BARC
BRIDGERLAND AMATEUR RADIO CLUB

THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

December 2017

Some Contents…

ARRL Affiliated

PRESIDENT'S MESSAGE

We would like to thank Cordell for the many years that he has served as the President of the BARC Radio Club. We have appreciated his love of Ham Radio and how he has helped everyone and encouraged us to participate in the many activities. Here is his message from last year but it applies to today as well.

Thank you Cordell KE7IK !!!

This past year had been filled with successful club events and activities, including many interesting and informative programs presented at the club meetings. I want to thank all of you for your help and participation throughout the past year; we couldn't have done it without you. It has been a fun and exciting time, and all in all I have enjoyed every minute. Remember - the Bridgerland Amateur Radio Club is only as good as you, our members, make it.

Please remember that this club is for you. Let any of the officers or board members know of topics, activities, or anything that would be of interest to you and others. Amateur radio offers many activities that an individual can pursue, learn, and have fun with. There is: talking with friends within the local area on a hand-held (HT) or a mobile in your vehicle, DXing worldwide on the HF bands to a distant country, assisting with emergency and disaster communications, technical experimenting from a simple antenna to something complex as a transmitter or an interface between their radio and a computer, contesting to see who can make the most contacts in a limited period of time, talking to the space station with your HT and a hand held beam antenna, using Orbiting Satellites Carrying Amateur Radio (OCSAR) to experience satellite tracking and participate in radio propagation experiments, experimental work such as meteor scatter and earth-moon-earth communications, and digital communications from pactor, Winlink, PSK-31, to D-Star. And there is still more that I have not listed. There is something for everyone. Ham radio provides the broadest and most powerful wireless communication capability available to any private citizen anywhere in the world.

And for me, it is fascinating to explore the different aspects of amateur radio and I enjoy my time with the hobby.

Thanks again to everyone for your support of our club and the activities we have. 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 2017 ACTIVITIES

06 Dec, **BARC Club Meeting/Christmas Party** (see below)

13 Dec, 7:30 PM - **ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871

19 Dec, 6:30-8:30 PM - **BARC Elmer Night** — Cache County Sheriff's Office West 200 North, Logan, UT 3rd Floor

20 Dec, 7:00-9:00 PM — **Cache County ARES meeting** at the Sheriff's Office

21 Dec, 8:00 PM **RACES VHF Net** 449.650 pl 100.0 Mt. Pisgha 147.180 Snowbird 147.20 IRLP

Merry Christmas

(Check out HamRadioNow for A Ham'sNight Before Christmas, & Text. See HamRadioNow episode 371 for more background on it, check here)

UPCOMING 2018 ACTIVITIES

02 Jan, 8:00 PM — **Cache County ARES Net 146.72**

10 Jan, 7:30 PM - **ARRL Rocky Mountain Division Net** 147.200/IRLP Node:9871

13 Jan, 10:00 AM - **BARC Club Meeting** — Cache County Sheriff's Office

16 Jan, 6:30-8:30 PM - **BARC Elmer Night** — Sheriff's Office 3rd Floor

17 Jan, 7:00-9:00 PM — **Cache County ARES meeting** — Sheriff's Office

20 Jan, 8:00 AM — **Utah State RACES HF Net** 3920 KHz

For more calendar information see the barconline.org/calendar

The December BARC Club Meeting/Christmas Party

At the
BLUEBIRD
19 North Main, Logan
December 6TH 2017
Doors open at 6:00 pm
DINNER SERVED AT 6:30PM
Prime Rib/Chicken Cordon Blue Buffet/$19

November BARC Club Meeting Election Results

At the November club meeting the elections were held for the 2018 Officers and Board Members for the BARC club. Nominations were allowed from the floor. The election was taken by secret ballot. For the offices of Secretary, Treasurer and some of the Board Members the current officers were re-elected. According to the Club Bylaws the past President automatically becomes a Board Members. The results of the elections are:

President:	**Ted McArthur**	**AC7II**
Vice President:	**Tyler Griffiths**	**N7UWX**
Secretary:	**Tammy Stevens**	**N7YTO**
Treasurer:	**Kevin Reeve**	**N7RXE**
Board Members:	**Mitch Smith**	**N7USU**
	Richard Elwood	**KE7GYD**
	Chris Clement	**K7CTC**
	Cordell Smart	**KE7IK**

Report of ARRL-VEC Exam Sessions held in October

Test on October 12, 2017

On Thursday, October 12, 2017 a license exam session was held at Bridgerland Technical College. Here are the results of the exams taken.

The following individuals earned a Technician License:

Travis Hilton – KI7QYV
Benjamin Marsh – KI7QYY

The following individual upgraded to a General License:

Susan Roecker – KF7QFC

The following individuals passed both the Technician & General Exams:

Jason Hansen – KI7QYX
Steven Wheeler – KI7QYW

The following individual passed the Technician, General, & Amateur Extra Exams:

Warren Bassett – AG7JS

(Continued on page 5)

Here is a summary of the number of exams given & new licenses earned at this session:

Technician License Exams Given:	5	New Technician Licenses Earned:	2
General License Exams Given:	5	New General Licenses Earned:	3
Extra License Exams Given:	2	New Extra Licenses Earned:	1
Number of Exams Given:	12	Number of New Licenses Earned:	6

Number of People Served: 6

Test on October 28, 2017

On Saturday, October 28, 2017 a one day technician license class was held at Bridgerland Technical College followed by an exam session. Here are the results of the exams taken.

The following individuals earned a Technician License:

Matthew Brown – KI7ROD
Nicholas Crookston – KI7RON
Kathryn Graham – KI7ROS
Jackson Graham – KI7ROT
Phillip Hellewell – KI7ROE
Diana Hilton – KI7ROV
Gordon Hubbell – KI7ROR
Robert Jardine – KI7ROF
Brock Jensen – KI7ROG
Will Lusk – KI7ROK
Christopher Olsen – KI7ROJ
Benjamin Owen – KI7ROH
James Schultz – KI7ROL
Steven Shattick – KI7ROW
Caleb Smith – KN4HHX
Kevin Sorensen – KI7ROQ
Nathaniel Stewart – KI7ROO
Gary Stoker – KI7ROU
Max Susman – KI7ROP

The following individual passed both the Technician and General Exams:

Oscar Schultz – KI7ROM

The following individuals upgraded to a General License:

Travis Hilton – KI7QYV
Robert Jensen – KD7IDB

The following individual upgraded to an Amateur Extra:

Douglas Ziser – KI7QKP

Here is a summary of the number of exams given & new licenses earned at this session:

Technician License Exams Given:	27	New Technician Licenses Earned:	19
General License Exams Given:	10	New General Licenses Earned:	3
Extra License Exams Given:	2	New Extra Licenses Earned:	1
Number of Exams Given:	39	Number of New Licenses Earned:	23

Number of People Served: 30

Congratulations to everyone that earned first their Amateur Radio license or upgraded their license on October 12th or October 28th.

Thank you to all of the VEs and club members that helped with one or both of these exam sessions!

Richard Elwood
KE7GYD
VE Liaison

The ARRL Letter for November 9, 2017
Announcing: The ARRL International Grid Chase

A new and exciting operating event will kick off on January 1, 2018, at 0000 UTC (New Year's Eve in US time zones), when the ARRL International Grid Chase gets under way. The year-long event hopes to build on the success of the highly successful 2016 National Parks on the Air (NPOTA). The objective is to work stations on *any* band (*except* 60 meters) in as many different Maidenhead grid squares as possible, and then upload your log data to ARRL's Logbook of The World (LoTW). Registration in LoTW is free, and it costs nothing to participate

Many hams are familiar with grid squares from the VHF/UHF and satellite realms, and everyone lives in one. ARRL's VUCC is based on grid squares, and some contests on HF, VHF, and UHF also use them as a scoring factor.

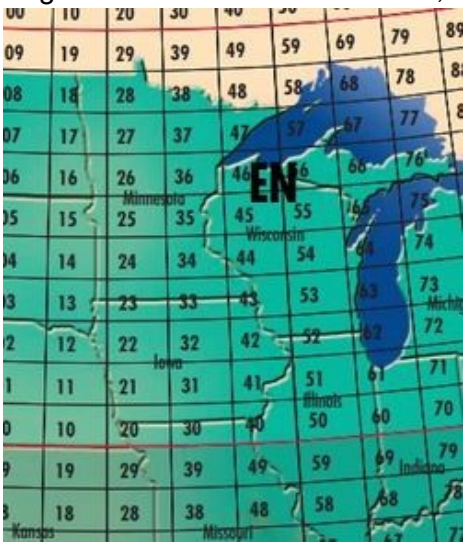
The Maidenhead grid square system divvies up the entire globe into 324 fields, each containing 100 grid squares 1° latitude × 2° longitude in size. With 32,400 potential grid squares, it's not likely that anyone will run out of challenges, even though some grid squares are surrounded entirely by water or are in areas that are uninhabited or difficult to access.

If you don't know your grid square, David Levine, K2DSL, has an online calculator. Just enter a postal address, ZIP code, or even a call sign, and his site will tell you the grid square for that location. For example, enter "W1AW" and the site will return "FN31pr." For the purposes of the ARRL International Grid Chase, though, just the two initial letters and the two numbers that follow (e.g., FN31) are all you'll need to know.

Once you get active in the chase and start uploading your log data, each new grid square contact confirmed through LoTW will count toward your monthly total. Getting started is simple. Turn on the radio and just call CQ or "CQ Grid Chase" or listen for others doing the same. Make a contact, exchange grid squares, log it, and move on to another. At the end of each month, your totals on the Grid Chase leader board will reset to zero, although the system retains these to determine top finishers in various categories at the end of the year.

Any contact you make in 2018 can count toward your Chase score; it doesn't have to involve an exchange of grid squares. As long as the other operators also participate in LoTW, you'll get credit automatically when they upload their logs. This means that contest contacts also count, as will contacts with special event stations or other on-air activity that uses LoTW to confirm contacts.

Some radio amateurs live in sparsely populated grid squares, and if you're one of those, you could find yourself handling a pileup! Expeditions to hard-to-reach or rare grid squares undoubtedly will evolve. You also can travel to one of those grid squares yourself. Some vehicle or handheld GPS units can be set to display when you are in a particular grid square. Apps are available for smartphones or tablets, such as *Ham Square* for iOS devices or *HamGPS* for Android devices.



A map segment showing part of the EN field of grid squares. Note that some grid squares are very nearly surrounded by water. [Photo courtesy of Icom America]

There are no restrictions on modes or bands, as long as they are legal. Satellite contacts are valid for the Chase. The event is open to all radio amateurs.

Full details of the ARRL International Grid Chase will appear in the December 2017 issue of *QST*. The digital edition is available on Friday, November 10.

For more information, contact the ARRL Contest Branch. Read more.

FCC Chairman Recognizes Amateur Radio in Praising those Assisting Puerto Rico

Wrapping up a 2-day visit to Puerto Rico on Monday, FCC Chairman Ajit Pai, recognized Amateur Radio volunteers as he praised those who turned out to help the stricken commonwealth in the wake of Hurricane Maria.

"[T]he worst of tragedies can also bring out the best in people. I saw that firsthand during my 2 days in Puerto Rico," Pai said. "Everyone is pitching in: the people of Puerto Rico helping their neighbors, hardworking Federal Emergency Management Agency staff -- including communications personnel in Emergency Support Function #2 -- the dedicated regulators of the Puerto Rico Telecommunications Regulatory Board, and the FCC's own Roberto Mussenden, who has spent the past month away from his family on the mainland in order to help the island where he grew up."

"Additionally, Amateur Radio operators, broadcasters, cable operators, fixed wireless companies, wireline carriers, and mobile providers have stepped up to the plate, working overtime to connect the disconnected," Pai continued. "All of this work reflects the ethos I saw on many signs and t-shirts during my time on the island: 'Puerto Rico Se Levanta' [Puerto Rico is Rising]."

Pai said recovering from Hurricane Maria will require an all-hands-on-deck effort, and the FCC "remains committed to doing everything we can to help restore communications networks as quickly as possible."

In October, the FCC granted ARRL's request to waive current Amateur Radio rules to permit data transmissions at a higher symbol rate than currently permitted, in order to facilitate hurricane relief communications between the continental US and Puerto Rico. The temporary waiver will enable the use of PACTOR 3 and PACTOR 4.

"The path to recovery has met several challenges, most notably the lack of power and functional infrastructure," Pai said. "One thing is clear: overcoming these challenges won't be easy." Read more.

The ARES E-Letter for November 15, 2017
Major DOD Exercise Held; MARS, Amateur Radio Local Components Active

The US Department of Defense (DOD) conducted a "communications interoperability" training exercise November 4-6, once again simulating a "very bad day" scenario. Amateur Radio and MARS

organizations took part. The exercise began with a simulation of a coronal mass ejection event impacting the national power grid as well as all forms of traditional communication, including landline telephone, cellphone, satellite, and Internet connectivity," Army MARS Program Manager Paul English, WD8DBY, explained.

During the exercise, a designated DOD Headquarters entity was to request county-by-county status reports for the 3,143 US counties and county equivalents, in order to gain situational awareness and to determine the extent of impact of the scenario. Army and Air Force MARS organizations were to work in conjunction with the Amateur Radio community, primarily on the 60-meter interoperability channels as well as on HF NVIS frequencies and local VHF and UHF, non-Internet linked Amateur Radio repeaters.

Madision County, Florida ARES Conducts Exercise Net

As an example of a county ARES program's participation in the DOD's Comex 17-4, the rural Madison County (Big Bend region of Florida) ARES group conducted a net on the Lee repeater (145.19 MHz) on Saturday, November 4, from 9:34 AM to 9:40 AM EDT, asking check-ins to provide real-time, current conditions when responding, to simulate collection of infrastructure status and damage reports from as many counties in the coverage area of the repeater as possible. A net was also conducted on the UHF Statewide Amateur Radio Net (*SARnet*, see below) from 9:40 AM to 10:15 AM during that same time period to gather county reports from other parts of the state as indicated. There are 67 counties in the state, and it was a goal to see how many were able to report via the system net and Amateur Radio.

After the exercise, Madison County EC Pat Lightcap, K4NRD, commented that "on our local net we had information provided on Madison, Suwannee and Columbia counties." "Then I went to the UHF SARnet and acted as net control to get responses from as many additional counties in Florida as possible," he said. Reps from 16 counties reported the status of their infrastructure; "we had not announced the net ahead of time and simply began it with only a preamble to explain the information that was desired," Lightcap said. "After calling each of the 67 counties, I ended the net at 10:15 AM and sent my report for forwarding to DOD." This was an exercise to simulate the assessment of the national infrastructure after a strong and destructive solar storm.

How SARnet Works

SARnet local UHF (70 cm) repeaters throughout the state are connected by a microwave radio network operated by the Florida Department of Transportation. The key to why SARnet works so well is that instead of using the Internet, it uses dedicated bandwidth on a private microwave networkï»¿. When an operator keys his radio, and talks into his local repeater, thanks to the statewide connectivity, he automatically talks through all network repeaters throughout the entire state. The network voice radio usage models that the FDOT is trying to investigate are short, efficient communications between users (think professional public safety radio transactions). Thus, long rag chews are not appropriate -- during long conversations, an operator is activating SARnet repeaters all over the state for an extended period of time, subjecting all to them. Click here for more information on SARnet.

MESH Training Held in Utah Focuses on Emergency/ Disaster Communications

A MESH Training seminar was held on Saturday, October 28, at the Miller Public Safety and Education Building, Sandy, Utah, conducted by MESH pioneer David Bauman, KF7MCF. [Amateur

Radio MESH is an over the air computer network of nodes with broadband capabilities conducted on the amateur microwave bands for high-speed networking in various modes - television, imaging, text and others.] Session 1 covered Basic MESH -- what is it, how does it work, and what can it do. Session 2 addressed Advanced MESH -- How to make AREDN (see below) work in the real world; and the three issues that AREDN has that will bring the network to a screeching halt, and how to solve or get around them. Session 3 covered tools and programs to help set up and run MESH, the three step method to make sure a link will work, and what can you do on the MESH pipeline. A MESH equipment show and tell was presented, with examples of hardware, and also hardware available to be purchased on site.

Bauman said "we always seem to be lucky enough to fill the room, and attendees hung around asking questions and getting equipment." "We provide MESH Go-Kit starter equipment at lunch money prices along with the training," he said. "The seminar was a success." Basic Go-Kit equipment is now in the hands of over 100 hams in the Salt Lake Valley and surrounding areas.

Bauman reported "now what we are doing is training them in the use of the hardware and software that we will use in an emergency/disaster response deployment; several MESH training sessions have already been held, with more to come."

The MESH group is currently working on a project to link the Mayor's office and Emergency Communications Center (ECC) of a small city to their three fire stations, the Police dispatch center, and the local hospital with a high speed digital MESH network, "you might say our own private ham Internet," Bauman said. "This is the third local city that has shown interest in using MESH deployed by hams to back up and augment their existing emergency communication avenues with high speed digital capability."

The group has been asked to demo the system to the city council and Mayor at an upcoming meeting. Bauman said "we will demo high speed file transfer of messages (used by the Red Cross to send Well Messages from shelters) to a collection point and then upload them to an HF radio system and network." "We can transfer pictures and other files, along with real time video and audio, even a repeating streaming audio or video message to tell hams signing on how and where they are needed, and what to do."

VoIP and the above mentioned capabilities are available on laptops connected to the group's network, and also the ability to use real old style phones (some of the city residents are much more comfortable with a simple old style phone with a number to call for the Police, Fire and the hospital rather than a push to talk radio).

The group's demo will show officials that they can use real-time video, pictures (of damaged roads, overpasses, or buildings for the City Engineer), or of injured individuals at a shelter for the hospital to assess/triage) and text messages and live audio one to one, one to all, or to just a select group (Police to all fire stations, for instance). "We can show them how the E-com center can monitor all conversations, text messages, and file transfers and even e-mail inside our network, and outside also, if somewhere on the network we can tap into a satellite Internet link when regular Internet access is down," Bauman said. Several hams are spearheading this effort: Jerry Spillman, W0HU; John Hurst, KF7NQW; Grant Gardner, KC7HOU; Robert Jelf, KG7OHV; Charles Gray, KE6QZU; Edward J. Sim, N7RTA; Brad Rupp, AC7BR; and David T. Bauman, KF7MCF.

This is the same group that for years has been using high speed digital networking to augment the packet system used by hams for the local Wasatch 100, arguably the toughest 100 mile race in the country - a race up and down over mountains. This is not only extremely difficult for the runners, but setting up line of sight radio communications in rugged mountains is very challenging. "Our team made it work!," said Bauman.

The Amateur Radio Emergency Data Network (AREDN)

From its literature, the AREDN™ Project's focus is on emergency/disaster response communications. It seeks to provide hams a means to implement this technology in practical ways to support local and regional emergency communications needs. To that end, the project's objectives are to enable hams to put up a mesh node with minimal expertise and effort; configure the mesh network automatically so that advanced network knowledge is not needed; use low-cost, reliable commercial equipment; define standards for internetwork integration; support those in the process of designing and implementing emergency/disaster communications networks; and refine the software to make implementation easier, more reliable, and more manageable.

See YouTube video on AREDN here.

The ARRL Letter for November 16, 2017
Microwavers Report Successful US-Canada Contacts on 78 GHz

Microwave enthusiast Mike Seguin, N1JEZ, has reported several successful 78 GHz contacts between the US and Canada on November 9. "We believe these contacts may be the first W/VE on 78 GHz," Seguin said in a post to several VHF/UHF/microwave-oriented reflectors.

N1JEZ's 78 GHz setup, aimed at Canada. [Mike Seguin, N1JEZ, photo]

"We hope to extend distances before winter sets in here in the northeast and mountaintop access is limited." On the Canadian side were Rene Barbeau, VE2UG, and Ray Perrin, VE3FN. On the US side were Henry Ingwersen, KT1J, and Seguin. The first contacts were between FN35ja and FN34jx -- a distance of 5 kilometers (3.1 miles), "primarily to test systems," Seguin said.

"Contacts were easily made in SSB with huge signals on both ends," he reported. Next, N1JEZ and KT1J moved to FN34lt -- extending the distance to 27 kilometers (16.7 miles), and again easily made contact with the Canadian crew.

The Amateur Radio allocation in that part of the spectrum is 76-81 GHz. Amateur operation at 76-77 GHz has been suspended, however, until the FCC can determine that Amateur Radio operation will not interfere with vehicular radar systems deployed in that frequency range. -- *Thanks to Mike Seguin, N1JEZ*

Regulation Abroad: "Yellow Cards" in The Netherlands; Dropping the "N" in Iceland

Netherlands telecommunications regulator Agentschap Telecom reports that radio amateurs who fail to use their call signs correctly have been fined or issued formal warnings -- called "yellow cards" in the Netherlands. The regulator announced on November 9 that it had imposed an administrative fine on a radio amateur who did not use his call sign or did not identify at required intervals. Despite warnings, the behavior did not change, the regulator said, resulting in a fine.

The agency also distributed several yellow cards for failure to identify and for "improper use" of Amateur Radio call signs when making contacts on frequencies not authorized to the operator.

Agentschap Telecom also advised that, while amateurs in The Netherlands have been doing a good job resolving problems among themselves, the agency wanted to emphasize several points. Among these: the 6-MHz band (specifically 6635 kHz) is not an amateur band; hams may not transmit music; hams may not communicate using amateur equipment on frequencies allocated for unlicensed use, and Amateur Service licensees may only contact other Amateur Service licensees.

The regulator further asserted that transmitting broadband television on the 70-centimeter band "is not a good choice," because of the likelihood of interference with 433-MHz unlicensed applications, such as garage door openers, remote controls, wireless weather stations, and other devices. The regulator has said that other users of the spectrum also "have rights," and that having primary status does not mean that other users have to accept all interference.

Novice Call Sign "Stigma" May End in Iceland

Iceland's Ministry of Transport and Local Government has invited comments on draft changes to the Radio Regulations in that country. IARU member society Icelandic Radio Amateurs (IRA) had proposed ending the practice of issuing distinctive "N" call signs for Novice-class radio amateurs. The IRA also has proposed ending the requirement that Amateur Radio call signs reflect the geographic call district of the station, something still in place in Canada and other countries.

The Post and Telecom Administration's draft regulations incorporate the IRA's requests and also update the table of frequency allocations to include the 630- and 60-meter bands.

In Brief...

Software-Defined Radio (SDR) Pioneer Vanu Gopal Bose died on November 11 after suffering a sudden pulmonary embolism. He was 52. Bose was the son of Bose Corp founder Amar G. Bose, who died 4 years ago at 83. In 1998, Vanu Bose founded Vanu Inc., which pioneered the commercialization of software-defined radio and was the first company to receive FCC certification of an SDR in 2004.The firm's technology grew out of Bose's graduate research at MIT. Father and son were both MIT alumni. Recently, Bose's company deployed more than 40 Community Connect base stations in Puerto Rico to provide cellular service in the wake of two devastating hurricanes.

The ARRL Letter for November 30, 2017
AO-91 Commissioned, Declared Open for Amateur Use!

AMSAT-NA's latest Amateur Radio CubeSat, RadFxSat (Fox-1B), now known as AO-91, has been opened for general use. AMSAT Engineering officially announced that AO-91 was ready for use at 0650 UTC on Thanksgiving Day, November 23. AMSAT VP of Engineering, Jerry Buxton, N0JY, turned over operation to Mark Hammond, N8MH, and AMSAT Operations during a contact on the AO-91 repeater during the pass over the Eastern US, AMSAT said in a bulletin.

The latest CubeSat in the Fox series was launched on November 18 from Vandenberg Air Force Base in California. Telemetry is downlinked via the DUV sub-audible telemetry stream, which can be decoded using *FoxTelem* software.

A 1U CubeSat, RadFxSat (Fox-1B) is a joint mission of AMSAT and the Institute for Space and Defense Electronics (ISDE) at Vanderbilt University. AMSAT constructed the rest of the satellite, including the spaceframe, on-board computer, and power system. The Amateur Radio package is similar to that currently on orbit on AO-85, with an uplink on 435.250 MHz (67.0 Hz CTCSS) and a downlink on 145.960 MHz. -- *Thanks to AMSAT News Service*

Questions for The General Class License

1. (G1A07) Which of the following frequencies is within the General Class portion of the 20-meter phone band?
A. 14005 kHz
B. 14105 kHz
C. 14305 kHz
D. 14405 kHz

2. (G2B11) What frequency should be used to send a distress call?
A. Whichever frequency has the best chance of communicating the distress message
B. Only frequencies authorized for RACES or ARES stations
C. Only frequencies that are within your operating privileges
D. Only frequencies used by police, fire or emergency medical services

3. (G3C04) What does the term "critical angle" mean as used in radio wave propagation?
A. The long path azimuth of a distant station
B. The short path azimuth of a distant station
C. The lowest takeoff angle that will return a radio wave to the Earth under specific ionospheric conditions
D. The highest takeoff angle that will return a radio wave to the Earth under specific ionospheric conditions

4. (G4B13) What is a use for an antenna analyzer other than measuring the SWR of an antenna system?
A. Measuring the front to back ratio of an antenna
B. Measuring the turns ratio of a power transformer
C. Determining the impedance of an unknown or unmarked coaxial cable
D. Determining the gain of a directional antenna

5. (G5A03) Which of the following causes opposition to the flow of alternating current in an inductor?
A. Conductance
B. Reluctance
C. Admittance
D. Reactance

6. (G6A01) What is the minimum allowable discharge voltage for maximum life of a standard 12 volt lead acid battery?
A. 6 volts
B. 8.5 volts
C. 10.5 volts
D. 12 volts

7. (G7A01) What useful feature does a power supply bleeder resistor provide?
A. It acts as a fuse for excess voltage
B. It ensures that the filter capacitors are discharged when power is removed
C. It removes shock hazards from the induction coils
D. It eliminates ground loop current

8. (G8A05) What type of modulation varies the instantaneous power level of the RF signal?
A. Frequency shift keying
B. Phase modulation
C. Frequency modulation
D. Amplitude modulation

9. (G9A06) In what units is RF feed line loss usually expressed?
A. Ohms per 1000 feet
B. Decibels per 1000 feet
C. Ohms per 100 feet
D. Decibels per 100 feet

10. (G0A06) What precaution should be taken when installing a ground-mounted antenna?
A. It should not be installed higher than you can reach
B. It should not be installed in a wet area
C. It should be limited to 10 feet in height
D. It should be installed such that it is protected against unauthorized access

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

2017 BARC Club Officers

President
Cordell Smart KE7IK
president@barconline.org
(435) 245-4581

Vice President
Ted McArthur AC7II
ac7ii33@gmail.com
(435) 770-9169

Secretary
Tammy Stevens N7YTO
secretary@barconline.org
(435) 753-2644

Treasurer
Kevin Reeve N7RXE
treasurer@barconline.org
(435) 753-1645

Board Members

Tyler Griffiths N7UWX
N7UWX@comcast.net
(435) 881-3834

Chris Clement K7CTC
K7CTC@icloud.com
(661) 208-6431

Mitch Smith N7USU
n7usu@mitchsmith.me
(435) 764-4828

Richard Elwood KE7GYD
r.d.elwood@gmail.com
(435) 753-4360

Newsletter Editor
Dale Cox KB7UPW
newsletter@barconline.org
(435) 757-4063

Web Page Editors
Kevin Reeve N7RXE and Bob Wood WA7MXZ
webmaster@barconline.org

Answers to questions on page 13: 1-C, 2-A, 3-D, 4-C, 5-D, 6-C, 7-B, 8-D, 9-D, 10-D