

January QSP



January Test Session

The January 10th Test session was one of those unusual sessions where we had NO Candidates for the test session. Since the CKARC Board meeting “ran over” on time, it may not have been a bad thing overall. This was the First Board meeting for the 2018 Officers.

Special points of interest:

- January Testing Session
- December Minutes
- Quantum Radio
- K3LP SK
- Thomas Fire Response
- NCVEC: New Tech Question Pool
- ZS8Z Off the Air

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Reminders

Siren Test scheduled for **February 5th**. In the event the weather does not cooperate, we will try again the following Monday!

February Test Session

is on February **14th** at 7:00 PM at the Saline County Sheriff’s Office Classroom. Board Meeting at 6:30 PM, on the 14th. The February CKARC meeting is

scheduled for the 23rd of February at **7:30 PM** at KWU’s Peters Science Hall in Room 211.

CKARC Minutes for December 2017

The Central Kansas Amateur Radio Club met at Russell's Restaurant on Friday, December 8th, 2017 at 6:30 pm. President Dennis Kelley, KAØLTQ, called the meeting to order. No reports were given.

Old Business:

Officers were sworn in by Ron Trembley, WAØPSF.

The Joe Addison award for 2017 was presented to Sid Ashen-Brenner, NØOBM.

New Business:

Tom Blackshere, NØMOK, would like someone to help assist in organizing Hamfest.

Siren Test Nets



These are "routinely" held on the First Monday of every Month—**Except September** - provided that the Weather is in a cooperative mood. If there are too many clouds in the sky, or if it happens to be too Cold (Winter in Kansas can be Very cold) Less than +32 Degrees, the Test will usually be postponed until the following week.

In the event that the Weather still is not in a cooperative mood on the 2nd Monday, the test will be Cancelled for the Month.

Those folks that do check in, we would like the following information: Your Call Sign (obviously), your current location (street intersections are good enough) and if you heard

a Siren (or more than one). This helps cut down on the number of folks that the Emergency Management Office has to call to see if the Sirens went off or not.

Our help on this event **IS** Greatly appreciated!

All of the New Sirens Have been Installed at this time.

“Quantum Radio” May Offer New Twist on Communicating in Problematic Environments

01/05/2018

Researchers at the National Institute of Standards and Technology (**NIST**) have demonstrated that quantum physics might enable communication and mapping in locations where GPS, cell phones, and radio is not reliable or don't work at all, such as indoors, in urban canyons, underwater, and underground. NIST **announced** the technology advance on January 2. The technology may have marine, military, and surveying applications. The NIST team is experimenting with very low frequency (VLF) digitally modulated magnetic signals, which propagate farther through buildings, water, and soil than conventional electromagnetic signals at higher frequencies.

“The big issues with very low-frequency communications, including magnetic radio, are poor receiver sensitivity and extremely limited bandwidth of existing transmitters and receivers. This means the data rate is zilch,” said NIST project leader Dave Howe, ADØMR.

“The best magnetic field sensitivity is obtained using quantum sensors. The increased sensitivity leads in principle to better range. The quantum approach also offers the possibility to get high-bandwidth communications like a cellphone has. We need bandwidth to communicate with audio underwater and in other forbidding environments,” he said.

NIST researchers have demonstrated detection of digitally modulated magnetic signals by a magnetic-field sensor that relies on the quantum properties of rubidium atoms. The NIST technique varies magnetic fields to modulate or control the frequency — specifically, the horizontal and vertical positions of the signal's waveform — produced by the atoms.

NIST developed a direct current magnetometer that uses polarized light as a detector to measure the “spin” of rubidium atoms in a tiny glass cell induced by magnetic fields. Changes in the atoms' spin rate correspond to an oscillation in the dc magnetic fields, creating alternating current voltages at the light detector that are more useful for communications.

“Atoms offer very fast response plus very high sensitivity,” Howe said. “Classical communications involves a tradeoff between bandwidth and sensitivity. We can now get both with quantum sensors.” Howe speculated on an Amateur Radio application.

“The quantum radio is great fun, far better sensitivity than any other receiver, at room temperature, anyway,” Howe told ARRL. “The atoms in the gas cell replace the ‘antenna’ and detection in the classical sense. It would be nice to try modulation in the 2200-meter band using the quantum receiver for detection.” In the future, the NIST team plans to develop improved transmitters.

In the NIST tests, the sensor detected digitally modulated magnetic field signals with strengths of 1 picotesla — one millionth of Earth's magnetic field strength — and at frequencies below 1 kHz.

To further improve performance, the NIST team is building and testing a custom quantum magnetometer. Like an atomic clock, the device will detect signals by switching between atoms' internal energy levels as well as other properties, Howe said. The researchers hope to extend the range of low-frequency magnetic field signals by boosting the sensor sensitivity, suppressing noise more effectively, and increasing and efficiently using the sensor's bandwidth.

The NIST strategy requires inventing an entirely new field, which combines quantum physics and low-frequency magnetic radio, Howe said.

DXpedition Leader, Elite Contester, Ham Radio Mentor David Collingham, K3LP, SK

01/07/2018

Well-known DXpedition leader and contester David Collingham, K3LP, of Mt Airy, Maryland, died on January 6 after falling through the ice on a pond near his home the previous evening while trying to rescue his stranded dog. He was 59. Collingham was co-leader, with Paul Ewing, N6PSE, of the 2016 VP8STI/VP8SGI DXpedition to South Sandwich and South Georgia islands, and he was president of the Intrepid-DX Group.

Licensed at age 15 as WN6KTF in his home state of California, Collingham went on to take part in more than 70 DXpeditions and served as leader or co-leader of 14 major DXpeditions. Collingham had several Top 5 finishes in international competitions to his credit. He also had written articles for *QST*, *CQ*, and other publications.

Collingham was a 2014 inductee to the CQ DX Hall of Fame, credited with focusing on using Amateur Radio as an educational tool at home and abroad. With the support of Collingham's long-distance coaching, teacher Bev Matheson, KJ6RSX, a Fontana, California, elementary school teacher, was encouraged to start a ham radio club for 4th and 5th graders at Dorothy Grant Elementary School. A Fontana High School graduate, Collingham provided a complete station for the school. He also promoted and taught Amateur Radio to young people in Iraq, Ethiopia, and Rotuma.

Professionally, Collingham was president and CEO of International Quality Registrars Corporation, a global ISO 9001 certification firm. He was a graduate of University of Maryland University College (MS in operations management), National Louis University (MS in applied behavioral sciences), and DeVry Institute of Technology (AA in electronics technology).

NCJ Editor Scott Wright, KØMD, recalled hearing Collingham speak at a Dayton DX Dinner. "He challenged those in attendance to always think of others, especially DXers who are generally less fortunate," Wright recounted. Collingham noted that he'd left behind some of the ham radio gear he'd brought to a DXpedition or operation to another country as a donation to help keep ham radio going there. Wright said Collingham also challenged those in attendance to help school clubs and start one, and to realize that ham radio would die, were a new generation not mentored and fostered.

Collingham was a member of ARRL, Southwest Ohio DX Association, Potomac Valley Radio Club, and the National Capital DX Association.

"David lived his life bold, courageous, and heroically, and he died trying to save his beloved dog," Ewing wrote in announcing Collingham's death. "He will always be a hero in our hearts."

Thomas Fire Response Also Demonstrates Amateur Radio's Social Media Value

01/05/2018

Santa Barbara Amateur Radio Club (**SBARC**) members kept a close watch on the Thomas Fire after it broke out in early December. Using a variety of the club's analog and digital Amateur Radio assets, radio operators were able to observe fire-fighting efforts first hand and pass along immediate information, often before it was reported by official sources or by local news media. SBARC operates five communication sites in Santa Barbara County, including sites on Diablo Peak on the mostly uninhabited Santa Cruz Island, and on Santa Ynez Peak.

"These two sites host [Automatic Dependent Surveillance-Broadcast] ADS-B receivers that are connected via a combination of amateur microwave IP links and mesh networking and were used to track and monitor airborne firefighting activities," Levi Maaia, K6LCM, co-chair of SBARC's Telecommunications Services Committee, told ARRL.

Starting in mid-December, a round-the-clock emergency net convened on 2-meters, as commercial power for much of Santa Barbara County was cut and the fire descended on residential communities in Santa Barbara County, prompting multiple evacuation orders. With repeaters on generator power and many operators running on battery power, net traffic consisted of official information, including evacuation orders, live reports on the rapidly approaching fire line from operators who remained inside the mandatory evacuation area, related traffic about firefighting efforts, and wind and weather conditions. SBARC volunteers set up an ad hoc remote receiving station to stream live fire ground and air communications audio over the Internet and mesh network.

As fire crews came off duty, one firefighter and Amateur Radio operator joined the net to offer a firsthand account of operations from an insider's perspective. SBARC members also assisted visiting fire crew members with mobile radio antenna repairs in the field.

Maaia said social media proved to be a valuable communication asset, as most official organizations such as incident command and emergency management agencies were disseminating official information via Twitter immediately upon release. "Amateur stations without power, cell phone or Internet access could be kept informed of important information including evacuation orders, via the Amateur Radio net," Maaia explained. "SBARC also served as an aggregator for Thomas Fire-related information by featuring tweets on the club website."

The still-burning Thomas Fire, the largest in modern California history, caused devastating losses in Ventura and Santa Barbara counties. "Although the Santa Barbara ARES group never activated, Amateur Radio proved to be a valuable mode of communication, especially when coupled with social media, amateur mesh networking, IRC chat (over mesh and Internet) and live audio streaming," Maaia said.

In Ventura County, the Thomas Fire damaged or destroyed some Amateur Radio resources normally available to provide emergency communication. It was an Amateur Radio TV camera that caught the first images of the Thomas Fire on December 4. **A fund-raising effort** now is under way to help a repeater system operator to replace gear and to bolster the rest of the system for future such emergencies. Fund-raising sparkplug Ben Kuo, KI6YR, said the fire demonstrated the difficulty of keeping equipment running in remote locations during fire emergencies.

“We also discovered other sites faced serious limitations after utility power was cut and solar panels were obscured by vast clouds of smoke,” Kuo recounted in his solicitation. “This GoFundMe [campaign] will go toward enhancing the existing ham radio repeater network, to make it more reliable in emergencies.” High-quality video cameras for those repeater sites is another possibility.

During the Thomas Fire, Kuo helped bridge the divide between Amateur Radio and social media, and even firefighters would check his feed to see what was going on in other areas of the fire, he said. “It’s a very powerful combination,” Kuo **told** *VC Star*. An ARRL member, Kuo, of Newbury Park, founded the **socaltech news site**. He’s been licensed for 3 years and serves as an ARRL Technical Specialist for the ARRL Santa Barbara Section.

NCVEC Releases New Technician License Question Pool into the Public Domain

01/09/2018

The National Conference of Volunteer Examiner Coordinators (**NCVEC**) has announced the release of the 2018-2022 Amateur Radio **Element 2 Technician class license question pool** into the public domain. Each question pool must be published and made available to the public prior to its use as a question set, from which individual examinations are developed.

Alert the **NCVEC Question Pool Committee** to any necessary corrections or typographical errors.

The new Technician license question pool contains 428 questions. It will become effective for all Technician class license examinations starting on July 1, 2018.

ZS8Z on Marion Island Off the Air, Science Team in Survival Mode

01/08/2018

David Hartzenberg, ZS1BCE, on his second tour at a Marion Island research station as part of the South African National Antarctic Program for more than a year now, reports that he has been off the air as ZS8Z since last November, when generator fuel at the Transvaal Cove base was restricted to essential purposes, and he doesn’t expect to get back on the air before departing in May.

Food also is in short supply, just one functioning generator remains, and the satellite system is down most of the time. “Surviving now is our biggest challenge,” Hartzenberg said.

The *South African Sunday Times* **reported** on January 7 that the Department of Environmental Affairs told the 20+ member science team the government could not afford to send a supply ship, and counseled the researchers to tough it out at emergency quarters.

The situation has led to frayed tempers, the newspaper reported, with one team member turning violent. An Indian relief ship is reported to be on the way with food and fuel.

The newspaper said the Department of Environmental Affairs played down the seriousness of the situation, claiming the reported unhinged team member was “suffering strain,” and that the provisioning calamity was an inventory error that resulted in canned food going out of date. A vessel from South Africa is expected in April for the crew change-over. — *Thanks to Southgate Amateur Radio News via Tom Morgan, ZS1AFS, and to The Daily DX*



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Your issue of QSP is Here!

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**January Meeting is January 26th at 7:30 PM at KWU's Peters Science Hall
in Room 211**
