



# THE OHM TOWN NEWS

*Voice of the Bridgerland Amateur Radio Club*

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

## February 2017

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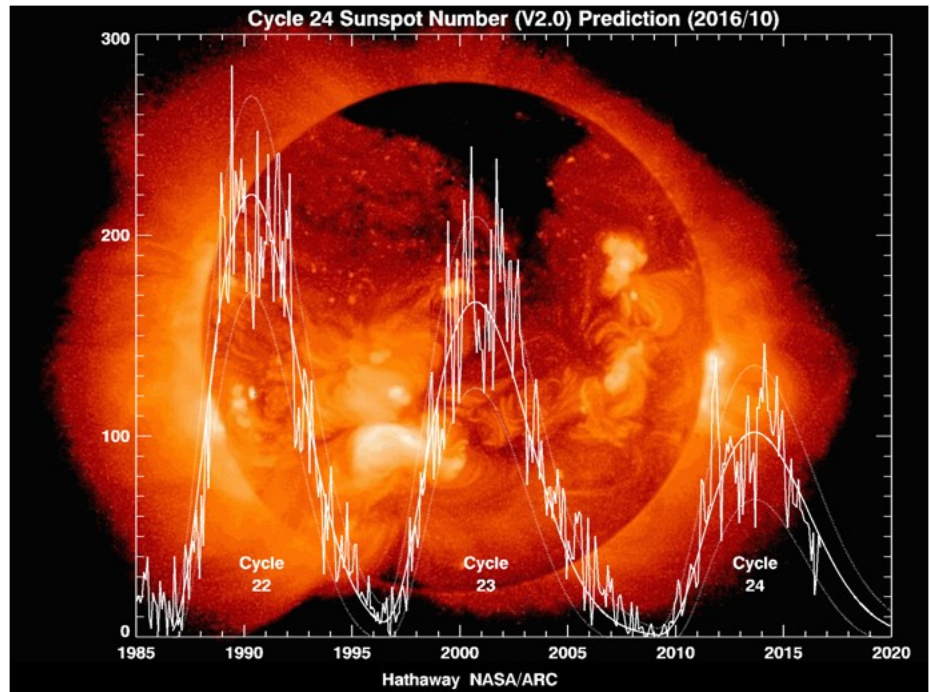
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# PRESIDENT'S MESSAGE

Solar Cycle 24 had its maximum back in 2014 and we are on the downward slope to the minimum. It is predicted that the minimum should happen around 2020, so we have a few more years before the next solar cycle begins. In the graph below, Solar Cycle 24 was smaller than the previous solar cycles and the [weakest solar cycle in more than 100 years](#). Another [individual](#) commented about the continuing decline of solar conditions.

Sunspots occur over regions of intense magnetic activity that produce solar flares and coronal mass ejections (CME). Solar flares and CMEs are energetic events and both produce high energy particles. When those high energy particles are released from a flare or CME and eventually enter



the earth's atmosphere, the high energy particles create more ions, increasing the density of the ionosphere layers. When the ionosphere is dense with ions the bending effect of RF signals is increased, the greater the bending effect, the higher the RF frequencies that will get directed back toward earth, opening the higher frequency bands for ham radio use. With the entire daytime part of the ionosphere being affected by these high energy particles, this is what provides the broad long distance DX around the world.

With the reduced solar activity and lower-than-normal sunspot occurrences during the solar cycle minimums it means that less high energy particles will be produced and the earth's ionosphere will be less effective for skip propagation for the high and medium frequency HF bands. But even with the lower levels of activity, there are still openings that occur in the upper HF bands. Those openings are small and do not generally provide long distance DX but still could be up to a thousand miles or more. These small openings are a result of the everyday proms and filaments that occur on the surface of the Sun that can release small bursts of high energy particles. If these small bursts are directed towards the earth, that small group of high energy particles could interact with a small area in the ionosphere.

Ham radio operators are very much influenced by the number of sunspots. During the solar maximums, worldwide communication is much more likely and easier than in solar minimums. The MUF or maximum usable frequency is higher and stays high longer during the maximums. Worldwide communications up to and including the 10 meter band occur daily and can be accomplished with very modest equipment and power. During the minimums, the

*(Continued on page 4)*

# UPCOMING 2017 ACTIVITIES

- 08** Feb, 7:30 PM - **ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871
- 11** Feb, 10:00 AM-**BARC Club Meeting** Cache County Sheriff's Office 3rd Floor  
Remote Station Control
- 15** Feb, 7:00 PM — Cache County **ARES meeting** at the Sheriff's Office
- 16** Feb, 8:00 PM - **RACES VHF Net** 146.72 Mt. Logan 147.180 Snowbird 147.20 IRLP
- 21** Feb, 6:30-9:00—**Elmer Night** @ Cache County Sheriff's Office 3rd Floor
- 04** Mar, 8:00 AM—**ARRL VEC License Test Session** @ USU Engineering (NEW)  
Building Room **101**, Logan, UT ([More Info Here](#))
- 08** Mar, 7:30 PM - **ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871
- 11** Mar, 10:00 AM - **BARC Club Mtg** — Cache County Sheriff's Office 3rd Floor  
ARES Mini Conference
- 15** Mar, 7:00-9:00 PM — Cache County **ARES meeting** at the Sheriff's Office
- 18** Mar, 8:00 AM — **RACES HF Net** 3920 KHz
- 21** Mar, 6:30-9:00—**Elmer Night** @ Cache County Sheriff's Office 3rd Floor
- 08** Apr, 10:00 AM-**BARC Club Meeting** Cache County Sheriff's Office 3rd Floor  
Types of Radios, Good and Not as Good
- 12** Apr, 7:30 PM - **ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871
- 15** Apr, 3:00 PM—**ARRL VEC License Test Session** @ USU Engineering (NEW)  
Building Room 302, Logan, UT. This test follows the one day General License  
class. ([More Info Here](#))

For more calendar information see the [barconline.org/calendar](http://barconline.org/calendar)

## 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.

*(Presidents Message Continued from page 2)*

MUF stays rather low, and activity on the higher HF bands is rare and difficult.

At the lower end of the HF (High Frequency) spectrum, being the 80/75 M band (3.5-4MHz), the 40 M band (7-7.3 MHz) and to a good extent the 20 M band (14-14.35 MHz), DX, or long distance communication stays rather constant regardless of the sunspot number, since the MUF rarely falls below these frequencies. The bands are usable for some kind of communication during certain parts or for most of the day during the minimums. So, if a Dalton Minimum were to occur, hams would migrate to those bands, as well as the 160 M band (1.8-2 MHz) for activity. But, activity on the 15 (21 MHz), 12 (24MHz) and 10 M (30 MHz) bands would be very difficult or non existence. There could be times of some DX activity in the upper bands, for example on 10 meters with [Sporadic E](#) propagation.

It is very difficult to predict sunspot numbers during the cycles in progress or future cycles. Accurate counts are usually only found after the fact. Predicting the maximums and minimums is much like predicting the weather. I have 3 feet of snow in my yard and was that crazy weather predicted at the beginning of winter? It was around 1600 after the invention of the telescope that several astronomers started to make observations of sunspots. Later in 1848, a Swiss astronomer named Rudolf Wolf came up with the best way to group and count sunspots, and used data from earlier astronomers to reconstruct sunspot counts as far back as the 1755 cycle which he dubbed "Cycle1".

In conclusion, the predictions and theories of the future solar cycle will be very interesting. The forecasters for the next cycle can have many variations based upon how they analyze the previous collected data on the Sun. Could it be similar to cycle 24, smaller than cycle 24, or a Dalton or Maunder minimum? In any case, the long distance DX that was prevalent in past solar cycle maximums will be hard to repeat if the future solar cycles are on a declining pattern.

A few days without a spot? Just remember that 2009 had over 250 days without spots.

73,  
Cordell  
KE7IK

## 2017 Proposed Budget for BARC

General	\$250
Food and Club meeting/potluck	\$350
Field Day	\$400
Swap Meet	\$100
Christmas Party	\$250
Promontory Site Rental	\$600
Pay Pal Fees	\$50
Activity Expenses Expenses needed for organization and support of events, communications, handouts, printing, equipment, etc.	\$500
Grand Prize for BARC activity participation	\$700
Donation to Sedgewick Repeater Systems	\$500
Liability Insurance	\$200
<b>Total Budget</b>	<b>\$3900</b>
<b>Projected Income/Sources</b>	
Dues	\$1800
Donations – Equipment/Repeater/Additional from members, United Way matches, etc.	\$4000

Presented before the members of the club for a vote is the 2017 BARC Budget.  
Voting is for the following

- Approve the BARC base budget as shown above.
- Give Approval to the BARC Board to use club funds in the proposed budget and funds held in reserves as needed to meet the obligations of the club, including activities, and maintenance of the club equipment and repeater systems.

**VOTE:**

\_\_\_\_\_ YES                      \_\_\_\_\_ NO

# Use it, or lose it!

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The Bridgerland Amateur Radio Club, I would dare say, has one of the finest repeater systems in the western United States. The Cache Valley, as a whole, has some of the most technologically advanced and well maintained repeaters that a green back can buy. Besides those located here, because we live in the middle of the Rocky Mountains, we have access to many, many repeaters. From my seat here at my QTH, I am able to easily reach twenty-four different repeaters using a meager 10 watts into a Comet GP-6 placed on the peak of my meager residence here in the mighty mega-metropolis of Nibley Utah. Needless to say, as a ham community, we are a spoiled bunch because we have such easy access to all these fine FM signal relay boxes.

One thing has been troubling me of late. It is very noticeable as I sit here listening (or not listening) to my Yaesu FTM-350 scan through all those repeater frequencies. It is deafening, earth shattering, ear-piercing, resounding dead silence.

Yep. Natta. Not a peep of noise except the occasional burp of CW as a repeater occasionally IDs itself. Tens of thousands of dollars of the most deluxe electronics, plastic, copper, and fiber glass to grace the top of towers and mountain tops doing nothing but sending out CW belches or reminding me what time it is.

We need to use them, folks, or we are going to lose them.

I know times have changed things a bit. When I was first licensed some twenty-five years ago, we had fewer repeaters and repeaters were busy boxes. We used to complain (because that's what old radio guys did best back then, er now, umm...) about how busy they were. We wore them out regularly.

Newer technology has changed amateur radio's use of repeaters. Back in the day, you did not carry a cell phone in your pocket. You used to carry it in your suite case. The battery lasted about 20 minutes and it cost you an arm, a leg, a wisdom tooth, and your first-born child to talk on it for more than two minutes. You could not text on it, get emails through it, or surf that Facebook thingy. You actually used to talk to people on your cell phone.

The word phone is actually defined by Webster as a *speech sound*. Talking. It's funny, we all have cell "phones" now and we hardly every use it to speak any more. If you don't believe me, look at your cell phone bills. You will notice something. Especially if you have teenagers like I do. I have many more text messages used on my phones than an I do phone (speaking) minutes. I don't think my daughter even knows how to answer hers. Every time I call, it goes to voice mail. But if I send a text, I get an instant reply.

But I digress.

Nothing gives a repeater operator, trustee, or committee more enjoyment than having their equipment used. We need to help them with their currently dangerously low dopamine levels. If we don't, they are going to quit maintaining their equipment. Also, studies have shown that low dopamine levels lead to feelings of fatigue, becoming apathetic, moody and being unable to concentrate effectively and eventually leads to mental illness. Wait! Now that I think about, we might just be too late to help. Have you seen Ted, Tyler, Bob and Bill lately? See what I mean.

I guess I am just as guilty as the next guy. I don't get on the repeater enough. I usually call my family on simplex when I want to chat on the radio on my way home from work or ignore the guy asking for a radio check. I am embarrassed that I use my PPT (Push-To-Talk) button as a release to listen button instead of using it for its intended use.

Maybe others don't get on repeaters out of fear. Maybe they feel they will be criticized for doing something incorrectly over the air. If you are one of those people, I want you to remember one thing. They don't call our service Professional Radio. They called it Amateur Radio for good reason. One of our primary purposes it to experiment. So, don't be afraid to try it out. No one is going to jump your case. Chances are greater that the very opposite will happen. You will get some useful friendly free help.

So let us all take a vow today. Today we are all going to commit to using our repeaters more. Get on the radio while you are out and about shopping. Take your handhelds with you camping. Leave the radio on, on your desk and let's wear out the PTT buttons. Let's do our part to contribute to global warming by heating up our radios and wearing out repeaters.

Finally, and most importantly, let's commit to doing our best to save Ted, Tyler, Bob, and Bill. Because the repeater committee is a terrible thing to waste!

By Gary Roberts AG1T

## The ARRL Letter for January 19, 2017

### New "Amateur Radio Parity Act" Bill Introduced in US House of Representatives

[H.R. 555](#) -- a new "Amateur Radio Parity Act" bill -- has been introduced in the U.S. House of Representatives. The bill's language is identical to that of the 2015 measure, H.R. 1301, which passed in the House late last summer but failed to gain the necessary support in the waning days of the US Senate.

As with H.R. 1301, the new measure introduced on January 13 in the 115th Congress was sponsored by Rep. Adam Kinzinger (R-IL), with initial co-sponsorship by Rep. Joe Courtney (D-CT) and Rep. Greg Walden, W7EQI (R-OR). Walden now chairs the House Committee on Energy and Commerce, to which the new bill has been referred. H.R. 555 will get an initial airing in the Subcommittee on Communications and Technology. When H.R. 1301 came up in committee, Walden spoke forcefully in favor of the measure, which ultimately attracted 126 House cosponsors.



US Rep. Adam Kinzinger (R-IL).

"Rep. Kinzinger has again stepped forward to introduce this important legislation," said ARRL CEO Tom Gallagher, NY2RF. "His commitment stems from exposure to what the Amateur Radio community brings to the service of all communities. ARRL and radio amateurs nationwide owe Rep. Kinzinger a resounding 'Thank You!' for his efforts on their behalf."

H.R. 555 calls on the FCC to establish rules prohibiting the application of deed restrictions that preclude Amateur Radio communications on their face or as applied. Deed restrictions would have to impose the minimum practicable restriction on Amateur Radio communications to accomplish the lawful purposes of homeowners associations seeking to enforce the restriction.

## Hamvention Ready to Deal with Anticipated Traffic Flow at New Venue

[Hamvention](#)<sup>®</sup> is ready to deal with the anticipated heavy traffic flow when the event opens on May 19 at its new location, the Greene County Fairgrounds and Expo Center in Xenia, Ohio. Mike Kalter, W8CI, said the all-volunteer Hamvention organizers have turned to professionals to address this aspect of the event. Kalter, who is treasurer of the sponsoring Dayton Amateur Radio Association ([DARA](#)), was [interviewed](#) last week by DX Engineering's Tim Duffy, K3LR.

"We recognized that we needed to reach out to a professional engineering firm that does this all over the country to help us to work with the local government officials, so that we can have a good solid plan to keep the people flowing in," Kalter told Duffy.

Kalter said arrangements have been made to have staging areas for those needing to either offload or load equipment from the indoor exhibit areas or the flea market.

He also pointed out that on-site parking would be free, and that no one will have to park in the mud. Kalter said areas set aside for parking are well drained, and he doesn't anticipate any problems, even if it rains during Hamvention. That goes for the flea market area as well, he said, noting that the arena infield area is used for events in good and bad weather alike.



An aerial view of the Greene County Fairgrounds and Expo Center, the new home of Hamvention. [Greg Ordy, W8WWV, image]

Kalter said Hamvention expects to be able to post the plan for flea market spaces on its website soon. The layout for indoor vendor and exhibitor booths is already available on the Hamvention website. Kalter said that if everyone who attended Hamvention 2016 at Hara Arena shows up again this year, they will find plenty of room at the new venue. Maps are available on the website.

Turning to traffic of a different sort, Kalter noted that Greene County has brought in a high-speed Internet "pipe" to the new venue, and that AT&T will drop telephone lines wherever they're needed.

Kalter said there will be plenty of picnic tables as well as a temporary structure dedicated for socializing. He also promised that Hamvention 2017 will offer "a wide variety of great things to eat." That will include food vendors and food trucks.



DARA Board member Mike Kalter, W8CI, spoke recently with DXEngineering's Tim Duffy, K3LR.

Kalter said it takes some 600 volunteers to make Hamvention happen each year, and the leadership team consists of 86 individuals.

Reflecting its new venue, "Hamvention -- Same Friends, New Home" will be the theme for the 2017 event. Last summer's closure of Hara Arena forced the move to the new location more than 20 miles to the southeast.

The price of admission to Hamvention has gone up slightly; tickets will now cost \$22 for all 3 days (\$27 at the door). Accompanied minors age 12 or younger may attend free. Online ordering is not yet available, but those planning to attend can [order tickets by mail](#). Hamvention, which runs from Friday, May 19, until Sunday, May 21, is expected to attract upward of 25,000 people to the greater Dayton area. [Visit](#) the Hamvention website or [e-mail](#) for more information.

## **Harry K. Wolf, W6NKT, SK at 107; *May* Have Been World's Oldest Active Radio Amateur**

Harry K. Wolf, W6NKT, of Morro Bay, California, has died just a couple of weeks short of his 108th birthday. Wolf *may* have been the oldest active radio amateur in the US, if not in the world, although no official records are maintained. Licensed since 1936, Wolf was an ARRL member and a Life Member of the Quarter Century Wireless Association ([QCWA](#)). Wolf was on the air daily, mostly on 40-meter CW.



Born in Paso Robles, California, Wolf said in his QRZ.com profile that he built his first radio as a young teenager in 1922. He got his ham ticket while living in Arizona, and held the call sign W6NKT for his entire life.

While serving in the US Navy during World War II, Wolf taught navigation to cadets in San Luis Obispo, California. Later, he served for 31 years as a professor of electronics engineering at two University of California campuses, retiring in 1973. Wolf was the founding advisor of the Cal Poly Amateur Radio Club and signed the club's original charter in 1947; in 2009, he donated a Yaesu FTDX-9000D transceiver to the club. After retiring, Wolf went to Hong Kong Polytechnic for 4 years and operated as VS6GF. His nephew, Tim Bryan, said his uncle also taught in Tanzania. After returning to the US, he lived in Florida until 1994, when he returned to Morro Bay.



Harry Wolf, W6NKT, at his station. [Courtesy of Neal Swanberg, KG6AYI]

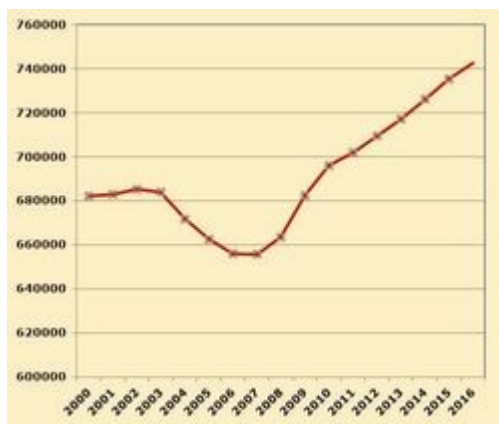
Bryan told ARRL that his uncle was raised on a ranch in the Geneseo area and was once known as the fastest grain sack sewer in San Luis Obispo County, demonstrating the by-then lost art into his hundreds.

Neal Swanberg, KG6AYI, who is secretary of the Estero Radio Club, said Wolf last checked into the county net in late November. "We will all miss Harry's bright smile and good humor," he said. A memorial service is set for Saturday, January 28, at the [Morro Bay Golf Course](#). -- Thanks to Tim Bryan, Neal Swanberg, KG6AYI, and Marcel Stieber, AI6MS

## The ARRL Letter for February 2, 2017

### Another Outstanding Year for Amateur Radio Licensing!

Last year -- 2016 -- was another outstanding one for Amateur Radio licensing, says ARRL Volunteer Examiner Coordinator (VEC) Manager Maria Somma, AB1FM.



Total Amateur Radio licenses in the US from 2000 until 2016. [Per statistics compiled by Joe Speroni, AH0A]

"New Amateur Radio licenses issued were up by 1% over 2015, and this is the third year in a row that the total number of new licenses has exceeded 30,000," Somma reported. She said 32,552 were granted in 2016, 32,077 in 2015, and 33,241 in 2014.

Somma said that while 2014 was a record-setting year for new licenses issued, ARRL VEC "continues to see an elevated interest in obtaining an Amateur Radio license."

The overall trend continues to be up, up, up! The total number of US Amateur Radio licensees has continued to grow each year since the FCC eliminated the Morse code exam requirement in 2007. Over the past decade, the net number of Amateur Radio licensees has risen by nearly 87,000, according to statistics compiled by ARRL Pacific Section Manager Joe Speroni, AH0A.

As of December 31, 2016, the total number of licensees in the FCC database was 742,787, topping the 2015 total of 735,405, but down just slightly from the all-time high of 743,003 reached last November.

Somma said license upgrades were down by 5% compared to 2015 -- 10,617 versus 11,224. "A new Amateur Extra class [question] pool took effect on July 1, 2016, which may have impacted upgrade totals in the second half of the year," she speculated.

As of December 31, according to figures compiled by Speroni, there were 143,337 Amateur Extra licensees, 45,071 Advanced licensees, 172,807 General licensees, 371,560 Technician licensees, and 10,012 Novice licensees. The FCC no longer issues Advanced and Novice class licenses. The General and Technician licensee totals at the end of last year were all-time highs, and the Amateur Extra total was nearly so.



ARRL VEC Manager Maria Somma, AB1FM.  
[Rick Lindquist, WW1ME, photo]

## **New Rookie Roundup Rules Will Mean More Rookies on the Air:**

Changes to the rules for [Rookie Roundup](#) will make it possible for more radio amateurs to qualify for the "Rookie" category. Rookie Roundup is a 6-hour operating event aimed at radio amateurs licensed for 3 years or less. Operators first licensed in 2015, 2016, or 2017 already qualify as Rookies for the next Rookie Roundup, which will be the SSB event on April 17, 1800-2359 UTC.

Starting with the SSB event in April, operators licensed *before* 2015 may enter as Rookies if they made their first Amateur Radio contact during 2015, 2016 or 2017 -- *or* if they have never before made a contact using the mode of the upcoming Rookie Roundup (i.e., SSB for April, RTTY for August, and CW for December). These operators should send 2017 in their exchange, and those qualifying for either of these reasons will be Rookies only for 1 year.

Rookie Roundup is the third Sunday in April (SSB), August (RTTY), and December (CW). Stations send the year they were first licensed as part of the exchange. Rookies attempt to make as many contacts as possible and may work everyone. Non-Rookies may only work Rookies. Mentoring is a big part of this event, multioperator teams can compete, and veteran operators are encouraged to participate!



Team Thompsen: Mason, K7MWT, operates, while his brother Tanner, K7TMT, logs, during the April 2016 Rookie Roundup. [Photo courtesy of Todd Thompsen, W7TAO]

## **AM Rally Set for April 1-3 -- No Fooling!**

Ever wonder what that "AM" button is for on your transceiver? Well, if you don't know about full-carrier amplitude modulation (AM) or have never used it on the air, you'll get the chance during the [AM Rally](#), April 1-3, on the HF bands between 160 and 10 meters (except 30, 17, and 12 meters) plus 6 meters.

Amateur Radio voice-mode transmissions on the HF bands into the 1960s were AM, the same mode that used to predominate in radio broadcasting. Single-sideband (SSB), a form of AM, gradually took over the bands, although not without some pushback! Today, a group of dedicated radio amateurs keep the magic flame alive, getting on AM frequently, and for many of them, AM is their primary operating mode. The AM Rally gives the uninitiated a chance



to dip a toe into the pool, so to speak.



Clark Burgard, N1BCG, operated AM during the "n1BCG" transatlantic reception commemorative event in December.

A cooperative event organized by AM, SSB, and, yes, even CW operators, the AM Rally aims to encourage fellow operators to take this "sister mode" for a spin, make a few contacts, and have a shot at earning some nice certificates.

"We plan to make the AM Rally fun for everyone, but we also want to help ops who might be new to the mode get their rigs set up and sounding the best they can in time for the event," said Clark Burgard, N1BCG, who is spearheading the event with Steve Cloutier, WA1QIX, and Brian Kress, KB3WFV. "Whether your rig is software defined, solid state, vacuum tube, hybrid, homebrew, or broadcast surplus, you'll be a welcome part of the AM Rally."

The [event website](#) has complete AM Rally details, contact information, award categories, logging, and tips on how to get the most out of your station equipment in AM mode.

The AM Rally begins on Saturday, April 1 at 0000 UTC (Friday, March 31, in US time zones) and concludes at 0000 UTC on Monday, April 3.

It's open to all radio amateurs capable of transmitting full-carrier AM, using any type of equipment, from vintage to bleeding edge. The event is sponsored by Radio Engineering Associates ([REA](#)), in cooperation with ARRL, which supports all modes of Amateur Radio operation.

If you like to get on the air and have fun and now operate -- or would like to operate -- AM mode, then you're good to go!

Participating stations earn 1 point for each station worked per band, and you may work the same station on more than one band. They also earn 1 point for each state, Canadian province/territory, or DXCC entity worked. *Both* stations must be using AM for a contact to count.

Certificates will be awarded to stations scoring the highest number of points in each of the five power classes, regardless of rig category, both for most contacts and most states/provinces.

"All it takes is a turn, push, or click to participate!" There's also plenty of time to dig out and dust off that old AM-capable tube gear sitting in your attic or basement.



AM-mode aficionado Steve Cloutier, WA1QIX, posted this photo of his shack on his QRZ.com profile.

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/>.

Students receive free membership while they are in school.

BARC provides the following to its members:

- A repeater system that covers northern Utah from Bear Lake to Salt Lake Valley.
- Public Service Events where you can practice your radio skills in a fun learning environment.
- Club meetings are held the second Saturday each month; October, November and January through 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 2017

*Dues are in effect January 1, 2017 through December 31, 2017*

*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 \_\_\_\_\_

Phone (     ) \_\_\_\_\_

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

**Student Membership** (no cost while you are in school, give school name and year graduating)

\_\_\_\_\_ Your School \_\_\_\_\_ Year Graduating

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 \_\_\_\_\_

E-mail \_\_\_\_\_  ARRL member

Name \_\_\_\_\_ Call Sign \_\_\_\_\_

E-mail \_\_\_\_\_  ARRL member

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://barconline.org/join-barc/> via PayPal

*B.A.R.C. is a non-profit 501(c)(3) organization*



Bridgerland Amateur Radio Club is an ARRL affiliated club

## Questions for The Extra Class License

1. (E1F01) On what frequencies are spread spectrum transmissions permitted?
  - A. Only on amateur frequencies above 50 MHz
  - B. Only on amateur frequencies above 222 MHz
  - C. Only on amateur frequencies above 420 MHz
  - D. Only on amateur frequencies above 144 MHz
2. (E2E04) What is indicated when one of the ellipses in an FSK crossed-ellipse display suddenly disappears?
  - A. Selective fading has occurred
  - B. One of the signal filters is saturated
  - C. The receiver has drifted 5 kHz from the desired receive frequency
  - D. The mark and space signal have been inverted
3. (E3B05) Which amateur bands typically support long-path propagation?
  - A. 160 meters to 40 meters
  - B. 30 meters to 10 meters
  - C. 160 meters to 10 meters
  - D. 6 meters to 2 meters
4. (E4C07) What does the MDS of a receiver represent?
  - A. The meter display sensitivity
  - B. The minimum discernible signal
  - C. The multiplex distortion stability
  - D. The maximum detectable spectrum
5. (E5C08) What coordinate system is often used to display the phase angle of a circuit containing resistance, inductive and/or capacitive reactance?
  - A. Maidenhead grid
  - B. Faraday grid
  - C. Elliptical coordinates
  - D. Polar coordinates
6. (E6C05) What is an advantage of CMOS logic devices over TTL devices?
  - A. Differential output capability
  - B. Lower distortion
  - C. Immune to damage from static discharge
  - D. Lower power consumption
7. (E7B16) What is the effect of intermodulation products in a linear power amplifier?
  - A. Transmission of spurious signals
  - B. Creation of parasitic oscillations
  - C. Low efficiency
  - D. All of these choices are correct
8. (E8C08) How does ARQ accomplish error correction?
  - A. Special binary codes provide automatic correction
  - B. Special polynomial codes provide automatic correction
  - C. If errors are detected, redundant data is substituted
  - D. If errors are detected, a retransmission is requested
9. (E9C13) What is the main effect of placing a vertical antenna over an imperfect ground?
  - A. It causes increased SWR
  - B. It changes the impedance angle of the matching network
  - C. It reduces low-angle radiation
  - D. It reduces losses in the radiating portion of the antenna
10. (E0A07) How may dangerous levels of carbon monoxide from an emergency generator be detected?
  - A. By the odor
  - B. Only with a carbon monoxide detector
  - C. Any ordinary smoke detector can be used
  - D. By the yellowish appearance of the gas

(For answers to test questions see bottom of page [14](#))

# BARC Club Officers

## *President*

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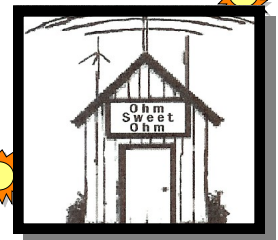
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