



# THE OHM TOWN NEWS

*Voice of the Bridgerland Amateur Radio Club*

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

## September 2013

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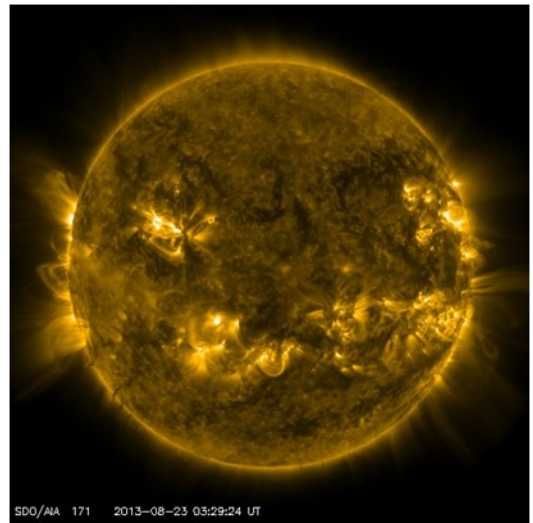


## PRESIDENT'S MESSAGE

I hope everyone has had an enjoyable summer. We had our annual Field Day event in June up Logan Canyon. The location was the same as last year just off the highway on the Swan Flat Road. Field Day results were 679 contacts with 151 on CW, 102 on Digital, and 426 on Phone. We had a good time with operating the radios, a ladies activity on putting together an emergency communications binder, a bunny hunt, an excellent pot luck dinner, and an enjoyable time for some camping. Many thanks to those involved in organizing and helping with the Field Day activities, and those who came to participate in the activities.

In July, maintenance on the Mt Logan repeater site was accomplished. Some months before, it was noticed that the linking between the three repeaters (Promontory, Mt Logan, and Red Spur) was having some problems. After some diagnostic work, it was isolated to Mt Logan where the link radio was not hearing very well. Not knowing if it was the radio, coax, antenna, or a combination of the parts, it was decided to be prepared to replace the link radio and the antenna. With the parts acquired, a trip to Mt Logan was made. The old UHF Mitrek link radio (an early 1980 vintage) was replaced with two UHF CMD750 radios, new 4 cavity pass-reject duplexer, and a Telewave ANT450F2 antenna was installed. The duplexer was tuned on site and the controller was check and adjusted. With those replacements and adjustments, the repeater system is working great.

We are near the peak of Solar Cycle 24 where something big is about to happen on the sun. According to measurements from NASA-supported observatories, the sun's vast magnetic field is about to [flip](#). The sun's magnetic field changes polarity approximately every 11 years. It happens at the peak of each solar cycle as the sun's inner magnetic dynamo re-organizes itself. The coming reversal will mark the midpoint of Solar Cycle 24. Half of 'Solar Max' will be behind us, with half yet to come. A reversal of the sun's magnetic field is, literally, a big event. The domain of the sun's magnetic influence (also known as the "[heliosphere](#)") extends billions of kilometers beyond Pluto. Changes to the field's polarity ripple all the way out to the Voyager probes, on the doorstep of interstellar space. However, as solar physicists have pointed out, 2013's cycle peak has turned out to be one of the weakest observed in the past century, with relatively minimal activity.



During the active part of the solar cycle, sunspots are more prominent where they manifest intense magnetic activity in a localized area. Sunspots have a secondary phenomenon such as coronal loops (prominences) and reconnection events. Most solar flares and coronal mass ejections originate in the magnetically active regions around visible sunspot groupings. Early [Tuesday morning \(Aug. 20\)](#) the sun unleashed a powerful storm and again on [Wednesday \(Aug 21\)](#), sending an enormous cloud of superheated particles rocketing toward Earth. This solar eruption, known as a coronal mass ejection (CME), blasted billions of tons of solar particles toward Earth at a mind-boggling speed of 2 million mph (3.3 million km/h). Here is a [link](#) for frequently asked questions on Solar Storm and Space Weather.

In September we have our end of summer BARC Pot Luck Fall Social on the 5<sup>th</sup> @ 6:00 PM. The location will be announced on the BARC web site. Everyone is invited to this social. You don't have to be a member of BARC to attend this social. This is a way to get to meet those voices you have talked to on the radios in person and have an eye-ball QSO. Just bring a food item to share with the group. Please bring your own plate, eating utensils, and cup. Hope to see you all there. After the social at about 7 PM, there will be a short LOTOJA meeting for last minute updates and to hand out the LOTOJA packets to those who are supporting LOTOJA on September 7<sup>th</sup>.

73,  
Cordell  
KE7IK

**BARC potluck and LOTOJA packet/shirts/mechanic kit/first aid kit handout  
6:00 PM - River Heights City Pavilion. Behind Ryan's Place Park. 500 South 600 East.**



Some recent pictures from Mt. Logan and Beaver Mt.  
(See also pages 5-6)

# UPCOMING 2013 ACTIVITIES

- 5** September, 6:00 PM — BARC Club Meeting & Pot Luck Dinner  
River Heights City Pavilion. Behind Ryan's Place Park. 500 South 600 East  
About 7:00 PM—LOTOJA final meeting & packets/materials distribution
- 
- 7** September — LOTOJA Bicycle Race (\* Kevin, Tyler and Ted) ([Info on web site](#))
- 
- 11** September, 7:30 PM - ARRL Rocky Mountain Division Net IRLP Node:9871
- 
- September — Bike the Bear Bicycle Race ([More info](#))  
“Due to permit issues, this year's Bike the Bear has been cancelled. We are planning on holding the event next year on September 27, 2014”
- 
- 21** September 8:00 AM — RACES HF Net 3920 KHz
- 
- 21** September — Top Of Utah Marathon (\* Tyler, Laurie and Guy) ([Info on web site](#))
- 
- 27-28** September — The Bear 100 (\* Warren Wilde) ([Info on web site](#))  
Managed by Franklin County ARES  
BARC will provide support for the Utah portion of the race
- 
- 10** October, 7:00 PM — ARRL VEC-listed Local Radio test ([Info on web site](#))  
USU's ASTE building (Room 108 @ 1498 North 800 East, Logan, UT 84321)
- 
- 12** October — Swaproberfest and October Club Meeting (\* Bill Neville)
- 
- 17** Oct, 8:00 PM — RACES VHF Net **447.00** IRLP **145.49** Promontory **147.18** Snowbird
- 
- 19-20** October — JOTA-JOTI (BARC is not planning any organized participation)  
56th Jamboree on the air — 17th Jamboree on the Internet ([Info on web site](#))
- 
- 9** November, 10:00 AM — BARC Club Meeting — Club Elections
- 
- 7** December, 7:00 PM — ARRL VEC-listed Local Radio test ([Info on web site](#))

(\* Contact for information or to volunteer to help with club involvement)

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## 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.



Continued pictures from Mt. Logan and Beaver Mt.



# ARRL News and Information

## The ARRL Letter for August 8, 2013

### *Your League: ARRL Introduces Centennial Membership Certificate*

ARRL membership certificates commemorating the League's 100th anniversary in 2014 now are available. Members logged onto the League's [website](#) can generate their own certificates or cards [online](#) for printing. "We want each ARRL member to know that he or she is a part of next year's big ARRL Centennial," says Membership Manager Diane Petrilli, KB1RNF. The certificate maker also produces a replacement membership card. The ARRL thanks past [McGan Award](#) winner Angel Luis Santana, WP3GW, for suggesting the 2014 ARRL Centennial Membership Certificate, which was designed by ARRL Graphic Artist Diane Szlachetka.



## ***Safety First! Harness Saves Canadian Ham After Fall from Tower***

An unidentified ham in Edmonton, Alberta, Canada, avoided serious injury or worse after falling July 16 from a ham radio tower he was disassembling. The man, whom media reports called "a certified tower expert" fell backward from the tower and became trapped about 35 feet in the air. The *Edmonton Journal* quoted District Fire Chief Lorne Corbett.

"He had on the proper harness, that's what saved him," Corbett said. "He also had his legs entangled in the tower itself."

When the rescue team showed up, the man was upside down, and firefighters went up the tower to stabilize him and orient him upright. Firefighters got the man down using a bucket on a fire ladder. Although bruised, he was able to walk to the ambulance.

The ARRL offers [antenna and tower safety tips](#) on its website. Universal Radio also has posted a list of [general recommendations](#) for installing outdoor antennas. -- *The Edmonton Journal*; *The Edmonton Sun*

## **The ARRL Letter for August 22, 2013**

### ***Regulatory: Vanity Call Sign Fee Goes Up August 23!***

The new FCC regulatory fee of \$16.10 to apply for an Amateur Radio vanity call sign will go into effect Friday, August 23, when the new regulatory fee schedule will appear in the [Federal Register](#). Earlier this year the FCC had proposed upping the vanity call sign fee from its current \$15 to \$15.20, but in the [Report and Order](#) in MD Docket 13-140, released August 12, the Commission offered no explanation for the higher fee.

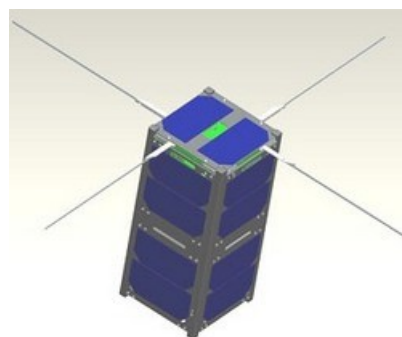
In another change, starting in FY 2014, the FCC will require that all regulatory fee payments be made electronically.

The R&O ordered a broad schedule of new fees and waived the usual 30-day waiting period following *Federal Register* publication, because it feared there would not be time for FY 2013 fees to become effective before the start of the new federal fiscal year on October 1.

The FCC says it expects \$230,230 in revenue to cover the costs of administering the vanity call sign program. It anticipates 14,300 vanity call sign applications.

## ***Ham Radio in Space: Ham Radio Payloads Preparing to Launch***

Two CubeSats carrying SSB/CW and FM voice transponders are scheduled to be launched into a 600 km orbit during the first half of next year. That news came during the [QB50 Project presentation](#) at the AMSAT-UK International Space Colloquium earlier this summer. The QB50 project team has signed a *Memorandum of Understanding* with AMSAT-UK, AMSAT-Francophone and AMSAT-NL to enable two Amateur Radio payloads to fly on two yet-to-be-named "precursor" CubeSats in advance of the main mission, to deploy about 40 double satellites. The CubeSat launch allows for the testing of key satellite and payload components. In addition, the precursor mission allows for experimentation and validation of the QB50 operational concept. The Amateur Radio payloads will become the primary payload of the spacecraft once all QB50-related experimentation has been concluded.



Artist's conception of a QB50 double CubeSat

The AMSAT-F payload for one of the satellites will be an FM voice relay with VHF uplink and UHF downlink. It will also transmit FX25 telemetry at 9.6 kbit. The AMSAT-NL payload on the other precursor satellite will incorporate an SDR-based, linear V/U transponder core. It will provide a telemetry downlink at 1.2 kbit. The QB50 spacecraft generally will have downlinks in the 435-438 MHz Amateur Satellite Service allocation, although some are expected to use 2.4 GHz.



Artist's conception of LituaniaSAT-1

Meanwhile, the Baltic nation of Lithuania is hoping that its first two satellites will be launched later this year from the International Space Station ([ISS](#)). The nanosatellites carrying Amateur Radio payloads could be among the CubeSats sent by payload handler [NanoRacks LLC](#) to the ISS on the [SpaceX](#) CRS-3 mission this November. The [Kaunas University of Technology](#) is developing LituaniaSAT-1, while the [Lithuanian Space Association](#) is working on LitSat-1.

This year marks the 80th anniversary of the [historic flight](#) by Lithuanian pilots Steponas Darius and Stasys Gireenas in the *Lituanica* aircraft. On July 15, 1933, they took off from Floyd Bennett Field in New York and flew across the Atlantic, covering a distance of 6,411 kilometers in 37 hours and 11 minutes. Tragically they perished after crashing in Germany, just 650 kilometers from their destination of Kaunas, Lithuania.

LituaniaSAT-1 will carry a VGA camera, GPS receiver, 9600 bps AX25 FSK telemetry beacon and a 150 mW V/U FM voice transponder. LitSat-1 is planning a U/V linear transponder for SSB/CW communications. --AMSAT News Service/AMSAT-UK



# The ARRL Letter for August 29, 2013

## Public Service: Hams Continue to Support Rim Fire Response

With California's gigantic Rim Fire still raging, Amateur Radio Emergency Service ([ARES](#)) and Radio Amateur Civil Emergency Service ([RACES](#)) volunteers continued to assist local emergency managers and responding agencies in filling communication gaps. [Tuolumne County RACES](#) Radio Officer Phil Fish, WB6GGY, told ARRL that with telephone circuits overloaded and cell service spotty, ham radio is keeping the lines of communication open. ARES-RACES members are helping to support communication between local government and the American Red Cross shelter.

"They were just hungry for hams," Fish said of local emergency management officials. "We've had a great response from the local ham community." Volunteers, he said, have been putting in "some long days."

Tuolumne County ARES EC Carl Croci, NI6Z, said volunteers from Calaveras County ARES also have been pitching in. "We are still staffing the Red Cross Shelter and the community information phone lines with four ARES/RACES operators on the phones and two in the shelters," Croci said August 28. "There are now three shelters open at the Tuolumne County Fairgrounds, and the Red Cross is using FRS radios between the shelters, so the shelter ops are also monitoring those radios as well. The [EchoLink](#) system has seen a decrease in traffic asking about friends and relatives." The Red Cross is sheltering approximately 100 evacuees. Other ARES-RACES volunteers have been helping to handle telephone traffic in the county emergency operations center.

Fish has described the terrain in Tuolumne and Mariposa counties as "very, very, very rugged."

According to the National Interagency Fire Center ([NIFC](#)), the Rim Fire as of August 29 covers nearly 192,500 acres, with nearly 8000 acres burned over in the past 24 hours. The Rim Fire, 30 percent contained, has now claimed more than 110 structures, and fighting it has cost more than \$39 million. The NIFC says the fire has been crowning. The communities of Tuolumne City, Twain Harte, Long Barn, Pinecrest and the Hetch-Hetchy watershed are threatened, as are power lines in the region. Evacuations and road and area closures are in effect. The Rim Fire is not expected to be fully contained for another 10 days or so.

A [series of time-lapse images](#) has been posted that offer a perspective of the Rim Fire's rapid growth.



One of the Expedition 36 crew members aboard the International Space Station used a 50 mm lens to record this view of the massive drought-aided Rim Fire in and around California's Yosemite National Park and the Stanislaus National Forest on August 26. (NASA photo)

## ***Ham Radio in Space: "Ham Video" Transmitter is Now Aboard the ISS***

A Japanese cargo spacecraft has delivered an Amateur Radio on the International Space Station (ARISS) digital TV transmitter to the ISS. The equipment arrived August 9 and is being stored in the space station's *Columbus* module. Gear includes the transmitter, power supply, NASA-provided Canon XF-305 camera, and antenna cables, reports [ARISS-Europe](#) Chair Gaston Bertels, ON4WF, who says the DATV transmitter is being dubbed "Ham Video."



(NASA image)

"Installation will be done by US astronaut Michael Hopkins, KF5LJG, who has been trained for the commissioning of the Amateur Radio digital video equipment," Bertels said in a report posted on the ARISS-EU [website](#). Hopkins will be part of the ISS crew increment heading to the station next month. The 10 W EIRP S-band (2.4 GHz) Ham Video transmitter will use one of the L/S-band "patch" antennas installed on the ISS' *Columbus* module.

Commissioning will involve a series of tests that will be performed over the course of three or four orbits. Bertels says it's possible that the transmitter will send a continuous signal between commissioning steps, offering Amateur Radio ground stations a chance to test and tune their receiving equipment. "The transmissions will be performed in automatic mode, without requiring crew time," Bertels said. "The camera, which runs on a battery, will not be used, and the ground stations will receive a black image."

A preliminary "Experiment Sequence Test" (EST) is planned for August 28-29 involving ARISS ground station IK1SLD in Northern Italy. "IK1SLD, an ARISS telebridge station often used for educational ARISS school contacts on VHF, has been upgraded for S-band reception," Bertels pointed out.

Italian manufacturer, [Kayser Italia](#) has delivered a 1.2 meter dish, a down converter and precision tracking motors, all part of the ESA-funded equipment. "For the EST, the station will receive a DATV signal from a local, low-power S-band test transmitter," said Bertels. The decoded signal will be streamed over the web to the [British Amateur Television Club](#) server, to which BATC has offered ARISS free access. ESA investigators will evaluate reception via the streaming video. "The test transmissions at IK1SLD will cover the different frequencies and symbol rates available on the Ham Video transmitter," Bertels said.

Receiving the DATV signal will be the greater challenge, Bertels says. "[D]ecoding should be possible for a ground station equipped with a 1.2 meter dish, when the ISS is within a range of about 800 to 1000 km," he said in an [overview paper](#) on the project. This would limit the DATV reception window to about 3 or 4 minutes during a favorable pass. "ISS tracking will be far more demanding than it is for receiving VHF signals," he added. According to Bertels, Kayser Italia is to provide five ground stations in Europe.

Once the Ham Video transmitter becomes operational, it will be used for ARISS educational contacts with schools in Europe. There are no immediate plans to deploy downlink video for ARISS contacts with US schools, in part because no North American ground stations have been planned. Read [more](#).  
-- Thanks to ARISS-EU Chair Gaston Bertels, ON4WF; ARISS-EU; Kayser Italia

## Questions for Technician Class License

1. (T1A09) Who selects a Frequency Coordinator?
  - A. The FCC Office of Spectrum Management and Coordination Policy
  - B. The local chapter of the Office of National Council of Independent Frequency Coordinators
  - C. Amateur operators in a local or regional area whose stations are eligible to be auxiliary or repeater stations
  - D. FCC Regional Field Office
2. (T2B09) Which of the following methods is encouraged by the FCC when identifying your station when using phone?
  - A. Use of a phonetic alphabet
  - B. Send your call sign in CW as well as voice
  - C. Repeat your call sign three times
  - D. Increase your signal to full power when identifying
3. (T3B08) What are the frequency limits of the VHF spectrum?
  - A. 30 to 300 kHz
  - B. 30 to 300 MHz
  - C. 300 to 3000 kHz
  - D. 300 to 3000 MHz
4. (T4B04) What is a way to enable quick access to a favorite frequency on your transceiver?
  - A. Enable the CTCSS tones
  - B. Store the frequency in a memory channel
  - C. Disable the CTCSS tones
  - D. Use the scan mode to select the desired frequency
5. (T5B06) If an ammeter calibrated in amperes is used to measure a 3000-milliampere current, what reading would it show?
  - A. 0.003 amperes
  - B. 0.3 amperes
  - C. 3 amperes
  - D. 3,000,000 amperes
6. (T6B08) What does the abbreviation "FET" stand for?
  - A. Field Effect Transistor
  - B. Fast Electron Transistor
  - C. Free Electron Transition
  - D. Field Emission Thickness
7. (T7C11) What is a disadvantage of "air core" coaxial cable when compared to foam or solid dielectric types?
  - A. It has more loss per foot
  - B. It cannot be used for VHF or UHF antennas
  - C. It requires special techniques to prevent water absorption
  - D. It cannot be used at below freezing temperatures
8. (T8A02) What type of modulation is most commonly used for VHF packet radio transmissions?
  - A. FM
  - B. SSB
  - C. AM
  - D. Spread Spectrum
9. (T9A03) Which of the following describes a simple dipole mounted so the conductor is parallel to the Earth's surface?
  - A. A ground wave antenna
  - B. A horizontally polarized antenna
  - C. A rhombic antenna
  - D. A vertically polarized antenna
10. (T0A11) Which of the following is good practice when installing ground wires on a tower for lightning protection?
  - A. Put a loop in the ground connection to prevent water damage to the ground system
  - B. Make sure that all bends in the ground wires are clean, right angle bends
  - C. Ensure that connections are short and direct
  - D. All of these choices are correct

(For answers to test questions see page 12)

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

