BARC
BRIDGERLAND AMATEUR RADIO CLUB

THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

March 2015

Some Contents…

ARRL Affiliated

PRESIDENT'S MESSAGE

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations providing continuous broadcasts (24 hours a day) of the latest weather information from local National Weather Service offices. Weather messages are repeated every 4 to 6 minutes and are routinely updated every 1 to 6 hours or more frequently in rapidly changing local weather or if a nearby natural hazardous or man-made condition exists.

Broadcasting weather information began in 1960 with The Weather Bureau broadcasting marine weather information in Chicago and New York City on two VHF radio stations as an experiment. After that, the broadcasts expanded to serve the general public in coastal regions in the 1960s and early 1970s. When the Weather Bureau became part of the National Oceanic and Atmospheric Administration (NOAA), it changed its name the National Weather Service (NWS). Local National Weather Service staffs were the voices heard on NOAA Weather Radio stations from its induction until the late 1990s when "Paul" was introduced. The messages were recorded on tape, and later by digital means, and then placed in the broadcast cycle. "Paul" was a computerized voice using the DECTalk text-to-speech system. "Paul's" voice was dissatisfactory and difficult to understand, thus "Donna" and "Tom" were introduced using Speechify text-to-speech system by SpeechWorks. Paul can still be heard on some stations giving the station call sign and frequency, and occasionally full statements will be given if the VIP processor gets overloaded with products or a failure occurs.

A special feature of the NOAA Weather Radio system was the transmission of a single 1050 Hz tone prior to the broadcast of any message alerting the general public of significant weather events. Later, the National Weather Service developed Specific Area Message Encoding (SAME) codes that are send a few seconds before the 1050 Hz tone that allows more advanced receivers to only listen for certain warnings that carry a specific code for the local area such as flash flood or a tornado, and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

On my mobile amateur radio, Kenwood TM 710, and my handheld, ICOM IC-92A, they have 10 channels preprogram for weather channels. The table on the right lists the weather frequencies. The WX1 through WX7 frequency assignments are from NOAA and are consistently used across U.S. Government agencies including the Coast Guard. WX8 and WX9 are Canadian Continuous marine broadcast channels. WX10 was formerly used by the NWS for coordination during power outages but is no longer in active use. Some equipment manuals confuse the WX and Public Alert numbering schemes, and provide the incorrect label for channels. The WX numbering scheme does not increase in frequency order because the weather channels were created gradually over the years. 162.55 was at first the only frequency (so was thus WX1), then 162.4 (WX2) and 162.475 (WX3) were added later to prevent RF interference. The others mainly came into use in the 1990s in less-populated rural, areas and as fill-

Frequency	Official name	Marine Channel	Public Alert Channel
162.550 MHz	WX1	39B	7
162.400 MHz	WX2	36B	1
162.475 MHz	WX3	97B	4
162.425 MHz	WX4	96B	2
162.450 MHz	WX5	37B	3
162.500 MHz	WX6	38B	5
162.525 MHz	WX7	98B	6
161.650 MHz	WX8	21B	
161.775 MHz	WX9	83B	
163.275 MHz	WX10	113B	

(Continued on page 4)

UPCOMING 2015 ACTIVITIES

07 March, 8:00 AM — VE Test Session @ USU ENGR Bldg RM 302 (Test only)

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11 March, 7:30 PM — ARRL Rocky Mountain Division Net IRLP Node: 9871

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14 March, 10:00 AM — **BARC Club Meeting**
ARES - RACES with N7GTE Bob Craven

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17 March, 6:30-7:30—Elmer Night-Cache County Sheriffs Office 3rd Floor

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18 March, 7:00 PM — Cache County ARES meeting at the Sheriff's Office

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21 March, 8:00 AM — RACES HF Net 3920 KHz

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04 April — Longmont ARC LarcFest (Longmont, CO) (For more info click here)

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08 April, 7:30 PM — ARRL Rocky Mountain Division Net IRLP Node: 9871

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11 April, 10:00 AM — **BARC Club Meeting**
PC in the shack - D-STAR DMR Fusion

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15 April, 7:00 PM – Cache County ARES meeting at the Sheriff's Office

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16 April, 8:00 PM - RACES VHF Net 147.18 Snowbird 147.20 IRLP 146.72 Mt. Logan

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18 April, 8:00 AM — 5:00 PM One day ham class—General Class License (USU ENGR rm 302) for more information & study materials click here

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21 April, 6:30-7:30 — Elmer Night-Cache County Sheriffs Office 3rd Floor

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For more calendar information see the 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.

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.

(Presidents Message Continued from page 2)
in broadcast translators relaying an existing station or sending a separate, more localized broadcast into remote or mountainous areas, or those areas with reception trouble. The Public Alert Channel numbering is listed in sequence by the increasing radio frequency.

There are 1,026 stations covering approximately 95% of the United States, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories.

At my QTH in Wellsville, here are some NWR stations that are received.

Site Name	Transmitter Name	Call Sign	Frequency	WX Channel	Power	Weather Forecast Office
Salt Lake City	Bacchus	KEC78	162.550	1	330	Salt Lake City, UT
Logan	Mount Logan	WXM22	162.400	2	100	Salt Lake City, UT
Coalville/ Park City	Lewis Peak	KJY60	162.475	3	100	Salt Lake City, UT
Sedgwick Peak	Soda Springs	KZZ72	162.425	4	100	Pocatello, ID
Kemmerer	Kemmerer	KJY75	162.525	7	300	Riverton, WY

Each of the stations are providing local weather forecasting for its coverage area. Bear Lake is listed for WX Channel 6, but the station was not heard so it might be off the air until boating season starts up.

Depending on your location or if you are traveling, you will be able to hear other NWR stations. Here are two links that list NWR stations: NWR county coverage listing by state and NWR station listing by state.

In recent years, national emergency response agencies such as FEMA and the Department of Homeland Security have begun to take advantage of NWR's ability to efficiently reach a large portion of the U.S. population. When necessary, the system can also be used (in conjunction with Emergency Alert System) to broadcast civil, natural and technological emergency and disaster alerts and information, in addition to those related to weather - hence the addition of the phrasing *"All Hazards"*.

73,
Cordell
KE7IK

Time to Learn or Brush-up on Winlink – Email over Ham Radio

For those who have been training with Winlink/RMS Express with Cache County ARES this is a reminder to get on the air and test your system.

If you have not used RMS Express for a while the current vision is 1.2.36.0 and you may need to update your software. The latest update mentioned Message Templates. Sounds like these templates allow you to apply a template and pre-populate selected fields in a message. There is info in the Help file about templates if you want to give it a try.

Also now is a good time to start training on shrinking files and pictures to be sent with RMS Express. There are some files on http://barconline.org/about/ares/ to help you compress files and pictures. There are two files created by Kent AD7HK and Shirley AD7HL and one by KD5HW. One heads up, the program that Kent and Shirley's paper suggests had a Trojan attached. My virus software caught it and all is good and the program did run!

If you are new to Winlink and have an interest in learning RMS Express you should go to http://www.winlink.org and do a little browsing around and learn about the Winlink System. You should also download the latest version of RMS Express (http://www.winlink.org/RMSExpress).

There is also a series of good YouTube videos by Rick Frost, K4REF that will walk you through setting up and using a RMS Express station. A link to these videos can be found on www.barconline.org/about/ares/ .

If you get it all set up and want to use the system, on the frequency of 145.030 simplex you can connect to the RMS Packet Gateway N7UWX-10 located at the Cache County Sheriffs office. Another local RMS Gate way is available on 144.950. It's callsign is WS7FD-10. It is located at the Smithfield Fire Station. And there is a packet digipeater located on Mt. Logan that can be used to digipeat through. Its callsign is N7UWX-2.

There is some good info on how Winlink/RMS Express is used for the BEAR 100 Ultra Marathon found here http://barconline.org/bear-100/. This is one of the many uses of the Winlink System!

If you need help there are lots of good Elmer's out there! The short list included AC7II, KE7IK, WA7MXZ, N7UWX and AD7HL.

Some Radios and equipment for Sale

2 ea. Browning Mark III's w/VFO's & 776 & Shure desk mics.
W/complete align & repair manuals. MANY NOS spare tubes

Icom IC-735(10-160 meter) Recent "COMTEK" tune & align w/ps30 PS (Feb 2013)

Icom IC-735 W/bad Power amp.

Gizmotchy G51, 5 element, vert/hoz beam (3yrs old),

MFJ-1777=G5RV=

NTE-105 rotator

NTE-106 Programmable rotator

RANGER 10,11,& 12 Meter rci 2N2970N2 (200watt)AM, FM, SSB, CW, transceiver
(RANGER no longer manufactures Ham Transceivers as of Dec.2014)

MFJ-299 Desk mic

MFJ-207 ant analyzer

MFJ-702 Antenna S/W

MFJ-250 Cantenna oil cooled dummy load W/oil

Dosey Dry 100 watt dummy load

Dosey portable SWR mtr

1ea RFD-XTR-2018 Extreme Echoe Mic

1ea RFD-577, ceramic element SSB Power Assist hand mic

1ea RFD-CR502 Ceramic AM/SSB amp. hand mics

Sencore SC-61 dual trace, 100MHz. Wave form Analyzer

Bendix Tube Tester.

2 used like new original Cobra 148GTL unmodified mobiles

New K-40 deck mount antenna

BK-2000 Solid State Signal Generator.

Looking for a good laptop computer, if you are interested in a trade or if you would like to make an offer on some or all of the Radio equipment please contact Coy Driskell in Smithfield at 435-535-0798.
Some of these can also be seen on KSL.com

Marginal Notes: You can go anywhere you want if you look serious and carry a clipboard.

The ARRL Letter for February 12, 2015
Denying Permission for FCC Station Inspection Nets Florida CBer a $3000 Fine

The FCC Enforcement Bureau has imposed a reduced fine of $3000 on a Florida, CB operator for failing to allow FCC agents inspect his station. The Commission issued Tommie Salter of Jacksonville a *Forfeiture Order* on February 5. Last August the FCC had proposed fining Salter $14,000 for denying agents from the FCC's Tampa Office permission to check out his station in the wake of renewed complaints of interference to a neighbor's "home electronic equipment." In March 2014, agents monitored radio transmissions on 27.245 MHz and used radio direction-finding techniques to track the signal's source to Salter's residence. The FCC said it agreed to reduce the proposed forfeiture based on Salter's financial circumstances.

"Mr Salter does not deny that he refused to allow the agents to inspect his CB station but alleges he could not stay for the inspection, because he had a doctor's appointment," the FCC *Forfeiture Order* said. The Enforcement Bureau said it was unable to substantiate Salter's appointment claim but said that he could have asked to reschedule the inspection in such a situation. The Bureau concluded that it could "find no reason to reduce the forfeiture based on his alleged appointment."

The FCC said financial documents that Salter provided offered "sufficient basis" to reduce the forfeiture to $3000. "We have previously rejected inability to pay claims in cases of repeated or otherwise egregious violations," the Commission added. "Therefore, future violations of this kind may result in significantly higher forfeitures that may not be reduced due to Mr Salter's financial circumstances."

The FCC's *Forfeiture Policy Statement* and its rules set a base forfeiture amount of $7000 for failure to permit inspection. Salter had previously received a *Notice of Violation* for refusing an inspection request in 2004, the *Notice of Apparent Liability for Forfeiture* (*NAL*) in the case noted, and he also had been fined for operating with a non-certificated transmitter during restricted hours the Commission had imposed following similar interference complaints. Read more.\

"Gray Radio Gang" Reactivates Vintage Battleship *Iowa* HF Transmitter

It's a massive project on a number of levels, but the so-called "Gray Radio Gang" that's been working to restore some of the vintage US Navy radio gear on board the Battleship *Iowa* (BB-61), docked in Los Angeles, recently fired up one of the vessel's transmitters for the first time in about 25 years. Restoration team member Jim Jerzycke, KQ6EA, recounted on his "Every Blade of Grass" blog how the group was finally able to get 950 W into a dummy antenna from one transmitter on 20 meters.

One of the Battleship *Iowa*'s AN/URT-23(C) transmitters. The exciter is at the top, the PA is in the middle, and the amplifier power supply is on the bottom. [Jim Jerzycke, KQ6EA, photo]

"We still have quite a way to go before we attempt to put one [transmitter] on the air, but the results were quite encouraging for at transmitter that was last powered up sometime in 1990," Jerzycke said in his blog. "BB-61 should be on the air later this year with a *big* voice!"

He told ARRL that, once transmitters are deemed operational, they probably would not be used very often on the ham bands. The Iowa already has a ham radio station, NI6BB, under the auspices of the Battleship Iowa Amateur Radio Association (BIARA), an ARRL-affiliated club. BIARA's president is Doug Dowds, W6HB. NI6BB has more modern gear but makes use of the ship's own antennas.

The BIARA is active from the *Iowa* most Wednesdays and for many national holidays, such as Veterans Day, Pearl Harbor Day, and Memorial Day, and for operating events such as the Museum Ships Weekend and International Lighthouse/Lightship Weekend. The station also has hosted Boy Scouts' Jamboree On The Air (JOTA) groups each fall.

Jerzycke said the Gray Radio Gang is composed of about 10 individuals with experience on various types of US Navy radio gear dating from the 1950s to the 1980s, when most of them served in the Navy. "At 63 years old, I'm one of the 'youngsters' in that group," he added. The team has been trying to get the original receivers, transmitters, RTTY gear, and antennas working again, Jerzycke said. "We are very fortunate in having the guys from the aircraft carrier *Midway* in San Diego and the Battleship *New Jersey* in Camden, New Jersey, who have provided us with technical help, documents, and spare parts."

Arnold Shatz, N6HC, at the helm of the Iowa's NI6BB club station.

The AN/URT-23(C) transmitters, he joked, are "built like a battleship," with a pair of 4CX1500Bs in the final and nominally capable of putting out a couple of kilowatts. He noted that once the Gray Radio Gang has confirmed the signal paths for the various shipboard transmitters and receivers, it will be able to put a transmitter/receiver pair in operation for certain special events. "At this time it's unlikely that we will use the original radio equipment for 'routine' Amateur Radio operations, as it's very manpower intensive, requiring at least six people to operate," Jerzycke explained.

"It's an honor and a privilege to be able to work on the *Iowa*, and I enjoy every minute of it!"

Free Android Propagation Tool Available:

WSPR World Watch is a free Android app that plots real-time radio transmission paths on a world map and incorporates a background display of the gray line or terminator. It was developed by Derek Turner, G4SWY. Users may view paths of individual stations, and there is an aurora plot option and display of space weather indices. *WSPR* is designed for probing radio propagation paths using low-power, beacon-like transmissions. *WSPR* signals convey only a call sign, Maidenhead grid locator, and power level. Receiving stations with Internet access automatically upload reception reports to a central database.

The ARES E-Letter for February 18, 2015
Mt. Hamilton Classic Road Race: Communications Challenges Posed to Operators

The Mount Hamilton (near San Jose, California) Classic Road Race is a 63.5 mile road course for bicycles that climbs 4,500 feet in the first 20 miles to the top of Mt. Hamilton, and then continues 43 miles through remote ranch lands to the finish in Livermore. Total elevation gain exceeds 6,000 feet. The bike race is sponsored by Summit Bicycles and the San Jose Bicycle Club. A water bottle handout station is sited at Isabel Creek, mile 25. And a feed zone is at mile 40 at a fire station. Every year for at least 15 years the Livermore Amateur Radio Klub with help from San Jose Races supports the event with radio communications.

The bicycle riders are truly racing and the fastest rider last year (2014) reached the summit in one hour, 11 minutes. That's an average speed of 17 mph for 20 miles and climbing 5000 feet.

Med-evac helicopter airlifts a victim from the Mt. Hamilton race course. (photo courtesy Arnold Harding, KQ6DI)

Amateur Radio operators are assigned to the downhill portions, the dangerous spots where accidents are more likely to occur. Bottoms of downgrades are chosen for checkpoints. The operator will either see the accident or other racers will inform the operator of an accident as they pass the checkpoint. The net control station then directs the appropriate investigation of the incident. Often, the rider has gotten up, back on his bike and continued, or the injuries were minor. Unfortunately, some of the accidents require a hospital visit, and some victims are airlifted to the facility by helicopter.

Of course, the problem faced by hams at the bottom of downgrades is that they are in the worst place for radio communications coverage. Hills or canyon rims block or diminish VHF signals that travel mostly by line of sight, posing tactical and strategic challenges.

Over the years, however, the communications plan has evolved to a point where it works well. Formerly, a net control station on the mountain could hear and communicate with most checkpoints, but the checkpoint stations/operators could not hear each other, so all traffic needed to be repeated by net control (use of repeaters was not an option at that point). Stations that couldn't communicate directly

needed the relay. A larger problem occurred when one checkpoint was transmitting important information, and another station, hearing nothing on the frequency, also began transmitting. More "doubles" were occurring, and less real information was getting passed. A repeater would solve most of the problems, so constructing a portable repeater system was started.

The geologic aspects of the western side of Mt. Hamilton had posed problems for communicators until the last couple of years. There are two ridges between the summit and the race's start line, which is on the edge of a hill at the bottom of the mountain, so that operators there could not hear a station at the summit. The work-around first tried was for communications to be handled/relayed by simplex to another ham checkpoint in a clear location, with a relay to the net control station. Multiple 440 MHz repeaters were then tried over the years, but the locations of all involved just didn't quite work. Finally, an existing, but closed, linked 440 MHz repeater was tried, after coordination with system operators who opened the repeater for the day for the race operation. This repeater now provides the efficient and effective coverage needed, working perfectly on the west side of the mountain, and to the net control station on the mountain.

The portable 2-meter repeater was finished and placed on a small hill part way down the east side of the mountain, providing coverage for a large portion of the rest of the race course route. All of the check points on the first 25 miles of road from the summit can access this repeater, even with just an H-T. An unanticipated benefit was that newer hams with just an H-T were equipped to help effectively!

Between the checkpoint at 25 miles from the summit and a checkpoint called "Relay" at 35 miles from the summit is an area called "The Narrows," a narrow, deep canyon. For coverage here, a cross band repeater is sited at the Relay point. The cross band repeater links the portable 2-meter repeater to all of the checkpoints from The Narrows to the Finish line.

There are two EMT vehicles providing medical emergency support, followed by ham operators using FRS radios to provide communications between the vehicles. There is also a ham assigned to a CalFire station, also using an FRS radio to communicate to the engine if needed.

There are ten categories of racers for this race, and they are stretched out along the road. Once the last rider has passed mile 25, the primary communications changes to another 2-meter repeater that reaches into the Narrows, and the portable repeater is removed. Also, at this time, primary net control functions are transferred from Mt. Hamilton to the Relay check point. Four primary amateur frequencies are used, with another four frequencies available as backup as needed. For the 2014 event, 43 radio amateurs were involved in providing communications support. - *Arnold Harding, KQ6DI, Livermore (California) Amateur Radio Klub*

Letters: Follow-Up on Five Year Old ARES Member

In a follow up to last month's issue news item on Colton Ragsdale, KE0CRD, the five year old newly licensed ham, here is a great video piece about this achievement from our local channel 9 NBC News affiliate in Denver. Ragsdale also became an ARRL Life Member. -- *Jack Ciaccia, WMØG, ARRL Colorado Section Manager*

Amateur Radio Saved My Life

September 30, 2013 started out as a beautiful day in the east-central Iowa town of Clinton, on the Mississippi river. I had just left my job at the end of the day and wanted to enjoy the fabulous weather. I decided to throw my leg over my motorcycle and see what the Fall countryside looked like.

After an hour of riding, the wind whipped up to the point where I decided to head home. My route took me by a construction site on the edge of town. This is where everything went wrong. I must have been gawking at the construction site and not paying attention to the road. A big gust of wind hit me and I landed in a 10 foot deep ditch.

I was unconscious and when I awoke in the ditch, by estimate an hour later, I had to figure out where I was. The motorcycle was on top of me pressing me into the dirt wall of the ditch. I looked up and could see the edge of the road, six feet above my head. I removed my helmet and considered my options deep in the ditch and unable to move my lower body.

I heard cars approach and stuck up my hand and waved -- nobody stopped. They could not see me in the ditch. I thought about trying to throw my helmet onto the road to attract attention but could not get my arms to work well. That is one of the last things I remembered for six days.

The balance of my ordeal was conveyed to me long after the accident by friends and two daughters. I had been riding the motorcycle with an H-T hooked into my pants pocket with a speaker mic attached to my collar. I was informed later that I had put out an emergency call on the 145.430 MHz machine in Clinton.

Two ham-friends heard the distress call and responded. One called 911, and the other drove to the area I described on the radio. He drove by my location twice and even the police could not find me from their cars. The other operator stayed on the phone with the dispatcher and tried to get me to give a better description of my location. My speech was slurred when I responded and then I apparently lost consciousness. The 911 dispatcher wanted me to call on my cell phone and give them a better description of my location - I never heard the request.

The officer that found me in the ditch said he and his partner had exited the squad car and walked along the side of the road until they spotted me at the bottom of the ditch, which had washed away at the bottom, wedging the bike and me into the wash out. Having lost consciousness, I never saw nor heard anyone until one of the emergency personnel woke me, stating they were going to get me out and to the hospital.

The next day October 1, 2013, I was transported by ambulance to the hospital in Iowa City. CT scans revealed a broken back pinching the spinal column, five cracked vertebra, a fractured pelvis, broken elbow and a bleeding brain injury. A year of surgeries, infections, pneumonia and physical therapy followed. I am grateful to be able to tell my story.

Amateur Radio, good friends, and emergency and medical professionals saved my life. -- *Gerald Johannsen, K9STP, Clinton, Iowa*

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 2015

Dues are in effect January 1, 2015 through December 31, 2015
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** _____

ARRL The national association for AMATEUR RADIO

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/join-barc via PayPal

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

Questions for General Class License

1. (G1A02) On which of the following bands is phone operation prohibited?
A. 160 meters
B. 30 meters
C. 17 meters
D. 12 meters

2. (G2A05) Which mode of voice communication is most commonly used on the high frequency amateur bands?
A. Frequency modulation
B. Double sideband
C. Single sideband
D. Phase modulation

3. (G3A06) What is a geomagnetic storm?
A. A sudden drop in the solar-flux index
B. A thunderstorm which affects radio propagation
C. Ripples in the ionosphere
D. A temporary disturbance in the Earth's magnetosphere

4. (G4A04) What reading on the plate current meter of a vacuum tube RF power amplifier indicates correct adjustment of the plate tuning control?
A. A pronounced peak
B. A pronounced dip
C. No change will be observed
D. A slow, rhythmic oscillation

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. (G6A05) Which of the following is one effect of lead inductance in a capacitor used at VHF and above?
A. Effective capacitance may be reduced
B. Voltage rating may be reduced
C. ESR may be reduced
D. The polarity of the capacitor might become reversed

7. (G7A02) Which of the following components are used in a power-supply filter network?
A. Diodes
B. Transformers and transducers
C. Quartz crystals
D. Capacitors and inductors

8. (G8B06) What is the total bandwidth of an FM-phone transmission having a 5 kHz deviation and a 3 kHz modulating frequency?
A. 3 kHz
B. 5 kHz
C. 8 kHz
D. 16 kHz

9. (G9B06) Where should the radial wires of a ground-mounted vertical antenna system be placed?
A. As high as possible above the ground
B. Parallel to the antenna element
C. On the surface or buried a few inches below the ground
D. At the top of the antenna

10. (G0A08) Which of the following steps must an amateur operator take to ensure compliance with RF safety regulations when transmitter power exceeds levels specified in part 97.13?
A. Post a copy of FCC Part 97 in the station
B. Post a copy of OET Bulletin 65 in the station
C. Perform a routine RF exposure evaluation
D. All of these choices are correct

Marginal Notes: I don't suffer from stress, but I am a carrier.

(For answers to test questions see page 14)

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