

February 2016 QSP

Central Kansas Amateur Radio Club



Special points of interest:

- February Testing Session
- January Minutes
- New Extra Question Pool is Out!
- New AO-7 Distance Record

Change IS Constant!

February Test Session

The February Test Session, went well. We had Seven Candidates, Richard Brumfield, KEØHFR, of Clay Center, KS. Upgraded to Extra. As did Dave Every, KD7QAS, also from Clay Center, and Janice Nichols, KEØFEQ, Also from Clay Center. James Steward, KEØDPN, of (gasp) Clay Center, upgraded to General. Tim Garman KEØHRA, of Courtland, is a New Technician as is Mike Solomon, KEØHRB, of Plainville. Stacie Stewart, KCØVBD, of Clay Center, tried for her Extra, but missed it by 2.

VE's in attendance were: Sid, NØOBM, Paul, KS1P, Leon, WAØJFC, Alvin, WØME, and Eric, NØYET.

The FCC since going "paperless" has slowed down somewhat, and now takes almost 2 weeks to process applications. We hope they get back to the former 1 week turnaround soon.

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Reminders

Siren Test scheduled for **March 7th**, provided the Weather cooperates! If not, then we will try again on the 14th.

March Test Session is on **March the 9th** at 7:00 PM at the Saline County Sheriff's Office Classroom.

The March CKARC

meeting is scheduled for the **25th** of Mar. at **7:30 PM** at KWU's Peters Science Hall.

CKARC January 2016 Minutes

The Central Kansas Amateur Radio Club met in Peters Science Hall (Room 211) on Friday January 29th at 7:30 PM.

President Dennis Kelly, KAØLTQ, called the meeting to order. Last month's minutes were approved as printed in QSP.

Reports:

The Treasurer, Pat Giron, reported that the Checking account balance was \$248.00, and no changes in the Savings Account. (Savings account only sends out reports on a Quarterly Basis)

Secretary had nothing further to report.

Testing update from Sid, NØOBM—1 Administrative upgrade in December, and 3 tested in January. Two new Technicians and one Upgraded to Extra!

Announcements:

Sid: Feb 1 Siren Test (IF the Weather cooperates) (it did not)

Paul: We need more VE Team Members. It is an Open Book Test (FREE) anyone General Class of Above is welcome! Club Dues are due by the end of the Month!

Mitch: Putting together a QRP Builder's Group for the Club. A sign nu sheet was passed around. Technician Classes will resume in Sept. through the City Library's "CLASS" Program.

Dennis: Be sure to check out the new club web site www.w0cy.org

Ken: Be aware that "kids" are using the new inexpensive Baofung ht's as scanners, and sometimes show up on our repeater frequencies.

New Business:

Salina Hamfest- August 21, 2016. Much discussion was had, a motion was made and seconded for Tom to reserve Webster Conference Center and too be in charge of organizing the hamfest. Button color was chosen during this discussion (Peach) and Justin Reed was asked to make a K-Link Presentation. Tom will attempt to minimize the number of rooms rented to maximize profitability and will double-check that Sunday IS the preferred Day with the Vendors.

Field Day—June 25-26, 2016 Discussion was had on possible radios to use and to possibly use the Emergency Management's Emcomm Trailer with the limits placed on it by the County's Insurance Company. National Guard may also be contacted about the possible use of a Tent. No Motions or final decisions have been made.

Old Business:

Club Equipment: The Kenwood TS-450 that was damaged by lightning will be parted out. It has 3 (known) damaged chips in it.

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 loca-

tion (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!

New Amateur Extra Question Pool Puts Greater Emphasis on Digital, SDRs, Propagation

02/17/2016

The new Amateur Extra class license examination question pool, effective from July 1, 2016, through June 30, 2020, now is available at the National Conference of Volunteer Coordinators (**NCVEC**) website. The latest revision contains a few minor corrections that had been released in a February 5 errata of the initial January 8 release. NCVEC Question Pool Committee Chair Rol Anders, K3RA, said the new pool represents a fairly significant change relative to the current question pool, which expires on June 30.

"The primary change is modernization of the pool to place more emphasis on digital communications, digital test equipment, software defined radios, and propagation/space weather," he said. "Also, a number of other topics were added, including questions on some additional antenna types commonly used by radio amateurs." Anders said that room to cover the new topics was made in the question pool by dropping some questions that had been in the expiring pool.

"Many of the questions removed were on topics which were felt to be of less importance to the current amateur population," he said. "However, there was also some 'evening out' of difficulty in the removal of a number of questions felt to be inappropriately easy or difficult relative to the rest of the pool." As a result, he said, the net number of questions grew from 700 to 712 questions. All questions in the expiring pool were re-evaluated for possible clarification or improvement, and approximately 60 questions were slightly modified.

"All in all, the Question Pool Committee has worked to keep the Amateur Extra class exam up to date, to provide a high-quality examination, and to ensure that the incoming Extra class amateurs are well-qualified to be leaders in the hobby," Anders said.

CQ Adds new DX Marathon Plaques

02/18/2016

CQ magazine says it has added some new **DX Marathon** plaques, and that interest in the award program is growing, as demonstrated by a significant increase in log submissions — up 29 percent in 2015 over 2014 — with a large part in the CW-only category. Consequently plaques for the highest North American CW score and highest European CW score have been added. Previously these were certificates.

The CQ DX Marathon is a year-long activity, with a new event each calendar year, starting on January 1.

A **complete list** of DX Marathon plaques is on the DX Marathon website. An anonymous donor is funding these plaques, and other sponsorships are available.

For more information, contact john@dxmarathon.com. — *Thanks to The Daily DX*

Arkansas VHFer Claims “Mathematically Impossible” AO-7 Mode B Distance Record

02/17/2016

Dave Swanson, KG5CCI, of Arkansas has achieved another distance milestone on the venerable AO-7 satellite using Mode B (70 centimeters up/2 meters down).

On February 10, Swanson, on Shinnal Mountain west of Little Rock (EM34st), completed a scheduled contact with Eduardo Erlemann, PY2RN (GG66lw), a calculated distance of 8030.895 kilometers (approximately 4979.2 miles), which Swanson said was “way beyond the theoretical range AO-7” and a feat that “the math said shouldn’t be possible.”

The tricky part was that, given their respective locations in the Northern and Southern hemispheres, the window allowing both to access the satellite at the same time was on the order of 5 seconds. After several attempts, they agreed to use quick call sign/grid square reports.

“At 2009 UTC, both stations clearly heard the other’s call and grid, completing the contact,” Swanson said. “It was extremely rapid and very weak, but clear...I think this is approaching the limits of what can be done on AO-7.” PY2RN has **posted** his side of the contact, which Swanson called “by far the hardest sked I’ve ever attempted.”

AMSAT Seeks Volunteers to Support Phase 4 “Five and Dime” Ground Terminal Effort

02/19/2016

Established less than 1 year ago, AMSAT’s all-volunteer **Phase 4 Ground Terminal** team has made significant strides in developing an ensemble of solutions to support the so-called “Five and Dime” (5 GHz and 10 GHz) strategy AMSAT has embraced for microwave satellite projects. Prompting the effort is the planned launch of a geosynchronous military satellite in the 2018 timeframe, which could play host to an Amateur Radio payload operating on the two microwave band. The overarching project, which also includes a complementary Phase 4 Space team, is exploring new territory and innovative solutions, and it’s seeking **volunteers** from among the technically savvy within the Amateur Radio community.

“We’re going to make it as awesome as possible,” Ground Station team lead Michelle Thompson, W5NYV, told ARRL. The project not only would support the Phase 4B geosynchronous launch but provide solutions for the Phase 3E high-Earth orbit satellite, and receiver support for AMSAT’s entry into the NASA Cube Quest Challenge, which would go to the moon.

Thompson said the compelling technical reason for using 5 GHz and 10 GHz is the ability to use high-bandwidth modes on those bands. In addition, “the 5 and 10 GHz bands are popular elsewhere, and other projects are embracing this band complement,” she noted. Another advantage would be to raise Amateur Radio’s profile on the two bands and perhaps “shake things up” there for terrestrial use. “The 5 and 10 GHz bands are a compromise that’s working really, really well,” Thompson said.

The US Air Force will control the geosynchronous satellite. Virginia Tech, Millennium Space Systems (**MSS**), FEMA, various clubs as well as AMSAT and ARRL are partners in or are supporting the project. A formal memorandum of understanding is pending.

Cognitive Radios

"We're currently exploring the Amateur Radio implementation of a very advanced and exciting open standard called DVB-S2X for the downlink," Thompson explained, noting it offers a variety of modulation and coding. Earth stations will use their individual radios, transmitting a digital signal — probably something called Offset QPSK (O-PSK) — directly to the satellite, with each getting its own channel in a frequency division, multiple access (FDMA) scheme. "This is an elegant way to design an efficient and advanced communication system and allows technical volunteers to experiment with the basics of cognitive radio — radio that can sense the environment and adapt to take full advantage of the capabilities the hardware offers," she said.

Groundsats and a "Big Honking SDR"

Phase 4 radios will be designed to work not just with the impending geosynchronous satellite but through terrestrial microwave "Groundsats," which, Thompson said, "are essentially satellite simulators that let you test and use the radio terrestrially." Phase 4 radio designs also could be configured to use modulation schemes that are better able to deal with terrestrial multipath.

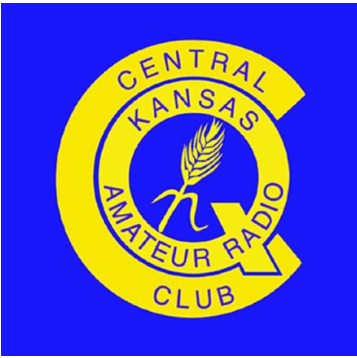
Amateur Radio Access Points (ARAPs) — essentially signal aggregators — would allow legacy radios, FM hand-held transceivers, or emergency traffic providers to use the satellite from any point where an ARAP can be deployed, packaging the input for uplink to the satellite. Hams within ARAP range would be able to use the Five and Dime terrestrial network just as if they were operating through a satellite.

"The Groundsat, which is doing the same job as the satellite payload, has a big honking SDR on it," Thompson said. Groundsat equipment has arrived and is in use in San Diego, North Texas, and at Virginia Tech, and Groundsat development is under way at those sites. A fourth site would be at Morgan State University in Maryland.

Doing It on the Cheap

"Five and Dime" also reflects the project's economics. AMSAT Board Member and Virginia Tech Research Professor Bob McGwier, N4HY, recently explained on the AMSAT-BB that the Ground Team's work is "an effort to design an inexpensive ground terminal for amateurs that would cost tens of thousands of dollars commercially, for as much under \$1000 as we can get it." In contrast to the Space Team's work, which, he said, is taking place "under the cloak of ITAR (International Traffic in Arms Regulations)," the Ground Team's SDR is "completely open source, open specification" and "easily reprogrammed to do many different kinds of missions just by changing the software."

"We welcome any interested technical volunteers to apply to the technical volunteer program at AMSAT and become part of the team," Thompson said. To volunteer for the Phase 4 Ground Team, provide your contact information on AMSAT's Engineering Team **contact form**. Thompson's weekly "Phase4" engineering updates are available via YouTube. Additional **development documentation** is posted on GitHub.



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Your issue of QSP is Here!

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We are on the Web

www.w0cy.org

Changes!

Please bear with us as we work out some "New" Bugs!

The Old (November 2009—Windows 7) computer Died on Oct 17th, and has been replaced with a new machine (Was running Windows 8.1, Now on Windows 10!)

Had to "toss" the old Motherboard and the Power Supply—both were beyond Economical Repair.

Time is **Always** an Issue, there never seems to be enough of it!

Sid NØOBM
