



# THE OHM TOWN NEWS

*Voice of the Bridgerland Amateur Radio Club*



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

## December 2015

**Merry Christmas**

**Happy New Year**

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ARRL Affiliated



# **PRESIDENT'S MESSAGE**

The year is in its final month and it is amazing how quickly the year flies by. I would like to take this opportunity to thank everyone for their help and support during the past year, especially the officers and board, and all of the efforts from the many individuals in their support for the club, activities, and events. Each one of you are important because we could not have successful activities and events without you. Thanks to all of you.



*QST* is celebrating its 100<sup>th</sup> year this month. *QST* is a monthly publication and is the official journal of the America Radio Relay League (ARRL). The name of the magazine is derived from the radio Q signal that means "calling all stations". The magazine was first published in December, 1915, and has been continuously published since May, 1919. Supplemental content to the magazine is available on the ARRL web site, including a complete archive in PDF format, available to ARRL members starting in 2008.

The magazine was first published in December 1915, with its first three issues financed by American Radio Relay League founder Hiram Percy Maxim and secretary Clarence D Tuska, with an expectation that increased membership would finance its continued existence. In October 1916, the editors announced the formation of The *QST* Publishing Company.

Publication of *QST* was temporarily suspended after the September 1917 issue. In April 1917, the United States government, following its entrance into World War I, banned all amateur radio activities, and a large percentage of the magazine's subscribers had entered military service. The ban on amateur radio was lifted after the conclusion of the war. *QST* returned in May 1919 with no cover, billed as "ARRL Special Bulletin" and only 8 pages long. At a meeting in New York on March 29, a group that included Maxim, Tuska, and nine others decided to finance its return in this form and make a plea for membership and subscription renewals. The June 1919 issue, still without a cover, announced that the war time ban on receiving had been lifted. Finally, in July 1919, *QST* resumed its previous format, although amateurs would not be permitted back on the air until that fall, when a supplement to the October issue proclaimed "BAN OFF". By September 1920, *QST* was back up to 100 pages, a size not seen since April 1917.

Publication continued throughout World War II, despite amateur radio's hiatus by order of the U.S. government. During both wars, amateurs were in high demand as military radio operators, and *QST*'s staff pitched in for the war effort. Today, *QST* includes projects for the amateur radio enthusiast, pictures, articles, columns, and reports on ARRL affairs. Particular interest is given to amateur radio's role in emergency communications. Much of *QST*'s editorial content in the form of articles, reports, and events notifications still comes directly from ARRL members.

Again, thanks to everyone for your support of the Bridgerland Amateur Radio Club. Our club has the most outstanding members and participation in amateur radio in the area.

Have a safe December and Happy Holidays.

73,  
Cordell  
KE7IK



# UPCOMING 2016 ACTIVITIES



## Merry Christmas

- 09** January 10:00 AM — BARC Club Meeting - Repeater Antennas, lightning protection, grounding, etc.
- 13** January, 7:30 PM — ARRL Rocky Mountain Division Net IRLP Node: 9871
- 16** January, 8:00 AM — RACES HF Net 3920 KHz
- 20** January, 7:00 PM — Cache County ARES meeting at the Sheriff's Office

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



### November BARC Club Meeting Election Results

At the November club meeting the elections were held for the 2016 Officers and Board Members for the BARC club. For the offices of President, Vice President, Secretary and Treasurer, the current persons were re-elected. There were nominations from the floor for Board Member positions and then the election was taken by secret ballot. There were 4 Board Members elected and the results of the elections are:

President:	Cordell Smart	KE7IK
Vice President:	Ted McArthur	AC7II
Secretary:	Tammy Stevens	N7YTO
Treasurer:	Kevin Reeve	N7RXE
Board Members:	Laurie Littledike	KF7DKM
	Tyler Griffiths	N7UWX
	Mitch Smith	
	Richard Elwood	



# BARC Christmas Party

The December club meeting was the Christmas dinner held at The Bluebird in Logan on December 3rd. There were quite a few that came and the dinner was great. It was a Chicken and Prime Rib buffet dinner with all the trimmings and desert. If you missed it you missed out! There were drawings for several small prizes that were given out including a tracker with GPS, a soldering station, some volt meters, and several other goodies. They also had the big drawing held for everyone that participated in any activities this year. The winner was Darwin Pitcher, KF7EZR from Lewiston, and his awards was a D710 radio. Some of the other awards that were given out were **The Spirit of Amateur Radio** that went to Brandon Tibbits KD7IHW, **The Presidents Service Award** that went to Theo Thomson K7TWT, and **The Presidents Leadership Award** that went to Guy Hatch N7WAT.

## 2015 Activities List



<b>Little Red Riding Hood – May 20<sup>th</sup></b> 53 people      A few out of the areas	<b>Russ Leikis</b> <b>636 hours</b>
<b>Wasatch Back Relay – June 19<sup>th</sup></b> 11 people	<b>Tyler Griffiths, Russ Leikis</b> <b>165 hours</b>
<b>Rocket Recovery – June 23<sup>rd</sup> – 28<sup>th</sup></b> 14 people	<b>Guy Hatch, Brandon Tibbits</b> <b>396 hours</b>
<b>Field Day – June 27<sup>th</sup> – 28<sup>th</sup></b> 20 people      A few out of the areas	<b>Ted McArthur, Cordell Smart</b> <b>470 hours</b>
<b>Rotary RAW – July 18<sup>th</sup> (Ride Around the Wellsvilles)</b> 16 people      9 from Box Elder County	<b>Tyler Griffiths</b> <b>96 Hours</b>
<b>Cache Gran Fondo - July 11<sup>th</sup></b> 19 People	<b>Mark Pontius KG7IQH, Howard Trexler N7YUG</b> <b>152 Hours</b>
<b>Top of Utah 1/2 Marathon – August 22<sup>nd</sup></b> 20 people	<b>Laurie Littledike, Tyler Griffiths</b> <b>120 Hours</b>
<b>LOTOJA – September 12<sup>th</sup></b> 82 people      27 from other states/clubs	<b>Kevin Reeve, Tyler Griffiths + Many others</b> <b>1476 Hours</b>
<b>Top of Utah Marathon – September 19<sup>th</sup></b> 43 people	<b>Laurie Littledike, Tyler Griffiths</b> <b>387 Hours</b>
<b>BEAR 100 – September 25<sup>th</sup> – 26<sup>th</sup></b> 42 people      some from other areas	<b>Ted McArthur, Cordell Smart, Tyler Griffiths</b> <b>798 hours</b>
<b>Bike the BEAR – September 26<sup>th</sup></b> 13 people      some from other areas	<b>Kelly Hadfield</b> <b>104 hours</b>

That is a total of **4,800 hours** that ham radio has contributed to our communities! **That's 200 Days!**

This does not include Club meetings, Board meetings, Activity Planning/meetings, Repeater Committee activities, ARES/RACES activities, Emergency Preparedness Fair's/activities, VE Sessions, Elmer Nights, Contests, Net Controls, Net participation and many other activities.

Numbers were down this year. It seemed like we had a harder time getting volunteers. Also most of the hours do not include the groups out of the area that helped out.

## The ARRL Letter for November 19, 2014 World Radiocommunication Conference Approves Global 60 Meter Allocation!

The Plenary Meeting of the 2015 World Radiocommunication Conference ([WRC-15](#)) in Geneva has approved an allocation of 5351.5-5366.5 kHz to the Amateur Service on a secondary basis, with a power limit of 15 W effective isotropic radiated power (EIRP). The November 18 decision on Agenda Item 1.4 was adopted on two back-to-back readings. Some Region 2 countries -- but not the US -- will be permitted up to 25 W EIRP. With this action, and despite conditions that are more restrictive than had been hoped at the start of the Conference, the Amateur Service has obtained its first new global HF allocation since 1979. While the Final Acts of the conference are expected to take effect on January 1, 2017, the new band will not become available to amateurs until their national telecommunications administration amends its rules and licensing conditions. Those administrations that already permit amateurs to operate in the 5 MHz range under certain conditions and on a not-to-interfere basis, including the FCC, will be considering whether, how, and when to modify those arrangements in light of the international allocation.



The International Amateur Radio Union ([IARU](#)) team is doing what it can to influence the agenda for WRC-19. The agenda could include addressing amateur spectrum requirements in the 50-54 MHz band in Region 1, which could lead to at least partial harmonization of the 6 meter band worldwide. A proposed agenda item to align the 160 meter allocation in Region 1 with the rest of the world is no longer under active consideration.

The WRC-19 agenda will also likely pose spectrum defense challenges, including possible consideration of the 420-450 MHz band to accommodate a new allocation to the space operations service for satellites in non-geostationary orbit that are described as "small satellites" or "satellites with short duration missions." One or more bands above 10 GHz may be up for consideration for 5G smartphone use. The bounds of these potential defensive items, however, are still under discussion by the conference and will not be settled until its final week.

The IARU team continues to monitor several other WRC-15 items that appear to be headed toward acceptable conclusions. WRC-15 continues through the signing of the Final Acts on November 27.

## National Parks on the Air (NPOTA) Map Now Available



In cooperation with ARRL, [CQmaps](#) has introduced a 2016 National Parks on the Air (NPOTA) [map](#). The full-color map includes all NPOTA units within the US, including Alaska, Hawaii, Puerto Rico, US Virgin Islands, Guam, Saipan, and American Samoa. All sites are clearly labeled and include the park name along with the ARRL park designator.

Each 24 × 36 inch map is offered in either a laminated heavy-weight paper or DuPont Tyvek.

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The NPOTA laminated map is well suited for using a dry-erase marker to check off your progress in chasing the parks. The map is personalized with your Amateur Radio call sign. The price is \$25, including US shipping. Add \$10 for international orders.

## AO-85 Commissioned and Turned Over to AMSAT-NA Operations

Fox-1A (AO-85) has been formally commissioned and turned over to AMSAT Operations, which is now responsible for the scheduling and modes. Fox-1A is AMSAT-NA's first CubeSat.

Many new techniques are incorporated, and lessons will be learned, as with any new 'product,'" said AMSAT Vice President-Engineering Jerry Buxton, N0JY. "We will incorporate changes from what we learn in each launch, to the extent possible, in subsequent Fox-1 CubeSats. To our members, we want to say that the Fox Team is very proud and pleased that our first CubeSat is very successful and hopefully will be for some time."

The Fox-1 Project is a series of CubeSats. A total of five will be built and flown. Launches already have been scheduled for three more, and a new NASA CubeSat Launch Initiative proposal will be submitted for the fifth launch.

The Fox Team noted that an apparent lack of receiver sensitivity and difficulty in turning or holding on the repeater with the 67 Hz CTCSS tone are probably the most notable observations about AO-85.

"We have determined a probable cause for the sensitivity issue, and while that can't be fixed on AO-85, we are taking steps to prevent similar issues on the rest of the Fox-1 CubeSats," Buxton assured. The November/December edition of *AMSAT Journal* will include full details on these technical issues. Read [more](#).  
-- Thanks to AMSAT News Service via Jerry Buxton, N0JY



## The ARRL Letter for December 3, 2014 Revamped FCC Website Set to Debut

The FCC's large-scale website redesign will roll out this month. The switch to the new site is set to happen on December 10 at 0100 UTC.

"While the transition to the revamped site is expected to be completed almost instantaneously, there will be an ongoing process following this transition that will continue to involve user feedback, fixes by the FCC's Information Technology team, and content updates by policy bureaus and offices," the FCC said in a November 24 [Public Notice](#).

The FCC said the new website has been designed to provide "better functionality, an improved design, and better searchability and navigability." Earlier this year the Commission's IT Department opened a [beta-test version](#) of the site to gather [user comments](#).



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"Extensive user research revealed how the FCC could improve the website's information architecture to make content easier to find," the *Public Notice* said. The FCC said its new website has been designed to operate on tablet and mobile device browsers with the display optimization based upon the device.

When the new site comes online, the current FCC website will disappear. The FCC said web pages and files that have not already migrated to the new site will remain available, however, and existing bookmarks will be redirected to the appropriate content on the new site. Read [more](#).

## Amateur Radio Provides Communication for Oklahoma Veterans Day Parade

Midwest City, Oklahoma's fourth annual Veterans Day Parade was a success, due in part to the communication support that Mid-Del Amateur Radio Club ([MDARC](#)) volunteers provided. Amateur Radio met communication needs at multiple staging areas, along the parade route, at the incident command post, and for the reviewing stand. Working closely with the City of Midwest City Emergency Management Office Communications Coordinator and the Midwest City police and fire departments, the ham volunteers were able to cover the large area and a parade route of about 2 miles. The Midwest City Communications Coordinator is Scott Walsh, N5NYS. The event featured a flyover by the Warbirds, a vintage World War II aircraft group from Tulsa. Heading up the team of 17 ham volunteers was Donald Ohse, W5DRO, whose experience includes working with the city and the Oklahoma County Sheriff's Office as a volunteer.

"By using Amateur Radio, we were able to provide communications and resources that could commit to many areas that normally would not have been covered due to manpower constraints," Ohse said. "For the past 3 years, we have been providing a radio amateur at the reviewing stand, where the emcee for the event is located, and we also place a spotter about 200 yards from the reviewing stand to communicate back to the reviewing stand, if a parade participant is out of order," he noted. "This was very helpful, so the emcee would not announce the wrong entry."

Ohse said the parade's multiple staging areas presented another challenge. Using several simplex frequencies, the ham volunteers were able to reduce radio traffic on the main public safety net frequency, leaving it available for more important uses. Read [more](#).



A team of 17 Amateur Radio volunteers helped to support the Midwest City, Oklahoma, Veterans Day Parade. [Kimmie Jackson photo]



### In Brief...

**"Year of Pluto" Special Event Set for December:** Pluto and the City of Flagstaff, Arizona, are forever linked in history. On February 18, 1930, astronomer Clyde Tombaugh discovered Pluto at Lowell Observatory in Flagstaff, using a blink comparator and photographic plates. The New Horizons probe reached the Pluto system 85 years later last July, imaging Pluto, its largest moon Charon, and the other small moons. Pluto has since been downgraded to "[dwarf planet](#)" status. Nonetheless, 2015 was designated the "Year of Pluto." To celebrate, the members of the Northern Arizona DX

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Association ([NADXA](#)) will mount special event station W7P, December 5-13, from Lowell Observatory. Operation will be on SSB and CW. Doug Tombaugh, N3PDT, the nephew of Clyde Tombaugh, will operate for a few days during the early part of the special event period. QSLs and a certificate are available. [Visit](#) the NADXA website for more information.

## ARRL Rocky Mountain Division Update December 2015

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ARRL Rocky Mountain Division update -- December 2015 Division website:  
[www.RockyMountainDivision.org](http://www.RockyMountainDivision.org)  
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==== Seasons Greetings! =====

It's (already???) that jolly time of the year, and it's been a true honor representing you and our great Division within ARRL's Board as your Director and Vice-Director. Here's a recap of the last twelve months:

--- Membership continues to climb within the Rocky Mountain Division, thanks to the diligent work and visibility of our volunteers, clubs, leadership and, of course, you: +4.1 percent since this time last year (ARRL nationally grew +2.5% over the same timeframe).

--- Members and leaders across the Division squarely engaged H.R. 1301 and S. 1685, companion bills of the Amateur Radio Parity Act. ARRL's letter generator was front-and-center at the Rocky Mountain Division Convention, New Mexico State Convention, and other hamfests around the Division. Your grassroots response has been strong. While we certainly have more work to do to continue pushing these bills through Capitol Hill, everyone involved thus far deserves a huge thank you for the energy you've put into achieving the milestones that have been achieved so far.

--- Our Division is fortunate to have hosted a few high-profile amateur radio events within it this past year: (1) W1AW/5 was QRV from New Mexico, serving as ARRL's Headquarters station in the 2015 IARU HF World Championships the weekend of July 11; (2) the 2015 Central States VHF Society Conference occurred July 23-26 in Denver, Colorado; and (3) the USA / IARU Region 2 Amateur Radio Direction Finding (ARDF) Championships took place on August 24-30 at the 3,300-acre Peaceful Valley Scout Ranch near Elbert, Colorado.

--- Vice Director Dwayne Allen WY7FD and I enjoyed every opportunity to be in the field to interact with League members and receive your input/ideas/concerns. On top of numerous club meetings, we have attended the following events in 2015: Rocky Mountain Division Convention (Bryce Canyon, UT); Central States VHF Society Conference (Denver, CO); ARRL New Mexico State Convention (Albuquerque, NM); Albuquerque Winter Tailgate (Albuquerque, NM); Socorro Hamfest (Socorro, NM); Montrose ARC Tailgate Party (Delta, CO); and the New Mexico TechFest (Albuquerque, NM).

--- Vice-Director Allen and I continue to conduct a joint IRLP/Echolink based monthly Rocky Mountain Division net to provide yet another avenue for us to interact with members, pass pertinent information, and receive input/ideas/concerns from across our large Division.

--- We continue to provide monthly Division-wide email updates (such as this one) as well as updates to the Division website ([www.RockyMountainDivision.org](http://www.RockyMountainDivision.org)) which contain timely information, announce-

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ments, calls to action, and recognitions.

--- Our 2015 Rocky Mountain Division award recipients, nominated by their peers and judged by our Section Managers and a member of their choosing, were recently announced: George Weber KA0BSA of Broomfield, Colorado (Division Ham of the Year), Devin Conn KD0YZO of Colorado Springs, Colorado (Division Young Ham of the Year), and Jim Andrews KH6HTV of Boulder, Colorado (Division Technical Achievement Award).

Each were recognized at the 2015 Rocky Mountain Division Convention.

--- The 2015 Rocky Mountain Division Convention was held at Ruby's Inn just outside of Bryce Canyon National Park, hosted by the Utah section.

Hosting the convention rotates amongst the Sections within the Division. 2016's convention will be hosted by the Colorado section at Keystone Resort, west of Denver.

--- We are fortunate to have 265 of our members serving in a variety of appointed Field Organization roles led by their Section Managers. These dedicated individuals fill the crucial role of being the proverbial rubber and road interface of the League, and they are doing an outstanding job.

Above all else, Rocky Mountain Division members like you have been super active. We had a great year on the airwaves, chewing the rag, chasing DX, providing service to our communities in times of need, contesting, chipping away at awards, experimenting with new technologies, mentoring others, serving within clubs, and more.

From our family to yours, Merry Christmas and Happy Holidays -- see you on the air.

===== 2016 ARRL Rocky Mountain Division Convention -- Registration Open! =====

Online registration for the 2016 ARRL Rocky Mountain Division Convention is officially open! The convention will take place May 13-15 at a great new venue that's perfect for hams, spouses, and family alike: Keystone Resort, nestled in the Rocky Mountains west of Denver, Colorado.

The Convention will be jam-packed with activities, competitions, forums, prizes, guests, awards, banquet meals, and much more that's yet to be announced. Over 36 hours of technical and non-technical forum presentations have already been lined up (and many more are on the way), broken down into general interest, ARES/RACES/AUXCOMM, HF DXing, and VHF+ Weak Signal tracks. The event's special guest speakers will include ARRL Vice President Rick Roderick K5UR, ARRL General Counsel Chris Imlay W3KD, and the one and only Gordon West WB6NOA.

Online registration just opened and, already, the Convention hotel is expecting to fill up soon, so don't wait too long to make reservations and plans. Rally your friends and ham club to plan a road trip (carpool or caravan) next spring to Keystone, Colorado for a weekend of amateur radio fun and camaraderie.

Visit <http://www.hamconcolorado.org> for fast and easy online registration, the current forum lineup, special hotel rate and contact information, and many more details.

See you in Keystone!

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===== Amateur Radio Parity Act of 2015 Update =====

As of this writing, the Amateur Radio Parity Act of 2015 (H.R.1301) presently has 117 co-sponsors in the House, due in no small part to ARRL members across the nation writing and emailing their Representatives to request their support. Senate companion bill (S. 1685) has gained its third co-sponsor and, of major significance, was passed to the full Senate floor after having overwhelmingly being supported by the Senate Commerce, Science and Transportation Committee.

Significant progress has been achieved over the past year, and we need to keep at it to ensure this legislation's ultimate success. Have you written your Senators and Representative? If not, the timing couldn't be more important to urge your Senators and Representative to support and co-sponsors their respective bills, which is the steam legislation needs to gather in order to move forward in the political process on Capitol Hill and counter growing opposition for this Act.

How can you help? By sending (1) a signed hard-copy letter to ARRL for personal delivery to your Representative and Senators, and (2) a follow-up email directly to your Representative and Senators. A suggested template is available on the Rocky Mountain Division website ([www.RockyMountainDivision.org](http://www.RockyMountainDivision.org)), or you may certainly compose your own personal correspondence.

\*\*\* Note: Letters and emails do NOT need to be sent to Reps. Ed Perlmutter and Mike Coffman since they have already co-sponsored H.R. 1301. \*\*\*

Because it takes an extremely long time for snail-mail to be delivered to Congress due to security screening, and because ARRL officers, Directors, and staff who are making personal visits to Congressional offices in Washington DC can personally deliver packets of constituent letters directly, we recommend sending your hard-copy letter to:

ARRL  
Attn: Amateur Radio Parity Act grassroots  
225 Main Street  
Newington CT 06111

If you don't know your Representative or Senators, or to locate the web form for sending your follow-up email, please refer to these links:

<http://www.house.gov/representatives/find/>  
<http://www.senate.gov/senators/contact/>

More information about these bills can be found on ARRL's website at <http://www.arrl.org/amateur-radio-parity-act>

Thank you for doing your part to make this important amateur radio legislation a reality for our amateur radio community.

73,  
Brian Milesosky N5ZGT, Rocky Mountain Division Director Dwayne Allen WY7FD, Rocky Mountain Division Vice-Director Visit our Division's website at: [www.RockyMountainDivision.org](http://www.RockyMountainDivision.org)

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ARRL Rocky Mountain Division  
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## Questions for Extra Class License

1. (E1F13) What types of communications may be transmitted to amateur stations in foreign countries?
  - A. Business-related messages for non-profit organizations
  - B. Messages intended for connection to users of the maritime satellite service
  - C. Communications incidental to the purpose of the amateur service and remarks of a personal nature
  - D. All of these choices are correct
2. (E2E10) Which of these digital communications modes has the narrowest bandwidth?
  - A. MFSK16
  - B. 170-Hz shift, 45 baud RTTY
  - C. PSK31
  - D. 300-baud packet
3. (E3C10) How does the performance of a horizontally polarized antenna mounted on the side of a hill compare with the same antenna mounted on flat ground?
  - A. The main lobe takeoff angle increases in the downhill direction
  - B. The main lobe takeoff angle decreases in the downhill direction
  - C. The horizontal beam width decreases in the downhill direction
  - D. The horizontal beam width increases in the uphill direction
4. (E4E08) What type of signal is picked up by electrical wiring near a radio antenna?
  - A. A common-mode signal at the frequency of the radio transmitter
  - B. An electrical-sparking signal
  - C. A differential-mode signal at the AC power line frequency
  - D. Harmonics of the AC power line frequency
5. (E5D17) How many watts are consumed in a circuit having a power factor of 0.6 if the input is 200V AC at 5 amperes?
  - A. 200 watts
  - B. 1000 watts
  - C. 1600 watts
  - D. 600 watts
6. (E6F10) What is the most common type of photovoltaic cell used for electrical power generation?
  - A. Selenium
  - B. Silicon
  - C. Cadmium Sulfide
  - D. Copper oxide
7. (E7H17) Why is a phase-locked loop often used as part of a variable frequency synthesizer for receivers and transmitters?
  - A. It generates FM sidebands
  - B. It eliminates the need for a voltage controlled oscillator
  - C. It makes it possible for a VFO to have the same degree of frequency stability as a crystal oscillator
  - D. It can be used to generate or demodulate SSB signals by quadrature phase synchronization
8. (E8D15) Which of the following is a typical value for the RMS voltage at a standard U.S. household electrical power outlet?
  - A. 120V AC
  - B. 340V AC
  - C. 85V AC
  - D. 170V AC
9. (E9H01) What is the effective radiated power relative to a dipole of a repeater station with 150 watts transmitter power output, 2-dB feed line loss, 2.2-dB duplexer loss and 7-dBd antenna gain?
  - A. 1977 watts
  - B. 78.7 watts
  - C. 420 watts
  - D. 286 watts
10. (E9H11) What characteristic of a cardioid-pattern antenna is useful for direction finding?
  - A. A very sharp peak
  - B. A very sharp single null
  - C. Broad band response
  - D. High-radiation angle

[\(For answers to test questions see bottom of page 12\)](#)

# BARC Club Officers

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# MERRY CHRISTMAS

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