO) - 28-30 June
For Info go to: www.RockyMountainDivision.org

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

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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.

Local Radio Nets:

The **Weekly BARC net** is for BARC members and anyone else that would like to check in, held **every Tuesday night at 9:00 p.m.** local time on the Mt Logan BARC Repeater and Linked Systems (146.720)
The **BARC Ladies Net** is every **2nd and 4th Tuesday at 8:00 p.m.** on the BARC Repeater and Linked Systems (146.720). All licensed lady amateur radio operators are welcome to check in. Thanks, Shirley Larsen AD7HL

Utah VHF Society Swap Meet (Sat Feb 23rd)

For those of you who did not make it to the VHF Society swap meet on Saturday, we decided to set up a table to represent BARC this year as we have seen other clubs represented there. We showed our Field Day Video "As Seen on Ham Nation," and had a few items for sale there. We stayed pretty busy talking and interacting with folks from all over the state. It was good to see a few club members as well.

Kevin

The ARRL Letter for February 14, 2013

Ham Radio in Hollywood: *Last Man Standing* to Feature Ham Radio in Upcoming Episode

In an episode to air in mid-March, the hit ABC comedy *Last Man Standing* -- starring Tim Allen as Mike Baxter, KA0XTT -- will prominently feature scenes with cast members using Amateur Radio. This episode will be the first episode to feature Amateur Radio since the middle of the show's first season. According to *Last Man Standing* Producer John Amodeo, NN6JA, the episode called "The Fight" will feature several of the regular cast members talking on the radios. "I can't say much about the episode right now," Amodeo told the ARRL, "But this episode has the most significant use of Amateur Radio in a TV comedy since Herman Munster, W6XRL4, got his ham license." Fans of 1960s television will remember the episode of *The Munsters* (originally aired January 21, 1965) when Herman, on his ham radio, overheard children using walkie-talkies who were pretending to be Martians. Read more here.

In an episode airing in mid-March, Last Man Standing -- starring Tim Allen as Mike Baxter, KA0XTT -- will feature various cast members using Amateur Radio, some from Baxter's home station, seen here. The ARRL provided many of the awards seen on the shack's wall, including 5 Band DXCC and the Diamond DXCC Challenge. See a larger view of the photo here. [Julian Frost, N3JF, photo]

FCC Adopts Sweeping Changes to Experimental Radio Service

In a *Report & Order* (*R&O*) -- FCC 13-15 -- released February 4, the FCC adopted numerous changes to its Experimental Radio Service (Part 5), revising and streamlining its rules. With the new rules, the FCC states that the Experimental Radio Service will have "a more flexible framework to keep pace with the speed of modern technological change, while continuing to provide an environment where creativity can thrive." The new rules will become effective 30 days after being published in the *Federal Register*. No date has yet been set for publication.

The FCC's rules contain numerous provisions for experimentation and development of new radio equipment and techniques. The *R&O* noted that the Experimental Radio Service rules "prescribe the manner in which the radio spectrum may be made available to manufacturers, inventors, entrepreneurs and students to experiment with new radio technologies, equipment designs, characteristics of radio wave propagation, or service concepts related to the use of the radio spectrum. To encourage innovation, the Part 5 rules provide flexibility regarding allowable frequency range, power and emissions. In exchange for this flexibility, experimental operations are not protected from harmful interference from allocated services, and Experimental Radio Service licensees must not cause harmful interference to stations of authorized services, including secondary services."

To accomplish this transition, the FCC -- through the *R&O* -- is creating three new types of Experimental Radio Service licenses: the Program License, the Medical Testing License and the Compliance Testing License. According to the FCC, this new license structure will "benefit the development of new

technologies, expedite their introduction to the marketplace and unleash the full power of innovators to keep the United States at the forefront of the communications industry. Our actions also modify the market trial rules to eliminate confusion and more clearly articulate our policies with respect to marketing products prior to equipment certification. We believe that these actions will remove regulatory barriers to experimentation, thereby permitting institutions to move from concept to experimentation to finished product more rapidly and to more quickly implement creative problem-solving methodologies." Read more here.

MicroHAMS Digital Conference Set for March 23

The MicroHAMS Digital Conference will be held Saturday, March 23 at the Microsoft Studios West Campus in Redmond, Washington. The conference, which focuses on digital networking, will feature two local efforts that are leveraging off-the-shelf wireless networking technology for Amateur Radio: NW-MESH -- a local HSMM MESH program -- and the HamWAN project that is attempting to provide a high speed wireless backbone for the Greater Seattle area. In addition, representatives from NW Digital Radio will give an update on the UDK56K digital transceiver (as seen in the December 2012 issue of *QST*). Due to space limitations, pre-registration is strongly encouraged. The MicroHAMS Digital Conference is an ARRL-sanctioned convention. Find out more about the conference on the MicroHAMS website.

The ARRL Rocky Mountain Division Convention

QST! The 2013 ARRL Rocky Mountain Division Convention takes place June 28-30 (weekend AFTER Field Day) in beautiful Estes Park, Colorado, gateway to Rocky Mountain National Park. This year's convention is being hosted by our good friends in the Colorado section.

This email is to announce that Convention registration is officially open.

This year's Division Convention will be an outstanding event, worth every bit of your while. It will be filled to the brim with enjoyable activities that will suit both brand-new and experienced hams alike. Here is just a HINT of what is being planned:

Ham equipment sales, major manufacturers and vendors, more than 40 technical forums, banquet meals with notable speakers, W1AW/0 special event station, prizes galore, a geocaching transmitter hunt, a midnight Wouff Hong ceremony, fellowship with hams all across the Division and beyond at a comfortable hotel venue, and much more.

The whole family will find plenty to enjoy during the 2013 ARRL Rocky Mountain Division Convention as well. In addition to stunning escapes into Rocky Mountain National Park located just minutes from the event venue, the Convention is also organizing tours of WWV in Boulder and Denver's Air Traffic Route Control Center.

And no Convention is complete without great lineup of special guests and speakers. The 2013 ARRL Rocky Mountain Division Convention is pleased to welcome Ralph Haller N4RH (former Chief of FCC's Private Radio Bureau), Dave Bell W6AQ (Television and Documentary producer), Dave Sumner K1ZZ (ARRL Chief Executive Officer), Chip Margelli K7GA (Renowned DXpeditioner, contester, and CW op seen on the Jay Leno Show), Sean Kutzko KX9X (ARRL Contest Branch Manager), and Brian Mileshosky N5ZGT (ARRL Rocky Mountain Division Director). Additional special guests and speakers are being lined up too.

Details about the 2013 ARRL Rocky Mountain Division Convention, including online registration and vendor information await you at http://www.hamconcolorado.org/wordpress/ The hotel venue and nearby RV park will fill up soon, so everyone is encouraged to register soon.

Please mark your calendars, talk this event up within your clubs, and join numerous hams in Estes Park this June for a non-stop weekend of fun! See you there.

The ARRL Letter for February 21, 2013

Public Service: Hams Across New England and the Maritimes Respond to Blizzard

As a blizzard swept across New England February 9-10, SKYWARN was ready. The storm dumped heavy snowfall -- with some areas receiving upwards of 3 feet of snow -- as blizzard conditions brought hurricane force winds that created power outages and significant tree and power line damage over Southeastern Massachusetts and Rhode Island. ARRL Eastern Massachusetts Section Emergency Coordinator Rob Macedo, KD1CY, helped lead operations at WX1BOX, the Amateur Radio station at the National Weather Service office in Taunton, Massachusetts, where hams were active for 28 continuous hours. Macedo also serves as the ARES SKYWARN Coordinator for the NWS office in Taunton.

Dan Howard, K1DYO, operates from the Barnstable County Mutual Aid Coordination Center on Cape Cod during the blizzard. [Rob Macedo, KD1CY, photo]

The blizzard did not just affect the New England area -- Canada caught the brunt of the storm, as well. According to CANWARN's Jim Langille, VE1JBL, CANWARN members received messages from Bob Robichaud, VE1MBR, at the Atlantic Storm Prediction Centre in Dartmouth, Nova Scotia to let them know of the storm and that there was the possibility of an activation. CANWARN is the Canadian equivalent to SKYWARN. Read more here.

Public Service: American Red Cross to Phase Out Emergency Communication Response Vehicles

The American Red Cross has made the decision to phase out and decommission its Emergency Communication Response Vehicles (ECRVs) due to changes in technology, as well as a new satellite system and other factors regarding the vehicle fleet. "Retrofitting the decade-old vehicles with new equipment is not a good use of donated funds, as the long-term strategy is to move to more portable systems," American Red Cross Disaster Services Technology Manager Keith Robertory, KG4UIR, told the ARRL. "This is consistent with the trends in the telecom and technology industries."

The American Red Cross will be removing the Amateur Radios from the ECRVs as part of the decommissioning process. These radios will either become part of the deployable inventory or provided to the local American Red Cross chapter to build local capacity. Robertory explained that from a radio perspective, the American Red Cross has a variety of different kits for amateur, business and public safety bands covering HF, VHF and UHF with portable radios, mobile units and base stations: "Two-way radio remains a valuable tool, providing communications in the initial days or weeks of a disaster, until normal communications is restored. Each American Red Cross chapter should continue with -- and improve -- the relationship with their local Amateur Radio operators. In a disaster, Amateur Radio will be the fastest deployed radio network because operators already live in the impacted communities." Read more here.

Due in part to new and emerging technology, the American Red Cross will be phasing out its Emergency Communication Response Vehicles (ECRVs).

Amateur-created "Varicode" Adopted as ITU Recommendation

On Tuesday, February 19, François Rancy -- Director of the Radiocommunication Bureau of the International Telecommunication Union -- announced the simultaneous adoption and approval by correspondence of a new Recommendation entitled *Telegraphic Alphabet for Data Communication by Phase Shift Keying at 31 Baud in the Amateur and Amateur-Satellite Services*.

The alphabet -- commonly called "Varicode" because the more frequently used characters (in the English language) occupy fewer bits -- was developed by Peter Martinez, G3PLX, in the 1990s. Martinez was awarded the ARRL Technical Innovation Award for the year 2000 by the ARRL Board of Directors for his development of PSK31, which uses Varicode for transmission efficiency in much the same way as the Morse code. In ITU parlance, it now becomes Recommendation ITU-R M.2034.

Adoption of the Recommendation is the culmination of work conducted in ITU-R Study Group 5 and its Working Party 5A during 2011 and 2012. Working Party 5A is responsible for studies of techniques and frequency usage in the Amateur and Amateur-Satellite Services, as well as certain aspects of the land mobile and fixed services. Read more here.

Australian Amateurs May Lose 2300-2302 MHz

The Australian Communications and Media Authority (ACMA) -- that country's equivalent to the FCC -- has proposed changes to spectrum usage in the 2300-2302 MHz band that will make it off-limits to Australian amateurs as of 2015. The ACMA wants to re-allocate the spectrum to LTE (Long-Term Evolution) wireless data systems, the kind popularly used for mobile broadband applications. The proposed change would give LTE services 100 MHz between 2300 and 2400 MHz.

According to the Wireless Institute of Australia (WIA), this secondary Amateur Radio allocation is the only viable option for Earth-Moon-Earth (EME) contacts between Australia and IARU Region 2 (where the EME activity is on 2304 MHz) or Region 1 (which uses 2320 MHz). If the reallocation goes through, Australian EME activity would then be confined to 2400 MHz and above, where ISM and Wi-Fi equipment are likely to cause interference.

"Amateurs in the United States are in no immediate danger of losing 2300-2305 MHz because the use of the 2300-2400 MHz band by various radio services in this country is quite different from most of the world," explained ARRL Chief Executive Officer David Sumner, K1ZZ. "Unfortunately, our colleagues in many other countries are facing the same challenge as in Australia, as the pressure grows for commercial mobile broadband services." -- *Thanks to Phil Wait, VK2ASD, and the Wireless Institute of Australia for the information*

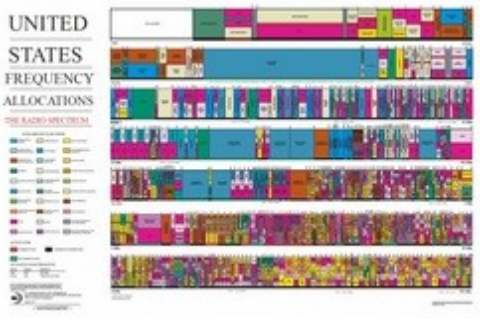
International Space Station Experiences Loss of Communications with Ground Control

At approximately 9:45 AM EST (1445 UTC) on Tuesday, February 19, the International Space Station (ISS) experienced a loss of communication with the ground. At that time, flight controllers in Houston were updating the software onboard the ISS's flight computers when one of the ISS's data relay systems malfunctioned. The primary computer that controls critical station functions defaulted to a backup computer, but it did not allow the ISS to communicate with NASA's tracking and data relay satellites. Mission Control at Johnson Space Center in Houston, Texas was able to communicate with the crew as the ISS flew over Russian ground stations before 11 AM EST (1500 UTC) and instructed the crew to connect a backup computer to begin the process of restoring communications. Once communication was re-established, Expedition 34 Commander Kevin Ford, KF5GPP, reported that the ISS's status was fine and that the crew was doing well. Communication systems were restored as of 12:34 PM EST. -- *Thanks to NASA for the information*

The ARRL Letter for February 28, 2013

FCC News: FCC Proposes More Spectrum at 5 GHz for Unlicensed Broadband

On February 20, the FCC released a *Notice of Proposed Rulemaking* (*NPRM*) in ET Docket No. 13-49, seeking to revise the Part 15 rules governing unlicensed national information infrastructure (U-NII) devices in the 5 GHz band. These devices presently operate in the frequency bands 5.15-5.35 GHz and 5.47-5.825 GHz. They use wideband digital modulation techniques to provide a wide array of high data rate mobile and fixed communications for individuals, businesses and institutions. Slightly different rules apply to 5.825-5.85 GHz. Among the changes being proposed are two additional bands totaling 195 MHz for unlicensed operation: 5.35-5.47 GHz and 5.85-5.925 GHz. The Amateur Radio Service has a secondary allocation at 5.65-5.925 GHz, including an Amateur Satellite Service uplink allocation of 5.65-5.67 GHz and a downlink allocation of 5.83-5.85 GHz. Read more here.



This chart shows the frequency allocations to the radio spectrum in the US (as of August 2011). View a larger version of the chart here.

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 2013

Dues are in effect January 1, 2013 through December 31, 2013
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 Extra Class License

1. (E1A03) With your transceiver displaying the carrier frequency of phone signals, you hear a DX station's CQ on 14.349 MHz USB. Is it legal to return the call using upper sideband on the same frequency?
A. Yes, because the DX station initiated the contact
B. Yes, because the displayed frequency is within the 20 meter band
C. No, my sidebands will extend beyond the band edge
D. No, USA stations are not permitted to use phone emissions above 14.340 MHz

2. (E2A03) What is the orbital period of an Earth satellite?
A. The point of maximum height of a satellite's orbit
B. The point of minimum height of a satellite's orbit
C. The time it takes for a satellite to complete one revolution around the Earth
D. The time it takes for a satellite to travel from perigee to apogee

3. (E3A07) What frequency range would you normally tune to find EME signals in the 70 cm band?
A. 430.000 - 430.150 MHz
B. 430.100 - 431.100 MHz
C. 431.100 - 431.200 MHz
D. 432.000 - 432.100 MHz

4. (E4A11) Which of these instruments could be used for detailed analysis of digital signals?
A. Dip meter
B. Oscilloscope
C. Ohmmeter
D. Q meter

5. (E5A10) What is the half-power bandwidth of a parallel resonant circuit that has a resonant frequency of 1.8 MHz and a Q of 95?
A. 18.9 kHz
B. 1.89 kHz
C. 94.5 kHz
D. 9.45 kHz

6. (E6A13) What do the initials CMOS stand for?
A. Common Mode Oscillating System
B. Complementary Mica-Oxide Silicon
C. Complementary Metal-Oxide Semiconductor
D. Common Mode Organic Silicon

7. (E7A15) What is a D flip-flop?
A. A flip-flop whose output takes on the state of the D input when the clock signal transitions from low to high
B. A differential class D amplifier used as a flip-flop circuit
C. A dynamic memory storage element
D. A flip-flop whose output is capable of both positive and negative voltage excursions

8. (E8A11) What is one use for a pulse modulated signal?
A. Linear amplification
B. PSK31 data transmission
C. Multiphase power transmission
D. Digital data transmission

9. (E9A10) How is antenna efficiency calculated?
A. (radiation resistance / transmission resistance) x 100%
B. (radiation resistance / total resistance) x 100%
C. (total resistance / radiation resistance) x 100%
D. (effective radiated power / transmitter output) x 100%

10. (E0A11) Which of the following injuries can result from using high-power UHF or microwave transmitters?
A. Hearing loss caused by high voltage corona discharge
B. Blood clotting from the intense magnetic field.
C. Localized heating of the body from RF exposure in excess of the MPE limits
D. Ingestion of ozone gas from the cooling system

(For answers to test questions see page 12)

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