BARC
BRIDGERLAND AMATEUR RADIO CLUB

THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

December 2011

Merry Christmas **Happy New Year**

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ARRL Affiliated

PRESIDENT'S MESSAGE

Another year has quickly gone by. I would like to take this opportunity to thank everyone for their help and support of the club during the past year, especially the officers and board: Tyler Griffiths N7UWX Vice President; Tammy Stevens N7YTO Secretary; Kevin Reeve N7RXE Treasurer; and Board Members Guy Hatch N7WAT; Jared Luther K7LRX; Ted McArthur AC7II; for a job well done – THANK YOU.

Our club had a very good year by the efforts from many individuals for the events and activities that are supported. Our club was also recognized by the ARRL Rocky Mountain Division. Shirley Larsen AD7HL received the Rocky Mountain Division Ham of the Year Award for 2011. Both our club website and the newsletter received first place awards for being the best in the Rocky Mountain Division for the year 2011. That just shows you what an outstanding club we have. And THANK YOU to all our club members for your help and participation throughout the past year – remember the Bridgerland Amateur Radio Club is only as good as you, our members, make it.

We had elections at the November club meeting and have a few changes for next year. Welcome onboard the following members for 2011: Ted McArthur AC7II as Vice President and Roger Ellis AE7HB and Tyler Griffiths N7UWX as board members. Welcome back returning officers and board member for 2011: Cordell Smart KE7IK President, Tammy Stevens N7YTO Secretary; Kevin Reeve N7RXE Treasurer; and Gut Hatch N7WAT Board Member. A hearty thanks goes to our outgoing board member Jared Luther K7LRX for the time and dedicated service provided.

Once again, our club has some of the most outstanding members and participation in amateur radio.

Have a Merry Christmas and a Happy New Year.

73
Cordell
KE7IK

UPCOMING ACTIVITIES

Club Meeting - Christmas Party - 7 December, 6 PM
At the Coppermill Restaurant

ARRL-VEC Exam - 10 DECEMBER, 8 AM
(see below for more information)

RACES VHF Net - 15 December, 8:00 PM

Starting in 2012

Club Meeting - 14 January, 10:00 AM

RACES HF Net - 21 January, 8:00 AM 3920 KHz

BARC Club Meetings are normally on the 2nd Saturday of the month at 10:00 A.M. on the 3rd floor of the Cache County Sheriffs Complex on 200 North and 1225 West, Logan, Utah.

ARES Meetings are usually held on the Third Wednesday of each month at 7 P.M. at the Cache County Sheriffs Complex. Contact Tyler Griffiths for more information.

There were elections held at the November club meeting.
Your new officers for 2012 are:

President:	Cordell Smart	KE7IK
Vice President:	Ted McArthur	AC7II
Secretary:	Tammy Stevens	N7YTO
Treasurer:	Kevin Reeve	N7RXE
Board Members:	Tyler Griffiths	N7UWX
	Roger Ellis	AE7HB
	Guy Hatch	N7WAT

An ARRL-VEC Exam will be Sponsored by BARC
Date: DECEMBER 10, 2011
Time: 8:00 AM (No walk-ins)
Contact: V Philip. Rasmussen (435) 770-0630
Email: n7jfg@arrl.net
Location: Utah State University (ASTE Building, Rm 108)
1498 North 800 East, Logan UT 84321

HAM PROFILE

By Jared B. Luther

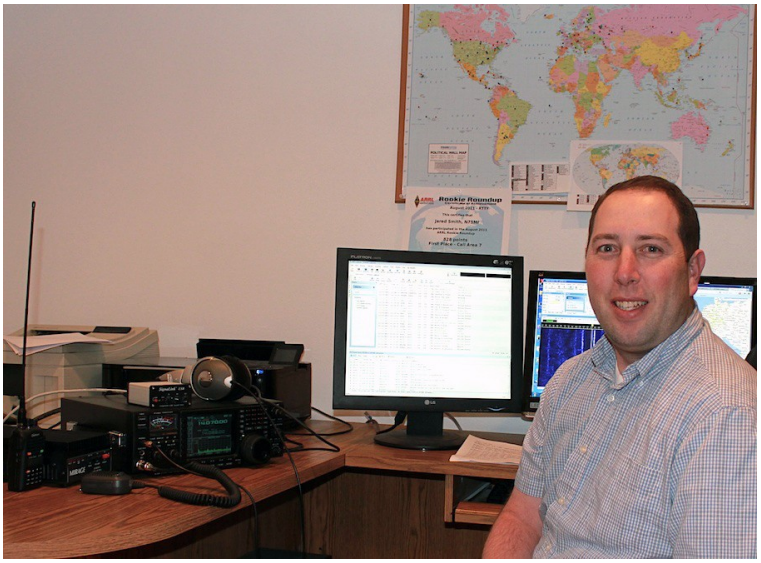
Jared Smith (N7SMI)

As a new ham, Jared dove head first into ham radio. He caught the ham radio bug in June of this year, studied for a few days, and passed his Technician and General tests in one sitting. He immediately went to a new vanity call because his assigned KF7QKZ didn't exactly roll off the tongue - especially on the radio. If you can remember his last name (Smith), you might remember N7SMI.

After getting his ticket, Jared started listening to the local repeaters, checking into the BARC net, and learning the intricate and often silly protocols for radio communication. After getting VHF/UHF radios, a very generous Elmer gifted him an Icom IC-756 Pro II HF radio which, along with a Comet vertical antenna, have become the beginnings of his humble ham shack. He loves turning the knob and talking to interesting people from around the world on every band from 160 meters to 70 cm.

With a fairly modest antenna (he likes to ponder what the neighbors and XYL will think when he eventually puts a big antenna in the air), Jared enjoys the challenge of working a new state or country, or working through a pileup to contact a rare location. He particularly enjoys digital modes on HF. He is currently working toward the Worked All States (44 of 50), DXCC (68 entities worked), and Worked All Zones (31 of 40 worked) awards.

A few highlights of his limited radio experience have been earning 1st place in the 7th call area in the ARRL's RTTY Rookie Roundup contest in August (he's slow to mention that there were only 3 entries), doing neutral support in LOTOJA (he says there's nothing like cruising down Emigration Canyon at 60 MPH with 200 riders in your rear view mirror while yelling on the radio to the car ahead to get moving), listening to astronauts on the International Space Station, working 6 continents within 2 hours on 10 meters, building a real-time online logbook at http://smithplanet.com/logbook/, and putting new pins in exotic locations on the map in his shack.



Jared lives in Smithfield with his wife and 2 children. He enjoys hunting, four wheeling, astrophotography, web design, and, of course, ham radio - a hobby he hopes to enjoy for years to come.

Wilderness Protocol

One of the great features of Amateur Radio is it gives amateur radio operators the ability to provide mutual assistance to one another. This aid can come in the form of providing direct assistance and / or passing emergency communications to authorities. There are two common procedures or protocols currently in place for mutual assistance on VHF & UHF FM frequencies. The Wilderness Protocol defines frequencies and times to send and monitor for emergency and priority communications. The LiTZ Protocol defines a method of sending a tone to notify others of emergency or priority communications. It is important for all amateur radio operators to be familiar with both protocols in order to summons or provide help to others when needed. The protocols are more effective when more people use them.

Note - Emergency communications can be transmitted on any frequency at any time. The Wilderness Protocol and LiTZ Protocol are in place to aid communications when no response is received.

The primary frequency monitored is **146.520 MHz**, secondarily or alternatively **52.525 MHz**, **223.500 MHz**, **446.000 MHz** and **1294.500 MHz** respectively. The idea is to allow communications between hams that are hiking, backpacking or camping in uninhabited areas, outside repeater range an alternative opportunity to be heard.

NOTE - This is NOT just for hikers, back packers, campers or similar situations. It is for ANYONE to use at ANYTIME, that you need assistance!

Recommended Use of "Wilderness Protocol"

MONITOR FREQUENCIES - Monitor the Primary Frequency - 146.520 MHz and any or all of the Secondary Frequencies - 52.525 MHz, 223.500 MHz, 446.000 MHz , 1294.500 MHz.

MONITOR TIMING - Monitor every 3 hours from 7:00 am (0700 Hrs) until 5 (five) minutes past the hour 7:05am (0705 Hrs). Monitoring times: 7:00am - 7:05am, 10:00am - 10:05am, 1:00pm - 1:05pm, 4:00pm - 4:05pm, 7:00pm - 7:05pm, 10:00pm - 10:05pm, 1:00am - 1:05am, 4:00am - 4:05am.

ALTERNATE TIMING - Monitor every 3 hours as suggested above, however monitor 5 minutes before the hour till 5 minutes past the hour. In case users watch is incorrect.

ENHANCED MONITORING - Fixed stations or portable stations with enough battery power listen every hour at the top of the hour. Continuous monitoring is also an effective option.

SCANNING MONITOR - Consider entering 146.520 MHz, 52.525 MHz, 223.500 MHz, 446.000 MHz and 1294.500 MHz in to your scanner radio, or extended scanning monitor radio.

INFORMING OTHERS - Remind others of this protocol at meetings, on nets and in the field.

CALLING FREQUENCY - 146.520 MHz is a calling frequency. Make your calls, and then move off the frequency so others can use the frequency. Suggested frequencies to move to 146.550 MHz, 146.430 MHz, etc. Suggested use 4 minutes after the hour. This timing would help those in trouble not be covered up.

USE THE LiTZ (LONG TONE ZERO - On Touch Tone Pad) - Begin calls for assistance with 10 or more seconds of Tone with the LiTZ (Long Tone Zero) signal.

REMEMBER - These are Calling Frequencies, and standard calling should only start at 4 minutes after the hour preceded by listening for 30 seconds. Listen First then Call CQ with short transmissions, then carefully listen. Listen First is always a best practice.

For more information about the Wilderness Protocol and the History of it, go to:

http://k4jwm.com/wilderness-protocol

http://www.arrl.org/FandES/field/ares-el/index.html?issue=2005-12-21

2011 BARC Christmas Party

When: 7 December

Arrive at 6 PM

Dinner served at 6:30 PM

Where: The Coppermill Restaurant

Cost is $21 per person.

Dinner menu: Prime Rib and Paprika Chicken Buffet.

Some of the prizes include a dual band radio, a fully assembled Tiny Tracker, $50 gift certificates

Field Day 2011 results

The ARRL as published the results for Field Day 2011.
Here are the Utah section results and our club is highlighted in blue.

Field Day 2011 Results - Utah Section

#	Call	Score	Category	QSOs	Power Mult	GOTA Cal	Section	Participants	Club
1	K7UM	16,668	4A	5,363	2	KF7P	UT	32	Utah DX Assn
2	K7DAV	4,828	3A	1,081	2	AL7AA	UT	104	Davis Co ARC
3	W7SP	4,434	2A	1,059	2	K7LO	UT	115	Utah ARC
4	WA7LNW	3,700	1B1B	355	5		UT	1	
5	K7GL	2,498	3A	804	2	K7NAL	UT	20	Wasatch Back Tri-Co AR Group
6	W7IVM	2,394	5A	488	2		UT	50	
7	K7UB	2,368	4A	562	2		UT	30	Golden Spike ARC
8	N5LZ	2,180	1B1B	203	5		UT	1	
9	N0KGM	1,956	1F	753	2		UT	3	
10	K7EA	1,658	1E	352	2		UT	1	
11	W7SU	1,656	2A	258	2		UT	40	Ogden ARC
12	N7HRC	1,420	4A	135	2	N7HRC	UT	10	
13	NA7UT	1,100	1B2B	130	5		UT	2	
14	W7BAR	948	5F	136	2		UT	30	
15	WX7G (+N7BW)	578	1B2	125	2		UT	2	
16	W7SUR	570	2A	185	2		UT	9	Skyline RC
17	WI7J	482	1A	166	2		UT	3	
18	KB0LQJ	330	1E	16	5		UT	1	
19	AK7O	258	1D	52	2		UT	1	
20	WA7YAZ	250	1D	61	2		UT	1	
21	KC7PVD	206	1E	28	2		UT	1	
22	WV7P	202	1D	76	2		UT	1	
23	KF7PLA	175	1E	1	5		UT	1	

Local news involving Ham Radio

With the wind storms that occurred in Davis County last week you may have seen the articles that appeared in the paper and the rest of the news of all the damage that occurred. Some of the damage also impacted the Davis County Sheriff's Office radio system, creating "big radio problems." With the equipment problems and adding to that more than double the number of emergency calls the Davis County Sheriff asked for assistance from Ham radio. Check out the whole story on KSL, they have a good story on ham radio efforts during and after the wind storm: http://www.ksl.com/index.php?nid=148&sid=18335745

The ARRL Letter for November 17, 2011

Amateur Radio in Space: New Space Station Crew Members Launch from Kazakhstan

Three new astronauts -- Dan Burbank, KC5ZSX, Anton Shkaplerov and Anatoly Ivanishin -- are now onboard the International Space Station. The Soyuz TMA-22 spacecraft carrying the new trio launched from the Baikonur Cosmodrome in Kazakhstan at 0414 UTC Monday, November 14. Expedition 29 Commander Mike Fossum, KF5AQG, and flight engineers Satoshi Furukawa, KE5DAW (JAXA) and Sergei Volkov, RU3DIS (RKA), welcomed their new crewmates when the hatches opened at 0739 UTC Wednesday, November 16. Burbank, Shkaplerov and Ivanishin are scheduled to live and work aboard the ISS until March. Read more here.

The Expedition 29/30 crew, shortly after the Soyuz carrying the new crew docked with the ISS. Front row (Expedition 29), left to right: Anton Shkaplerov, Dan Burbank, KC5ZSX, and Anatoly Ivanishin. Back row (Expedition 30), left to right: Satoshi Furukawa, KE5DAW, Mike Fossum, KF5AQG, and Sergei Volkov, RU3DIS. Volkov was one of two Russian cosmonauts who deployed the ARISSat-1 satellite from the ISS in August.

ARRL and Amateur Radio Featured on Fox News

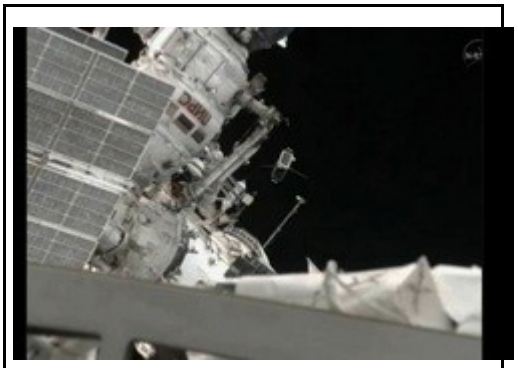
In a story published on the Fox News website on November 22, reporter Michelle Macaluso called Amateur Radio the "newest trend in American communication." Macaluso cited numbers provided by the FCC that proclaimed that in October 2011, there were more than 700,000 radio amateurs in the US. Read the story here on the Fox News website.

Amateur Radio in Space: Apply Now to Host a Real-Time Conversation with Crewmembers Onboard the ISS

NASA is now accepting proposals from US schools, museums, science centers and community youth organizations to host an Amateur Radio on the International Space Station (ARISS) contact between July 15, 2012 and January 15, 2013. To maximize these radio contact opportunities, NASA is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan. Proposals are due January 30, 2012.

Using Amateur Radio, students can ask astronauts questions about life in space and other space-related topics. Students fully engage in the ARISS contact by helping set up an Amateur Radio ground station at the school and then using that station to talk directly with a crewmember on the International Space Station for approximately 10 minutes. ARISS has a network of mentors to help obtain the technology required to host this exciting opportunity for students. Read more here.

Amateur Radio in Space: ARISSat-1 May De-Orbit in April 2012



ARISSat1-1 was deployed from the ISS on August 3, 2011. [Screenshot courtesy of

According to predictions from Mineo Wakita, JE9PEL, the ARISSat-1 satellite is due to re-enter Earth's atmosphere in early April 2012. Launched from the International Space Station on August 8, the satellite is traveling in a low orbit and is steadily losing altitude. The rate of orbital decay may be accelerated by increasing atmospheric density caused by increased solar activity. With that factor in mind, some ARISSat-1 decay predictions suggest re-entry as early as February 1. ARISSat-1 remains quite active, sending voice messages, digital telemetry and Slow Scan TV images. Amateurs have also been able to enjoy contacts through ARISSat-1's linear transponder despite the fact that the UHF antenna was apparently damaged prior to (or during) deployment. Last month, AMSAT-NA announced a competition to see who can record the last bits of telemetry as ARISSat-1 makes its final plunge. To decode the CW or BPSK telemetry you must use the *ARISSATTLM software* for *Windows* or *Mac OS*. The CW signal is transmitted at 145.919 MHz and the BPSK signal appears at 145.920 MHz, plus or minus Doppler.

The ARRL Letter for November 23, 2011

On the Air: FCC Releases New Rules for 60 Meters

On November 18, the FCC released a *Report and Order* (*R&O*), defining new rules for the 60 meter (5 MHz) band. **The new rules will not go into effect until 30 days after being published in the *Federal Register*, which has not yet happened.** These rules are in response to a *Petition for Rulemaking* filed by the ARRL filed more than five years ago, and a June 2010 *Notice of Proposed Rulemaking*. In the *R&O*, the FCC replaced one of the channels, increased the maximum authorized power amateur stations may transmit and authorized amateur stations to use three additional emission designators in the five channels in the 5330.6-5406.4 kHz band (60 meters).

The Amateur Radio Service in the United States has a secondary allocation on 60 meters. Only those amateurs who hold General, Advanced or Amateur Extra class licenses may operate on this band.

Amateur stations must not cause harmful interference to -- and must accept interference from -- stations authorized by any administration in the fixed service, as well as mobile (except aeronautical mobile) stations authorized by the administrations of other countries.

The ARRL will announce on its website when the rules are published. Additional information can currently be found on the web at, http://www.arrl.org/news/fcc-releases-new-rules-for-60-meters.

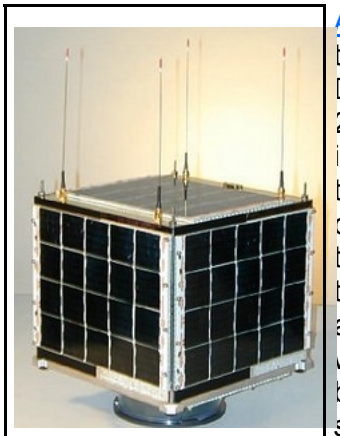
Public Service: When Brutal Storm Slams Alaska, Hams Provide Critical Communications

Winter storms are nothing new to Alaska, "the Last Frontier." But even infrastructure built to withstand some of the harshest conditions can fail. As a November storm pummeled the small, isolated villages along Alaska's western coast, it knocked out power lines and communications across the region. The only way the villages could communicate with each other -- and with officials and weather forecasters in Fairbanks and Anchorage -- was via ham radio. "The hams were providing critical observations," explained Carven Scott, the Science and Operations Officer at the National Weather Service's office in Anchorage. "We don't have a lot of meteorological observations in the west. We don't have the instruments out there."

Scott told the *Alaska Dispatch* -- an online-only news service -- that the messages he received from radio amateurs were "deceptively simple": How fast the wind was blowing and from what direction, sea level, wave height, whether it was snowing or raining and the temperature. "These seemingly small details from various villages made a big difference for the weather service," he told the *Dispatch*. "A lead forecaster told Scott that 'whatever you do, don't cut it off because this stuff is really helping us.' Through the ham radio network, Scott and his colleagues learned that river ice in Koyuk was backing up and spilling onto the banks, roofs had blown off in Nome, water was surging in Nome, and rain and snow were falling in Shaktoolik and Savoonga." Read more here.

The ARRL Letter for December 1, 2011

Amateur Radio in Space: AMSAT Announces End of OSCAR 51 Mission



OSCAR 51 was launched in 2004 and became one of the most popular Amateur Radio satellites ever created. [Photo

AMSAT-OSCAR 51 -- the popular FM repeater satellite -- has likely reached the end of its operational lifespan. AMSAT-NA Vice President of Operations Drew Glasbrenner, KO4MA, issued the following statement on November 29: "It is with a heavy heart I report that AO-51 has ceased transmission and is not responding to commands. The last telemetry data indicated that the third of six batteries was approaching failure to short, and observations indicate the voltage from three cells is insufficient to power the UHF transmitters. The IHU [internal housekeeping unit] may continue to be operative. Initial tests with the S band transmitter were also not positive, although more attempts are in order. We have tried leaving the satellite in an expected state where if voltages climb high enough, the 435.150 transmitter may possibly be heard. The command team will regularly attempt communications with the satellite over the coming months (and years). There is always the possibility that a cell will open and we could once again talk to our friend while illuminated. Thanks to all who helped fund, design, build, launch, command, and operate AO-51. Its 7 year mission has been extraordinary."

Amateur Radio Fun: The Night Before Christmas -- From a Ham's Perspective

The December 1930 cover of *QST* magazine is one of the many Amateur Radio-related items featured in *A Ham's Night Before Christ-*

Just in time for the Holidays, Gary Pearce, KN4AQ, has created a video version of Clement Clark Moore's poem *A Visit from St Nicholas* -- more commonly known as *The Night Before Christmas* -- but Pearce's version has a decidedly Amateur Radio twist. With a guitar accompaniment by Don Mercz, WA3AYR, *A Ham's Night Before Christmas* features *QST* magazine covers, Gil cartoons and Christmas-themed *QST* advertisements from days gone by. Click here to watch the video on the ARRL YouTube channel.

On the Air: The ARRL 10 Meter Contest -- Get On While the Bands Are Hot!

Steve Gette, KF7GNI, of Saint Helens, Oregon, made his first-ever attempt at contesting in the 2010 ARRL 10 Meter Contest from the shack of Mike Ritz, W7VO. [Mike Ritz, W7VO, Photo]

Ten meters -- in case you haven't heard, is alive in a big way! That means that the ARRL 10 Meter Contest -- coming up the weekend of December 10-11 -- is going to be the one of the best we've seen in years! During this event, many propagation modes will be available: Sporadic-E will help you work stateside stations, a touch of meteor scatter in the morning will give you split-second chances to work stations -- you'd better be quick, though! -- and DX stations will be plentiful, thanks to the return of F2 propagation. ARRL Contest Branch Manager Sean Kutzko, KX9X, said that he keeps hearing from numerous hams who have been licensed only three or four years, telling him that they've never experienced a 10 meter opening because they weren't licensed during the last solar cycle peak: "A common phrase I'm hearing is, 'Now I understand what all the Old-Timers in my club were talking about -- 10 meters is great!' With a concentration of activity for the contest, there will be an opportunity for the first time in several years to experience the beauty of a wide-open 10 meter band. With so much excitement worldwide over the great conditions, the 2011 ARRL 10 Meter Contest could see the highest level of participation in a very long time!" Read more here.

Membership in **The Bridgerland Amateur Radio Club, Inc. (BARC)** is open to anyone interested in Amateur Radio. You do not need an amateur license to join. Learn more online at http://www.barconline.org/ or by emailing membership@barconline.org .

The Bridgerland Amateur Radio Club provides the following to its members:

- A repeater system that covers northern Utah from Bear Lake to Salt Lake Valley.
- Events where you can practice your radio skills in a fun learning environment.
- Club meetings are held the second Saturday each month from October to May. An opportunity to meet and learn from other amateur operators.
- Social activities where members can make friends and interact with other members.

Your tax deductible membership supports club activities and the BARC repeater system.

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The Bridgerland Amateur Radio Club, Inc.

Membership application for the year 2012

Dues are in effect January 1, 2012 through December 31, 2012
New Members Only, individual membership dues prorated quarterly
Please indicate if you or family member is an American Radio Relay League (ARRL) member

Name _____ **Call Sign** _____ **Date Paid** _____

☐ **ARRL member**

P.O. Box _____ **Street Address** _____

City _____ **State** _____ **Zip Code** _____

Home Phone ( ) _____ **Work Phone ( )** _____

E-mail _____

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

☐ **Individual Membership - $25** **$** _____

☐ **Addition Family members in same household - $3 ea** **$** _____

☐ **Donation for Repeater upgrades / equipment purchases** **$** _____

Total $ _____

Names and Call Signs of additional family members

Name _____ **Call Sign** _____

☐ **ARRL member** **E-mail** _____

Name _____ **Call Sign** _____

☐ **ARRL member** **E-mail** _____

Name _____ **Call Sign** _____

☐ **ARRL member** **E-mail** _____

Bridgerland Amateur Radio Club is an ARRL affiliated club

Mail your completed form and a check to: B.A.R.C., P.O. Box 111, Providence UT 84332-0111
or pay online at http://www.barconline.org/?q=node/242

B.A.R.C. is a non-profit organization

Questions for General Class License

1. (G1C03) What is the maximum bandwidth permitted by FCC rules for Amateur Radio stations when transmitting on USB frequencies in the 60 meter band?
A. 2.8 kHz
B. 5.6 kHz
C. 1.8 kHz
D. 3 kHz

2. (G2C05) What is the best speed to use answering a CQ in Morse Code?
A. The fastest speed at which you are comfortable copying
B. The speed at which the CQ was sent
C. A slow speed until contact is established
D. 5 wpm, as all operators licensed to operate CW can copy this speed

3. (G3B04) What is a reliable way to determine if the Maximum Usable Frequency (MUF) is high enough to support skip propagation between your station and a distant location on frequencies between 14 and 30 MHz?
A. Listen for signals from an international beacon
B. Send a series of dots on the band and listen for echoes from your signal
C. Check the strength of TV signals from Western Europe
D. Check the strength of signals in the MF AM broadcast band

4. (G4C02) Which of the following could be a cause of interference covering a wide range of frequencies?
A. Not using a balun or line isolator to feed balanced antennas
B. Lack of rectification of the transmitter's signal in power conductors
C. Arcing at a poor electrical connection
D. The use of horizontal rather than vertical antennas

5. (G5B06) What is the output PEP from a transmitter if an oscilloscope measures 200 volts peak-to-peak across a 50-ohm dummy load connected to the transmitter output?
A. 1.4 watts
B. 100 watts
C. 353.5 watts
D. 400 watts

6. (G6B09) Which of the following describes the construction of a MOSFET?
A. The gate is formed by a back-biased junction
B. The gate is separated from the channel with a thin insulating layer
C. The source is separated from the drain by a thin insulating layer
D. The source is formed by depositing metal on silicon

7. (G7B08) How is the efficiency of an RF power amplifier determined?
A. Divide the DC input power by the DC output power
B. Divide the RF output power by the DC input power
C. Multiply the RF input power by the reciprocal of the RF output power
D. Add the RF input power to the DC output power

8. (G8B01) What receiver stage combines a 14.250 MHz input signal with a 13.795 MHz oscillator signal to produce a 455 kHz intermediate frequency (IF) signal?
A. Mixer
B. BFO
C. VFO
D. Discriminator

9. (G9C01) Which of the following would increase the bandwidth of a Yagi antenna?
A. Larger diameter elements
B. Closer element spacing
C. Loading coils in series with the element
D. Tapered-diameter elements

10. (G0B03) Which size of fuse or circuit breaker would be appropriate to use with a circuit that uses AWG number 14 wiring?
A. 100 amperes
B. 60 amperes
C. 30 amperes
D. 15 amperes

(For answers to test questions see page 14)

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Merry Christmas and Happy New Year

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