



THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

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

December 2014

Merry Christmas

Happy New Year

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We had a year filled with successful events and activities, including interesting and informative programs presented at the club meetings. I want to thank all of you who helped out this year. I wouldn't dare try to list you all. I would miss too many. But 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.

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 DMR. 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.

Have a safe December and Happy Holidays.

73,
Cordell
KE7IK



UPCOMING 2014 ACTIVITIES

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

2015 ACTIVITIES

10 January, 10:00 AM - BARC Club Meeting

Antenna modeling software 4NEC2, Kelby Davis AD7VO



14 January, 7:30 PM - ARRL Rocky Mountain Division Net IRLP Node: 9871

17 January, 8:00 AM — RACES HF Net 3920 KHz

17 January—Northern Colorado ARC Winter Hamfest (Loveland, CO)

For more information see www.RockyMountainDivision.org or [click here](#)

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

For more calendar information see the barconline.org/calendar

November BARC Club Meeting Election Results

At the November club meeting elections were held for electing the Officers and Board Members for 2015. The first vote that was taken was to amend the BARC bylaws to add “Article IV Section 1A: If the Board of Directors determines that more at large Board Members are needed, they shall be elected per Article V and Article XII.” The Amendment was voted on and passed, then the rest of the elections were held, including voting for 4 board members. There were nominations from the floor. The votes were taken 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:	Tyler Griffiths	N7UWX
	Kelly Hansen	KF7TDP
	Laurie Littledike	KF7DKM
	Russell Lekis	KE7VFI



BARC CHRISTMAS PARTY

The BARC end of year Christmas Party was great. There were 60 in attendance at the Cooper Mill Restaurant. The dinner buffet for the evening was carved roast beef, medium deep fried shrimp, garlic mashed potatoes, seafood macaroni salad, tossed salad, mixed berry salad, a dinner roll, apple pie, and a beverage.

After dinner we started the program. Ted AC7II gave the Repeater Committee Report for 2014. Tyler N7UWX gave a report on the 2014 Activities.

Below is Tyler's summary of the time listed in his activities report.

Event	Organizer	# of Hams	Qty of Hours
Mt Man Rendezvous - May 19 & 20	Tammy Stevens	5 people	40 hours
Little Red Riding Hood - June 7	Russ Leikis	51 people	612 hours
Wasatch Back Relay - June 27	Tyler Griffiths, Russ Leikis	8 people	120 hours
Rocket Recovery - June 26, 27 & 28	Guy Hatch	14 people	504 hours
Field Day - June 27 & 28	Ted McArthur, Cordell Smart	36 people	864 hours
Rotary RAW - July 26	Tyler Griffiths, Jared Luther	25 people	150 Hours
Top of Utah 1/2 Marathon - August 23	Laurie Littledike, Tyler Griffiths	15 people	90 Hours
LOTOJA -September 6	Kevin Reeve, Tyler Griffiths	125 people	2250 Hours
Top of Utah Marathon - September 20	Tyler Griffiths, Laurie Littledike	54 people	486 Hours
BEAR 100 - September 26 & 27	Ted McArthur, Cordell Smart, Tyler Griffiths	45 people	871 hours
Bike the BEAR - September 27	Kelly Hadfield	15 people	120 hours

That is a total of 6,107 hours that ham radio has contributed to our communities! That's 254 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.

(Continued on page 5)

There were many door prizes that were given away to those attending the Christmas Party. The prizes were a RIGrunner 4004 USB, \$25 ARRL gift certificate, Larsen Dual Band Antenna NMO mount and line kit, two 15 bin portable parts storage cases, Ham Parts kit in a portable storage case, three Yaesu hats, Symphony chocolate bars, and two small awesome quilted table runners that were made by Linda Hansen. The top Christmas party prize, the RIGrunner 4004 USB, was won by John McEldowney KG7LBY.

The BARC Board presented three awards to club members who showed outstanding service in the club. Tyler Griffiths N7UWX received the President's Service Award, Tammy Stevens N7YTO received the President's Leadership Award, and Laurie Littledike KF7DKM received the Spirit of Amateur Radio Award.



Tyler N7UWX, Tammy N7YTO, Laurie KF7DKM

As shown by Tyler's activity report, hams donate their time to help others. So to award those who help in the club activities, there is a participation prize drawing each year. We give every Ham Radio operator that participates in any of our Club sponsored events a chance to win. Tickets are given to each ham that is on the attendance rosters of Club events. For every time your name is in a roster you receive one ticket. If you are an organizer of the event or a presenter then you get one more ticket. This year we had 928 tickets to draw from with 120 Hams on the list at a total of several thousand hours of time invested.

(Continued on page 6)

This year there were two participation prizes. The Grand Prize was a Kenwood TM-D710 G won by Laurie Littledike KF7DKM. The Second Prize was a Rig Runner 4004 USB won by Kevin Bosworth W7BOZ.



John KG7LBY, Laurie KF7DKM

The food, prizes, and camaraderie of the evening were wonderful. It was truly a great way for the club to usher in the Holiday Season.

Thank you everyone who participated. Get ready for next year's events.

Ted AC7II



The ARRL Letter for November 20, 2014

International Space Station Briefly "Ham-less" After Crew Members Return to Earth

The only two radio amateurs on the International Space Station (ISS) were among three crew members who returned to Earth on November 10, and another ham-astronaut won't arrive on board the ISS until later this month. An exciting 2015 appears to be in store.

NASA Flight Engineer Reid Wiseman, KF5LKT, and European Space Agency Astronaut Alexander Gerst, KF5ONO, joined Expedition 41 Commander and Russian Cosmonaut Max Suraev on the flight home this week. Traveling in a Soyuz space capsule, the trio touched down safely in Kazakhstan after some 6 months on the station. Wiseman and Gerst were active on Amateur Radio during their time in orbit, handling questions from curious Earthlings during Amateur Radio on the International Space Station ([ARRL ARISS](#)) educational contacts and, in Wiseman's case, his first ARRL Field Day in June -- an activity he [discussed](#) in a recent #askAstro YouTube post.



Reid Wiseman, KF5LKT, operated ARRL Field Day while on the ISS. [NASA image]

This was the first mission for both Wiseman and Gerst. While in space, the pair carried out a spacewalk to relocate a failed pump module and configure the station for upcoming additions. Wiseman completed a second spacewalk with fellow NASA astronaut Barry Wilmore, now the ISS Expedition 42 Commander.

According to ARISS, there will be no US Operational Segment hams on the ISS until December 7, and the ARISS Russian team will conduct any school contacts in the interim. European Space Agency astronaut Samantha Cristoforetti, IZ0UDF, heads to the ISS on November 23. She will be the sole radio amateur on orbit until next March. That's when Cosmonauts Gennady Padalka, RN3DT, and Mikhail Kornienko, RN3BF -- both space veterans -- will arrive. A key research focus during Expedition 41 was human health management for long-duration space travel, as NASA and

Roscosmos prepare for Kornienko and NASA Astronaut Scott Kelly to remain aboard the ISS for 1 year.

Several call signs are available for use on the ISS. NASA astronauts use NA1SS, while Russian cosmonauts operate under RS0ISS. Other call signs include DP0ISS, OR4ISS, and IR0ISS, available for use by European Space Agency astronauts. UK telecoms regulator Ofcom recently issued the call sign GB1SS for assignment to UK space travelers while aboard the ISS.

NASA Astronaut Kjell Lindgren, KO5MOS, and Japan Aerospace Exploration Agency (JAXA) Astronaut Kimiya Yui, KG5BPH, will head to the ISS next May. Astronauts Tim Kopra, KE5UDN, and Tim Peake, KG5BVI, will be part of a crew increment heading into space a year from now. Peake, who is from the UK, may use the GB1SS call sign.

British pop singer [Sarah Brightman](#) is currently scheduled to travel to the ISS in October 2015 for a 10-day visit as a fare-paying "spaceflight participant." Her website has adopted an otherworldly theme. While it is not known if she will participate in any Amateur Radio contacts during her short ISS stay, she apparently would be eligible to do so using GB1SS.

ARRL has [announced](#) that the deadline is December 15 for schools and educational institutions and organizations -- formal and informal -- to submit [proposals](#) to host an Amateur Radio contact with an ISS crew member. ARISS is es-



Sarah Brightman undergoes medical tests in Russia. [Photo courtesy of AMSAT-UK]

pecially interested in arranging contact events that will draw large numbers of participants and integrate the radio contact into a well-developed educational plan. ARISS anticipates that the ham radio contacts between students and the space station will take place between May 1 and December 31, 2015. The ARRL website has [more information](#).

[Contact](#) ARISS with any questions or for additional information.

NASA has posted [more information](#) on the International Space Station and its crews.

AMSAT Celebrates 40 Years in Space for AO-7

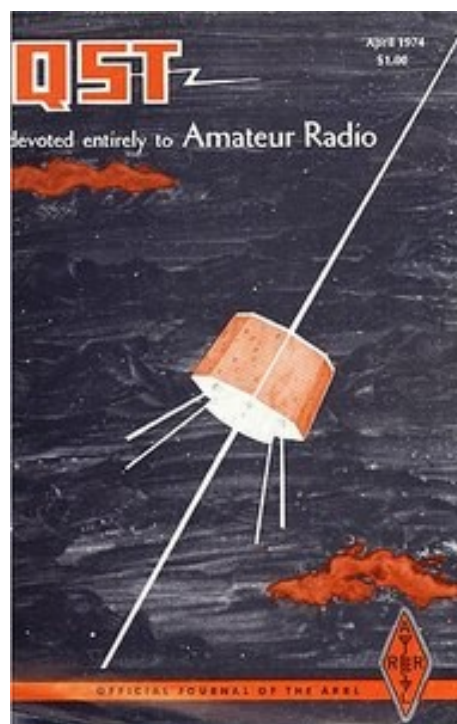
Saturday, November 15, will mark 40 years since the AMSAT-OSCAR 7 ([AO-7](#)) ham radio satellite went into space from Vandenberg Air Force Base in California. Special Event W7O will be on the air November 15-24 to commemorate the launch of AO-7, the oldest working Amateur Radio satellite. Satellite aficionado Patrick Stoddard, WD9EWK/VA7EWK, who secured W7O for the occasion, plans to work satellite passes during the special event from Arizona, including AO-7 passes. He also hopes to recruit other operators to participate in the celebration from other locations and on other bands, including HF.

AO-7 was the second so-called "Phase 2" Amateur Radio satellite that AMSAT-NA constructed and launched into low-Earth orbit. It remained in operation until a short circuit occurred in a battery in 1981. More than 20 years later, however, AO-7 unexpectedly returned to life, its 2 meter beacon showing up on 145.9775 MHz. AMSAT describes the Mode A/B bird as "semi-operational" and dependent upon its solar panels for a reliable power source; AO-7 works only as long as its solar panels are illuminated by sunlight. Satellite experts speculate that AO-7's resurrection occurred when the short circuit in the battery opened, allowing the solar cells to power the spacecraft. When the satellite goes into eclipse, it powers down. Since the satellite returned to the outerworld of the living, terrestrial users have enjoyed numerous contacts via AO-7.

According to its [operating plan](#), AO-7 switches to Mode B (70 centimeters up/2 meters down) at 0000 UTC. AO-7 has beacons on 29.502 MHz (used in conjunction with Mode A) and, nominally, on 145.972 MHz (used in conjunction with Mode B and Mode C -- low power Mode B). The 435.100 MHz beacon has an intermittent problem, switching between 400 mW and 10 mW.

Stoddard said he would publish a schedule through a link on his WD9EWK [QRZ.com](#) entry. [Contact](#) Stoddard for more information.

AMSAT has [posted](#) a series of photos documenting the early OSCAR years, including AO-7. Read [more](#). -- *Thanks to AMSAT-NA, AMSAT News Service*



AO-7 made the cover of the April 1974 issue of QST.

A Century of Amateur Radio and the ARRL

After many years of political unrest in Myanmar that resulted in the banning of Amateur Radio, the country formerly known as Burma starting cracking the door open to hams in 1994. Following 3 years of negotiations with Myanmar officials and two small-scale DXpeditions to that country, Martti Laine, OH2BH, obtained permission for a large-scale DXpedition that would demonstrate the value of ham radio to the government. A multinational ham team operating as XZ1A made many thousands of contacts and even operated in the CQ World Wide DX SSB contest. The article, "DXing from the Golden Land," published in the March 1996 issue of QST, told the fascinating story.

For many years, interest in 10 GHz operation had been building, spurred on by the ARRL's 10 GHz contests. By the mid 1990s, many hams were heading to the mountaintops with their small dishes to operate at 10 GHz.

Coastal hams with pleasure boats would often go offshore to operate from the rarer grids, but sometimes they would have to suspend operation, when seas became high enough to make dish-pointing from their bouncing boats almost impossible.

Gate 1 of the long-awaited vanity call sign program finally opened on May 31, 1996, after many delays -- including a total federal government shutdown at the beginning of that year, because Congress could not pass a budget. Gate 1 accepted applications from former holders of expired and unused call signs and from hams asking for the call signs once held by now-deceased relatives. Gate 2 opened on September 23, 1996, for Amateur Extra class licensees to apply.

An interesting juxtaposition of two "the old and the new" articles appeared in the September 1996 issue of *QST*. The first was an article explaining how the then-new Global Positioning System (GPS) works. The next article looked far into ham radio's past as it attempted to



On display at [ARRL Headquarters](#) today, the Wouff Hong is a constant reminder to Amateur Radio operators to be mindful of their operating etiquette.

explain the inexplicable mysteries of the Wouff-Hong and the Rettysnitch. The Wouff Hong and Rettysnitch were fictional tools that sprang from the imagination of "The Old Man" (Hiram Percy Maxim), to be used for punishing Amateur Radio operators who demonstrate poor operating practices.

human exposure to RF fields, creating a mountain of uncertainty and concern in the Amateur Radio community." The "Happenings" column in that issue provided more details. An article in the January 1997 issue of *QST* further explained how the new rules would affect hams. -- *Al Brogdon, W1AB*

As the "It Seems to Us" editorial related in the October 1996 issue of *QST*, "August was ushered in by a sudden announcement of rewritten FCC rules governing

The ARES E-Letter for November 19, 2014

SET 2014 Success Stories

Idaho SET Sees Upswing in Participation for 2014



Michael Meier, WB7RBH, is Idaho's Section Emergency Coordinator and Public Information Coordinator, and is always looking for ways to get more of the state's amateur community involved with public service communications, including the annual Simulated Emergency Test (SET). Meier's ARES organization plans for and participates in the SET, and tries to tailor their operation for the state's diverse geography, including mountains and plains. For the past three years, they've concentrated on message handling and the use of recognized message formats, while tracking depth and breadth of statewide participation by message totals and origins. After-Action Reports helped identify strengths and weaknesses.

This year, however, was different, reported Meier. "One of the counties (Latah) was planning a county wide exercise, which involved 24 hours of operation and testing of almost all modes including voice, digital, and cw. Bill Ward, K9GRZ, the planner of this operation, wanted to know if Meier could help him recruit other counties to give them more check-ins to lend more realism. So, SEC Meier started a campaign to get the word out via numerous outlets, including the state's ARES website www.idahoares.info, and also through email, club notifications, and posted news.

The SET plan developed legs, and interest grew rapidly. Planners put a net control in a tent out in the wilderness, running nominal transmitter power, portable antennas, and purposefully less-than-ideal operating conditions. "We wanted to simulate conditions realistically to hopefully see what would happen in the real world," said Meier. Stations in several counties were set up at the local EOCs, while others teamed up and "went portable" like a Field Day operation.

Starting on October 11, per a previously agreed upon protocol, stations employed HF SSB for the first 20 minutes of each hour, then digital PSK31 for the next 20 minutes, and finally cw for the last 20 minutes. Stations working all three modes were kept very busy, with the operation continuing non-stop for 24 straight hours. Local ARES groups and nets were also encouraged to take VHF-UHF check-ins and relay those stations into the larger operation. Net frequencies and bands were changed smoothly on the fly as propagation and conditions dictated.

When all activity and messages were tallied, Idaho had 1400 check-ins to the SET in 24 hours. On HF, 619 SSB contacts were noted from 24 Idaho counties and eight other states, with 88 individual stations participating. There were 219 cw contacts made from all six Idaho ARES Districts, eight other states and by 24 individual stations. PSK31 was popular, with 127 contacts made from 12 counties, five other states, and 31 individual stations. On VHF, 424 contacts were made by 96 stations.

An overall total of 1389 contacts were made by 239 stations. According to Meier, some 5.3% of Idaho Amateur Radio operators participated, "which is outstanding," he said. "I am so inspired by our Idaho Amateur Radio operators and ARES," Meier concluded. "All of our ARES operators stepped up and conducted a fantastic SET 2014; this one is going to be hard to beat."

ARRL Partners: Safety Tips from Red Cross

Bitter cold temperatures and snow are hitting two-thirds of the country, exposing people to dangerously frigid weather and causing home heating systems to work overtime to keep everyone warm. The American Red Cross is urging people to use caution when heating their homes in these cold conditions and offers way to stay safe during the deep freeze.

HOME FIRE SAFETY -- Seven times a day, someone in this country dies in a home fire. Heating fires are the second leading cause of these fires which occur more often as cold weather sets in and people turn on their heating system. The Red Cross has launched a [nationwide campaign](#) to reduce the number of home fire deaths and injuries by 25 percent over the next five years

Heating a home can be expensive. Almost half of the families in the United States use alternate heating sources such as space heaters, fireplaces, or coal or wood stoves to cut costs while staying warm. These supplemental heating sources can be dangerous if not used properly. The Red Cross offers the following safety tips on how to prevent heating fires:

- Keep all potential sources of fuel like paper, clothing, bedding, curtains or rugs at least three feet away from space heaters, stoves, or fireplaces.
- Don't leave portable heaters and fireplaces unattended. Turn off space heaters and make sure any embers in the fireplace are extinguished before going to bed or leaving home.
- Place space heaters on a level, hard and nonflammable surface (such as ceramic tile floor), not on rugs or carpets or near bedding or drapes. Keep children and pets away from space heaters.
- When buying a space heater, look for models that shut off automatically if the heater falls over.
- Never use a cooking range or oven to heat your home.
- Use a glass or metal fire screen to keep your fire in your fireplace. Make sure it's large enough to catch sparks and rolling logs.
- Have wood and coal stoves, fireplaces, chimneys, and furnaces professionally inspected and cleaned once a year.

WINTER STORM SAFETY -- Wear layers of lightweight clothing to stay warm during cold weather, as well as gloves and hat. Other safety steps include the following:

- Bring pets indoors. If that's not possible, make sure they have enough shelter to keep them warm and that they can get to unfrozen water.
- If you lose power, go to a designated public shelter to stay warm.

- Avoid driving in sleet, freezing rain, snow or dense fog. If you have to travel, keep a disaster supplies kit in the car.
- Check on your elderly neighbors. Help those who may need special assistance, including people with disabilities and children.
- Before tackling strenuous tasks such as shoveling snow, consider your physical condition.
- Know the signs of hypothermia - confusion, dizziness, exhaustion and severe shivering. If someone has these symptoms, they should get immediate medical attention.
- Watch for symptoms of frostbite including numbness, flushed gray, white, blue or yellow skin discoloration, numbness or waxy feeling skin. -- *American Red Cross*

The ARRL Letter for November 20, 2014

Homeland Security's 2014 National Emergency Communications Plan Incorporates Amateur Radio

The US Department of Homeland Security's 2014 *National Emergency Communications Plan* ([NECP](#)) has incorporated Amateur Radio in its mix of media that could support and sustain communications in a disaster or emergency. The 2014 *NECP* is the first update since the original plan was released in 2008. The *NECP* is "the nation's over-arching strategic plan for enhancing emergency communications capabilities and interoperability nationwide," DHS said in announcing the updated plan on November 12.

"[A]mateur radio operators...can be important conduits for relaying information to response agencies and personnel when other forms of communications have failed or have been disrupted," the *NECP* states.

The *NECP* also describes changes that lie ahead for emergency communication systems, such as 9-1-1 systems. "In the future, Next Generation 9-1-1 will enhance the capabilities of current 9-1-1 networks, allowing the public to transmit pictures, videos, and text messages that will provide additional situational awareness to dispatchers and emergency responders," the *NECP* says.

The updated *NECP* stresses the importance of interoperability. It recommends that state, regional, and local administrations "assess their existing governance structures to ensure they are positioned to address current and emerging policy, technology, and planning developments." This effort, the *NECP* continues, could include the addition of representatives from the Amateur Radio community to statewide interoperability governing bodies and executive committees.

The *NECP* also recommends that federal, state, local, tribal, and territorial jurisdictions "identify domestic and international entities with potential roles in information sharing and the delivery of emergency communications during emergencies," such as Amateur Radio operators. "As appropriate, these entities should be incorporated into training and exercise activities on a more regular basis," the *NECP* suggests.

The Federal Emergency Management Agency (FEMA) -- a part of the Department of Homeland Security -- is headed by ARRL member, W. Craig Fugate, KK4INZ.

"Frequency" TV Series Would Reprise Amateur Radio-Themed Movie

Mike Baxter, KA0XTT -- Tim Allen's character in the "Last Man Standing" TV show on ABC -- may be getting some competition on the ham bands, as NBC appears poised to launch a television series based on the 2000 movie [Frequency](#), in which ham radio -- aided by some spectacular solar phenomena -- plays a central role in the sci-fi thriller.

According to a November 13 [article](#) in *The Hollywood Reporter*, NBC has already committed to the series. Jeremy Carver is writing the script for Warner Brothers Television and will be the series' executive producer. Toby Emmerich, who wrote the movie, will be a co-producer.

While Amateur Radio has made only fleeting appearances in "Last Man Standing," it is an essential plot device in *Frequency*. In the movie, a New York City fireman, Frank Sullivan, played by Dennis Quaid, re-connects via a bizarre ham radio link with his son, John, 30 years in the future. Jim Caviezel, now a star in the CBS drama, "Person of Interest," portrayed John Sullivan, an NYPD detective.

John Sullivan comes across his late father's 1960's-era Heathkit transceiver, through which -- with the help of a quirk of nature and some Hollywood magic -- he is able to communicate with his father through time and space. Read [more](#). -- Thanks to John Bigley, N7UR, Nevada Amateur Radio Newswire



Jim Caviezel played NYPD detective John Sullivan in the 2000 *Frequency* movie. [New Line Cinema]



A Century of Amateur Radio and the ARRL

In January 1997 a high-tech, massive, expensive, and very successful DXpedition was mounted to operate as VK0IR from Heard Island in the Antarctic. The 20-man crew, led by KK6EK and ON6TT, made a remarkable 80,673 contacts! The VK0IR story was told in detail in the September 1997 issue of *QST*.

The ARRL Board of Directors designated 1997 as Amateur Radio's Year of Public Service, with two aims. One was to publicize ham radio's major role in public service over its many decades of existence. The other was a large public relations effort to tell non-hams about ham radio.

The Phase 3D amateur satellite had been in the works for some time and was nearing its launch date. A five-part series of *QST* articles in 1996 and 1997 described the bird and how hams could use it.



The Phase 3D satellite during construction.

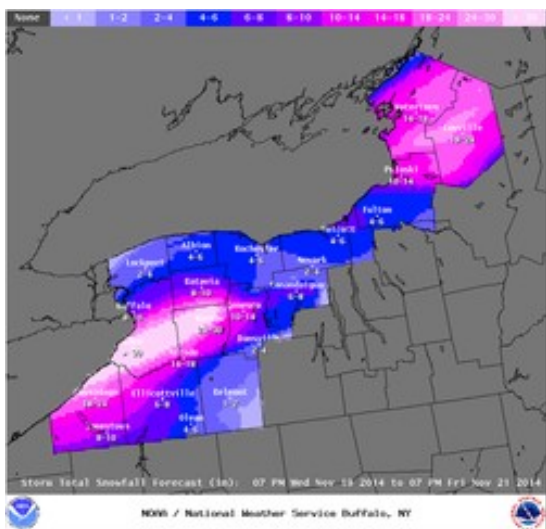
As told in the June 1997 issue of *QST*, for his Eagle Scout public service project, Brian, KC4LLD, volunteered to build the Phase 3D shipping container. The project eventually required the help of 21 other Scouts to complete.

On August 6, 1997, Gate 3 of the vanity call sign program was opened, with about 1500 immediate applicants.

During 1997, Congress considered the wording of a bill to make it illegal to listen in on cellular telephone signals and to market equipment that covered cellular service frequencies. The ARRL put forth a successful effort to be sure that radio amateurs would not be affected by the bill.

The ARRL Letter for December 4, 2014 Mammoth New York Snowfall Put Amateur Radio Volunteers on Alert

Amateur Radio Emergency Service (ARES) and Radio Amateur Civil Emergency Service (RACES) volunteers activated a net and went on alert in mid-November, even as they and their neighbors were digging out from several days of unprecedented snowfall in New York's Niagara Frontier. The severe weather in the Buffalo area was blamed for at least a dozen deaths.



A National Weather Service map indicates predicted snowfall amounts between November 19 and 21. [NWS graphic]

Western New York Section Emergency Coordinator Joe Tedesco, KC2DKP, said [SKYWARN](#) nets were very active over the course of two snowfall events during the week of November 17, and Amateur Radio was credited with relaying reports to the National Weather Service. Tedesco, who is also Assistant Erie County RACES Officer and a Military Auxiliary Radio Service (MARS) member, said he lives in a direct line from Lake Erie, where most lake-effect snow bands get started.

"Although we always do see heavy snows, I have never seen anything close to the amount we saw yesterday," Tedesco said on November 19. His area received some 4 feet of snow.

According to Weather.com, Wales Center, New York, recorded the highest combined snowfall, with 85 inches on the ground. No communication issues resulted from the weather emergency, Tedesco said. The heavy snow did cause roof collapses, however, and emergency crews faced challenges when responding to calls over largely impassable roads and highways.



Japanese Satellites Carrying Amateur Radio Payloads are Launched into Deep Space

This week, Japan successfully launched its [Hayabusa 2](#) asteroid sample-return mission into deep space, and with it, two satellites carrying Amateur Radio payloads. A Japan Aerospace Exploration

Agency ([JAXA](#)) rocket lifted off on schedule early on December 3 (UTC), carrying the Hayabusa 2 spacecraft on the first leg of its journey to Asteroid 1999 JU3. Along for the ride into deep space are two Amateur Radio satellites, [Shin'en 2](#) (Abyss 2) and [ARTSAT2: DESPATCH](#). The launch had been postponed twice owing to unfavorable weather conditions. Shin'en 2 will identify as JG6YIG, while ARTSAT2:DESPATCH will use the call sign JQ1ZNN.

Shin'en2 carries a 0.1 W CW beacon on 437.505 MHz and telemetry on 437.385 MHz (0.8 W) using a [mode](#) similar to *WSJT*. It will also carry a F1D digital store-and-forward transponder with an uplink of 145.942 MHz and a downlink at 435.270 MHz (0.4 W), but *not* the Amateur Radio Mode J linear transponder announced earlier. The [data format](#) is posted on the Kagoshima University website.



The Hayabusa 2 launch from Japan on December 3. [JAXA photo]

A linear SSB/CW transponder had been part of the initial design, but, according to Hideo Kambayashi, JH3XCU, that had to be abandoned because of regulatory issues. The digital transponder will offer earthbound hams an opportunity to test the limits of their communication capabilities, however. The project also is hoping to gather listener reports.

ARTSAT2:DESPATCH carries a 7 W CW transmitter on 437.325 MHz. Onboard will be the first sculpture ever to be carried into deep space. The ARTSAT2: DESPATCH mission is seeking "exceptionally skilled ham operators" as part of its "[cooperative diversity communication](#)" experiment. This effort will attempt to intercept signals from the spacecraft not only at the ground station in Tokyo, but at Amateur Radio stations around the world, "in order to reconstruct the original data from the spacecraft."

"Reception of such weak signals to reconstruct data from the spacecraft will require the expertise of exceptionally skilled ham operators," the satellite's developers explained.

The two spacecraft will have an elliptical orbit around the Sun and travel to a deep space orbit between Venus and Mars. With an orbital inclination of nearly zero, the spacecraft should stay in Earth's equatorial plane. The distance from the Sun will be between approximately 6.5 million and 12 million miles.

SpinSat Now in Orbit

The US Naval Research Laboratory [SpinSat](#) satellite was successfully deployed from the International Space Station on November 28. SpinSat arrived at the ISS on September 21 via the [SpaceX Falcon 9](#) resupply vehicle. For the next few days, SpinSat's orbit will approximate that of the ISS. The ISS real-time tracker on the [ISS Fan Club](#) website can show when the spacecraft are within range.

The 125-pound SpinSat, a 22-inch diameter sphere, carries a 2 W 9600 bps AX.25 packet radio store-and-forward system on 437.230 MHz. The satellite's primary mission is to demonstrate a new micro-thruster technology, from which SpinSat derives its name; its 12 electronically controlled solid-propellant thrusters will be fired in pairs to spin the spacecraft.

Equipped only with primary batteries and just 4.8 grams of fuel, the satellite's working phase is expected to last up to 6 months. -- *Thanks to AMSAT, AMSAT-UK, Southgate Amateur Radio News*



SpinSat just before deployment into orbit from the International Space Station. [NASA image]

A Century of Amateur Radio and the ARRL

By 1998, hams were communicating via the new OSCAR 27 satellite using hand-held transceivers and whip antennas.

In early 1998, the FCC inaugurated its new Universal Licensing System (ULS). The Commission also required ham radio applicants to use a new Form 610, on which they had to certify that they had read and would comply with the new RF safety rules. The ARRL continued efforts to protect against any possible reallocation of Amateur Radio spectrum.

On September 1, 1998, the ARRL launched a members-only section of its website, which provided many features of interest to amateurs. *The ARRL Letter*, previously available only via the ARRL website, was thereafter e-mailed directly to subscribing members. By April 27, 1999, some 50,000 members had signed up to access members-only content.

In the late 1990s, the FCC launched a new era in Amateur Radio enforcement. The persistent efforts of the ARRL and recent FCC administrative and staff changes led to the revived enforcement. On January 13, 1999 -- in an unusual move -- Riley Hollingsworth, K4ZDH, special counsel in the FCC Enforcement Bureau, broke in on a 75 meter contact that had degenerated into a nasty confrontation. He got the participants settled down and then stayed on frequency to make a few remarks about enforcement.

Palestine was added to the *DXCC List*, effective February 1, 1999. Later that month a multinational group of DXers operated from Gaza as E44DX, making more than 33,000 contacts and giving thousands a new DXCC entity. -- *Al Brogdon, W1AB*



Questions for General Class License

1. (G1A01) On which of the following bands is a General Class license holder granted all amateur frequency privileges?
 - A. 60, 20, 17, and 12 meters
 - B. 160, 80, 40, and 10 meters
 - C. 160, 60, 30, 17, 12, and 10 meters
 - D. 160, 30, 17, 15, 12, and 10 meters
2. (G2A01) Which sideband is most commonly used for voice communications on frequencies of 14 MHz or higher?
 - A. Upper sideband
 - B. Lower sideband
 - C. Vestigial sideband
 - D. Double sideband
3. (G3A01) What is the sunspot number?
 - A. A measure of solar activity based on counting sunspots and sunspot groups
 - B. A 3 digit identifier which is used to track individual sunspots
 - C. A measure of the radio flux from the Sun measured at 10.7 cm
 - D. A measure of the sunspot count based on radio flux measurements
4. (G4A06) What type of device is often used to enable matching the transmitter output to an impedance other than 50 ohms?
 - A. Balanced modulator
 - B. SWR Bridge
 - C. Antenna coupler
 - D. Q Multiplier
5. (G5A02) What is reactance?
 - A. Opposition to the flow of direct current caused by resistance
 - B. Opposition to the flow of alternating current caused by capacitance or inductance
 - C. A property of ideal resistors in AC circuits
 - D. A large spark produced at switch contacts when an inductor is de-energized
6. (G6A03) Which of the following is an advantage of ceramic capacitors as compared to other types of capacitors?
 - A. Tight tolerance
 - B. High stability
 - C. High capacitance for given volume
 - D. Comparatively low cost
7. (G7A03) What is the peak-inverse-voltage across the rectifiers in a full-wave bridge power supply?
 - A. One-quarter the normal output voltage of the power supply
 - B. Half the normal output voltage of the power supply
 - C. Double the normal peak output voltage of the power supply
 - D. Equal to the normal peak output voltage of the power supply
8. (G8A10) What is meant by flat-topping of a single-sideband phone transmission?
 - A. Signal distortion caused by insufficient collector current
 - B. The transmitter's automatic level control is properly adjusted
 - C. Signal distortion caused by excessive drive
 - D. The transmitter's carrier is properly suppressed
9. (G9C03) Which statement about a three-element, single-band Yagi antenna is true?
 - A. The reflector is normally the shortest parasitic element
 - B. The director is normally the shortest parasitic element
 - C. The driven element is the longest parasitic element
 - D. Low feed-point impedance increases bandwidth
10. (G0A02) Which of the following properties is important in estimating whether an RF signal exceeds the maximum permissible exposure (MPE)?
 - A. Its duty cycle
 - B. Its frequency
 - C. Its power density
 - D. All of these choices are correct

(For answers to test questions see page 16)

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Merry Christmas and Happy New Year



Answers to questions on page 15: 1-C, 2-A, 3-A, 4-C, 5-B, 6-D, 7-D, 8-C 9-B, 10-D