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# SIGNALS

Rockwell Collins Amateur Radio Club

Monthly Newsletter of the

Volume 30 Issue 7

Web Site <http://www.w5rok.us>

April 2009

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**RCARC**  
**Membership Meeting**  
 Thursday, 23 April 2009  
 1700 Social      1730 Meeting  
 Rockwell Collins Building 461  
 Temple Conference Room

*Subject: Show and Tell*

## Follow-up Review of the Elecraft K3 on CW

By Steve K6JT

My review of K3 operation in the CW mode a couple months ago showed that while the rig performed very well overall, there were still a couple lingering problems. Primarily with what was described as "ringing" noise at low bandwidths and a less-than-optimal full break-in (QSK) experience.

Bob (K3NT) and I worked with Elecraft to try to isolate the cause of these issues and correct them, as much as was possible. The following contains a synopsis of the conclusions followed by some excerpts of the dialog between us and Elecraft.

The final diagnosis was that the "ringing" is actually band-limited noise that is centered around the CW offset frequency. This was very noticeable at my location due to a high (S5-S6) ambient RF noise floor, making copy difficult, particularly for weak signals. The cause, we concluded, is the very good (i.e., steep cutoff) filtering provided by the K3 (versus my Ten Tec Jupiter, which has narrow filtering but with much wider skirts). Elecraft stated that they plan to provide a future option that will change the filter characteristics to a wider skirt that should help with this issue. It would be a menu-set option. In the meantime, I found that by keeping the sidetone offset at a low frequency (450 Hz or so), the effect of the noise on signals was minimized. It should also be noted that when the filtering is widened out to 1 KHz or higher, the "pink noise" is not noticeable. At 400 Hz it is discernable but acceptable and only becomes very annoying at the 200 Hz and lower DSP filter settings.

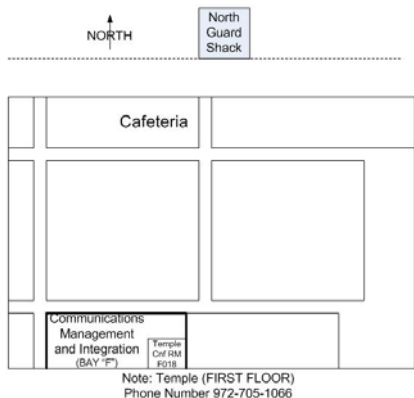
As far as the QSK is concerned, I found that by increasing the sidetone volume, most of my objections were addressed. The QSK worked nearly as well as with the Ten Tec, but of course the band-limited noise problem still made copy between "dits" a little more difficult. For CW traffic handlers, QSK is a must for efficient message transfers, and the K3 performs adequately to address this need.

One other problem with the K3, the operation of the Noise Reduction logic (which helps significantly at my QTH when activated on the Ten Tec) would not work at bandwidths much below 400 Hz on the K3. The algorithm used did not have enough "signal versus noise" to work with at the lower bandwidths, so it would often attenuate the signal along with the noise unacceptably. There is no workaround or solution for this shortcoming, but it should not bother most operators located in lower-noise environments or when using wider receive bandwidths. (Cont on page 4)

## Local Club News

**Meeting Notice** Bring in your latest project for a show & tell. Or something that is broken. The newsletter editor has an HT that was dropped down three flights of stairs. Need help getting something to work for your radio station? Bring that along too and we will try to help find the bug or at least offer helpful suggestions. Come prepared to talk about Field Day too.

**New Meeting Location** We will be meeting in a new location starting with the April meeting. We will be in the Temple conference room. It is located in the CM&I engineering bay at the end of the main aisle leading south from the north gate entrance. The bay entrance is just to the right of where the aisle forms a "T" with the east-west aisle. See the map below.



Note: Temple (FIRST FLOOR)  
Phone Number 972-705-1066

**Club Meeting Talk-In** Each month, on the night of the membership meeting we have a Talk-In on the club repeater. The Talk-In is from 1645 to 1730 hours, prior to the meeting.

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**W5ROK**

461-290

## VE SESSIONS

**Dallas** tests are held 4<sup>th</sup> Sat of each month at 10:00. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD (972) 917-6362

**Irving** tests are held 3<sup>rd</sup> Sat. of each month at 09:00. 5<sup>th</sup> and Main St. Contact Bill Revis, KF5BL 252-8015

**McKinney** VE test sessions are held at the Heard Museum the first Sunday of the month. The address is 1 Nature Place, McKinney TX. The time of the testing is 14:30, ending no later than 16:45. **Note: no tests given on holiday weekends.**

**Garland** testing is held on the fourth Thursday of each month, excluding November, and begins at 1930 sharp. Location is Freeman Heights Baptist Church, 1120 N Garland Ave, Garland (between W Walnut and Buckingham Rd). Enter via the north driveway. A HUGE parking lot is located behind the church. Both the parking lot and the Fellowship Hall are located on the east side of the church building, with big signs by the entrance door. Contact Bill Reynolds, K8DNE, 972-475-3854.

**Plano** testing is on the third Saturday of each month, 1300 hrs at Williams High School, 1717 17<sup>th</sup> St. East Plano. Check Repeater 147.180+ for announcements.

**Greenville** testing is on the Saturday after 3<sup>rd</sup> Thursday, 1000 hrs at site TBA, contact N5KA, 903.364.5306. Sponsor is Sabine Valley ARA. Repeater 146.780(-) with 118.8 tone.

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## President's Message

### The Amateur's Code

The Radio Amateur is

CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED...radio is an avocation, never interfering with duties owed to family, job, school or community.

PATRIOTIC...station and skill always ready for service to country and community.

*--The original Amateur's Code was written by Paul M. Segal, W9EEA, in 1928. (Above information via ARRL)*

It has not been a quiet month since our last RCARC meeting. Chuck Samuel, K7NWM, has been busy taking his turn at testing the club's new Elecraft K3. Bill Swan, K5MWC, has been operating W5ROK on the HF RACES nets. Dennis Cobb, WA8ZBT, reported hearing some activity on our repeater output frequency that he is trying to track down. Jim Pellegrino, KE5SAR, has accepted an offer to help our sister company club at W0CXX. They will be gaining a very knowledgeable and active member. Perhaps Jim will keep in touch with W5ROK via an HF link from W0CXX. Steve Phillips, K6JT, our station trustee,

Reports our club's W5ROK packet BBS has been getting quite a workout. Probably nearly 50 messages passed this month via that route.

Visiting CR Dignitary. RCARC was pleased to have a visit from Mr. Tom Vinson, NY0V, trustee for the Collins Amateur Radio Club, W0CXX, and a member of the Eastern Iowa DX Association, EIDX. Tom's DXpeditions include Tarawa, West Kiribati (operating as T30CXX in 2002 and 2006 and Christmas Island, and East Kiribati, T32CXX, in the Oct 2008 CQWW SSB.

Tom met with a few of our members between his busy work schedule at the Richardson facility. We provided Tom with a short tour of the W5ROK station and swapped a few ideas on possible joint club meetings of our Rockwell Collins Company ARC's.

RCARC still is in need of replacing our treasurer as Jim Gaston, KD5GYD, accepted a new career position. Please contact any of the club officers ASAP if you can fill this position.

The RCARC activity position is also open. How about a club 'built-it' April meeting at RCARC? Bring in your latest radio project for a show & tell. Need help getting something to work for your radio station? Bring that along too and we will try to help find the bug or at least offer helpful suggestions. To make set-up/tear down and attending the meetings a little easier, we will be meeting at a new 1<sup>st</sup> floor location almost in-line and not far from the north gate entrance starting in April. Jim, WB0UNI, will have additional details in this issue.

Two of our members, Forest Cummings, W5LQU, and John Champa, K8OCL, have suggested and are busy working on a possible joint meeting between RWK (Richardson Wireless Club) and RCARC with focus on the K3 transceiver. Let the officers of either club know if you are interested in helping to pull this together.

Steve Phillips, K6JT, has completed his second review of his CW testing of RCARC's Elecraft K3 HF transceiver so be sure to read his interesting report in this issue.

Joe Wolf, N5UIC, has updated the RCARC roster. This is located in the member's only area of <http://w5rok.us/>

RCARC member Mike Schmitt, WA9WCC, has placed his new Elecraft K3 transceiver into service. Mike's main focus is on the digital modes with PSK-31 being his primary operation. If you get a chance, ask Mike about the built in 20 meter vertical antenna that he recently discovered in his apartment. Was not that real kind of those builders to pre-install a HF antenna for operator Mike and his new K3?

VP Ross Terry, K5SRT, continues to improve his mobile station, which consists of HF, VHF, and UHF capabilities. A few weeks ago, Ross stopped by and we were able to work coast to coast from his HF mobile in front of my QTH.

Member Dennis Cobb, WA8ZBT continues being very active on HF in the CW mode with his Elecraft K3 transceiver. Dennis has a new tip for K3 owners involving the dual pass band tuning. Look forward to his sharing this tip at the April meeting.

A volunteer is still required to work on our W5ROK station that has been plagued with wideband noise that is very bad on 80, 40 and 20 meters. This noise is coming from a new energy controller installed for an air handler in the same penthouse where our main HF/VHF/UHF antennas are located. Help is requested in capturing the noise data as viewed on the Yaesu Spectrum display and formatting this information for presentation to the manufacture of the controller for a solution to this RFI.

W5ROK Repeater maintenance still needs volunteers. Our packet BBS issue is priority. RCARC officers have decided not to install the 1.2 Ghz repeater. It was further decided to return this donated equipment as soon as a crew can be arranged.

Finally, thanks and a tip of the hat to our members who send along their monthly radio activities to RCARC. Besides homebrew projects, social gatherings, special event and contest operating, it is important that you indicate your community participation levels of support so that we can include these items in our annual report to the company.

**March RCARC Activities:**

- Vice President Report – Ross Terry, K5SRT
- W5ROK contest operation.- Dennis Cobb, WA8ZBT
- Meeting Refreshments Setup Volunteer – Jim Skinner, WB0UNI (more helpers please)
- RCARC Roster/Database/Applications/Marketing – Joe Wolf, N5UIC
- Station Tour - Bob Kirby, K3NT, Dennis Cobb, WA8ZBT
- RCARC Digital project - Robert Diepenbrock, KC4UAI; Bob Kirby, K3NT
- Yet Another Great SIGNALS Newsletter – Jim Skinner,
- WB0UNI
- Treasurers Report – Jim Gaston, KD5GYD
- Club Librarian - Stephanie Keese, AC5NF
- Website Updates - Wayne Hughes, WA0TGH

- March Program – RCARC Attending Members
- Secretary Report –Dwight Ramsey, KE5SAS
- Station Trustee – Steve Phillips, K6JT

Hope to see or hear you at the meeting,

Best Regards (73),

Bob Kirby, K3NT

[K3nt@arrl.net](mailto:K3nt@arrl.net)

<http://w5rok.us>

**Secretary's Report**

Ross Terry (K5SRT) opened the meeting at 1735 (March 26 2009), in the Dallas Conference Room with the Pledge of Allegiance. Present at the meeting were:

Bob Ashby	K5JHR	Charles Beis	K5UWD
Dennis Cobb	WA8ZBT	Randy Dunning	KC5QHH
Robert Kirby	K3NT	James Pellegrino	KE5SAR
Steve Phillips	K6JT	Chuck Samuel	K7NWM
Mike Schmit	WA9WCC	Jim Skinner	WB0UNI
Ross Terry	K5SRT	Joseph Wolf	N5UIC

**1. Officer Reports**

- a. **President's Report:** Bob (K3NT) communicated that the company has provided RCARC additional storage space at the west end of building 462.
- b. **Vice-President's Report:** Ross Terry K5SRT reminded the club that it is time to start planning for Field Day (FD). Several discussion points were brought up:
  - Place—The SCAMP tent may be available. Should we ask for its use or conduct operations from the shack as usual?
  - Should we look into Get-On-The-Air (GOTA) this year?
  - Bob Kirby, K3NT, pointed out that many of the members are “getting older” and comfort is pretty important.
  - It was mentioned that “the noise” interference source is now known and can be turned off.
  - Another comment was made that an email should be sent to all members inviting them to participate. Also, it might be possible to attract some Hams if FD is operated from the tent.
  - Ross, K5SRT, mentioned that maybe we should send QSL cards out, but Steve, K6JT, responded that FD is not normally a card event.
  - Bob Kirby, K3NT, alerted the club that one of the computers in the lab has a problem and must be repaired before FD.
  - The K3 will now be loaned to Chuck, K7NWM, for further checkout prior to FD.
- c. **Secretary's Report:** Dwight Ramsey, KE5SAS, was unable to attend. The report was accepted without comment as published in the February Signals newsletter.
- d. **Treasurers Report:** Jim Gaston KD5GYD, was unable to attend. There was no Treasurer's Report.
- e. **Station Trustee's Report:** Steve, K6JT, reported that the repeater is AOK.
- f. **Activities Chairman Report:** There was no Activities Chairman report, as John Champa, K8OCL, was unable to attend. John has resigned the position and a replacement Activities Chairman is needed.

**2. Old Business**

- a. **Company Funding:** There was discussion about how to get the corporate funding moving. A list of club expenditures to date will be prepared and submitted to HR.

### 3. New Business

- a. **Change of Conference Room:** The decision was made to investigate using the Temple conference room for future meetings, since it is closer to the north gate, making it easier to access by visitors.
- b. **Meetings and Newsletter:** The question was posed as to whether the club should change to a bimonthly or quarterly meeting and newsletter. It was decided to continue the monthly meeting and newsletter.
- c. **Club/Member Activities:** All members should report any participation in public service activities for inclusion in the RCARC annual report to HR.
- d. **50 / 50 Contest:** The 50/50 drawing was won by Ross, K5SRT. The drawing yielded \$17 for the club. Also, \$3 was contributed by snackers. These funds support refreshments at RCARC meetings and other club activities.

After the meeting adjourned, the officers toured the Temple conference room and determined that it is adequate for the club meetings. The attendees adjourned to the club shack to operate the new K3 radio.

## Follow-up Review of the Elecraft K3 on CW

(Continued from page 1)

### Excerpts:

Elecraft suggested that we bring the radio up to the most recent firmware revisions. Accordingly, I updated the firmware, which is now at version MCU 2.78, FPF 0.02 (same as before, but updated anyway), and DSP1 01.98. These are all the most recent per the Elecraft loader program (which I installed in my Windows XP partition). We also verified that the K3 internal noise (measured per Elecraft suggestion) is within normal parameters. After doing the updates there was no change in the noise at the low (150 Hz) bandwidth setting.

**Elecraft Comment:** "The K3 filters of 150 Hz and wider are FIR. They don't ring, but I suspect what you are hearing is severely band-limited noise. The skirt slope of the K3 filtering is on the order of 25 dB per 100 Hz. I do not know what slope of the Jupiter filters, but I suspect they may be less steep."

(My explanation to Bob) FIR or finite impulse response is a mathematical algorithm for creating filters digitally. IIR filters (infinite impulse response) are sharper, but I turned off that option (which applies only to 50 and 100 Hz anyway). Apparently we are hearing what is sometimes called "pink noise", or band-limited noise. I agree it is not "ringing" in the filters, which has a different, echo-like sound with "pings and pops".

**Elecraft:** We have had many customers rave about the filters. But not everyone hears the same, and there are wide variations amongst our species in terms of what is pleasant and what is annoying in what we hear. My grandson's musical tastes drive me from the room, yet he likes to turn the volume up. Go figure!

We have been considering addition of a "normal|soft" selectivity feature to the K3. No final decision has been taken on this, but I wonder if you think it might be helpful in your particular situation?

The K3 NR function works best with wide selectivity. As you tighten the filters, the NR algorithm has less to observe and noise appears more and more like signals (and vice-versa).

**Response:** Agree that a "normal / soft" selection may indeed improve the listening experience at the low bandwidths. This appears to be what the Ten Tec uses. I searched the Ten Tec manual, but could not determine the roofing filter bandwidths. It did say a monolithic crystal filter (MXF) is used with the first IF (45 MHz) and ceramic filters are used with the second IF (455 KHz). Interesting that my first assignment at Collins Radio Company about 40 years ago was designing monolithic crystal filters. Although the technology may have improved for fabrication, I doubt if the basic design methods have changed. I would be very surprised if the MXF was better than 4 pole and had a bandwidth less than 10 KHz. I would consider it a "roofing filter", although the ceramic 2nd IF filters also serve that function and their bandwidth is unknown (but likely narrower than the MXF considering the low frequency).

I am sure the 3rd IF is where all the DSP filtering occurs (12 KHz). No mention of the type of DSP algorithm, but FIR is a logical choice, given that the DSP used in the Ten Tec is pretty old and may lack the precision needed for IIR calculations.

I agree that what we hear is band-limited "pink" noise. The problem is that it becomes quite fatiguing and is centered around the pitch selected, so the desired signal is partially covered by the noise AND it has a slightly hollow sound (which is what we described as "ringing").

I also agree it is not "ringing", since it does not increase in amplitude with the signal (but is, in fact, masked by the signal). It is just a fairly constant band of pink noise varying in amplitude with atmospheric band noise that effectively reduces the audible signal to noise ratio.

The Ten Tec design, while it has nowhere the dynamic range of the K3 (it easily overloads with strong nearby signals), is much less fatiguing to listen to. I got a headache from the noise when operating for just a half hour with the K3 under weak signal conditions for one of my transcontinental corps schedules from Texas to the west coast. That does not happen with the Jupiter, which somehow is nearly void of the "pink noise" (but there is a small amount of band limited noise present). It should also be noted that when using the Ten Tec Orion II, the top-of-the-line unit, the pink noise problem is much more noticeable, likely due to better (i.e., sharper) filtering in the more expensive unit.

That being said, other rigs that I've operated, such as the Kenwood TS-2000, are far worse than the K3 in this regard. So it depends on what you are used to hearing.

**Bottom Line:** If you use bandwidths of 400 Hz (our narrowest CW "hard" filter) or higher, along with low CW offset tones (450 Hz or lower) you are not likely to be bothered by the noise, and the noise reduction logic will work much better.

## A Radioman's Story of WWII

from by Tice Barnett, W5DAJ, SK on July 14, 2007

The following is a recollection of the beginnings of WW2 by my Uncle, Tice Barnett W5DAJ. He started out as a radioman in the Navy and finished as a Lt. Col in the Air Force reserves involved in radio development and procedures. He was a watchmaker who could take a mayonnaise jar filled with the loose parts of a timepiece and a few hours later hand you a working watch that kept excellent time. He also did hand engraving and was featured in reports on his skills in the DFW area. For a while he was in charge of instrument repairs for Braniff Airways. He was an amazing individual. This is a little off topic but hopefully will be interesting to some.

World War II began for me in the month of June of 1941. I was in a Naval Reserve Communication unit, similar to the National Guard. These units consisted of civilians interested in or active in radio or other types of communications. Each Tuesday night we met in a National Guard armory and practiced handling messages by radio with other units in various cities over the United States. We were instructed in methods and procedures of the U S Navy communications. Some nights we studied the repair of our equipment; sometimes we studied military courtesy such as saluting, recognizing officer ranks and many other small details necessary to making a seaman. We studied marching, how to wear the uniform of a sailor and many other things that seemed at the time to be unimportant but that later would help us to be at least partially prepared for the war that was to erupt on December 7, 1941.

Germany seemed far away at the time. Life was normal for most average people. We went to work or school, played basketball or some other sport and dated our girlfriends or boyfriends. Wars and conflict seemed far away or nonexistent. Most people thought little of Germany's grumbings and less of their ability to make war. We wrongly assumed that we were the greatest nation on earth because we had the most automobiles, the most radios, the most bathtubs and anything else that was mentioned we had the "most".

Hitler was called "that house painter" or "the man with a mustache", usually with a sneer, but during the time preceding our entry into the "war" we assumed if it was necessary we could whip the whole continent of Europe since we had the "largest navy" to support the "best trained army in the world" and "plenty of money to support both the army and navy". Congress either through pressure from the people or ignorance did not authorize a large army or navy until it was almost too late.

Mr. Roosevelt was president at this time and after Germany had overrun and annexed a number of small countries Mr. Roosevelt declared a national emergency. This allowed him to call up certain reserves and to make other necessary preparations for the conflict that was to follow shortly. I was called to active duty June 10, 1941. This seemed to me to be quite unfair at the time since I foresaw no need. There had been no war since I had been born and other people were not being mobilized. There was some talk of a draft of young men but no one was convinced of the necessity.

I packed my sea bag and with reluctance left my bride of seven months and proceeded to Indianapolis, Indiana as directed by my orders from the Navy. When I left home I thought it would be probably for a year and I would be home again. I did not have any idea it would be almost two and one half years before I would be home again even for a few days leave.

Indianapolis was a completely different life, even with the weekly training it was much different than I expected. The Navy had its way of doing everything and everything had to be called by the Navy name and done in the Navy way. We weren't allowed to take our wives with us. Our pay was \$36 per month and no pay allowance for our wives so my wife went back home to live with her mother and father.

When I reported to the 30th Street and White River Armory I thought how impressive a place it appeared. It was about three stories high, a river with small pier at the back. Gleaming white tall columns in a semi circle in front, ornamental iron over the windows, and an eight foot tall black iron fence surrounding it all. I was soon to find that the floors were called decks, walls were

bulkheads, and everything had a name the same as it would aboard ship that we were to be sent to later. There were about 400 men at this school for radiomen. We studied math, radio code, radio theory, message handling and other things necessary to make a radioman aboard ship. Also at this time they issued us a gun but no ammunition.

Our day began at 05:30 in the morning with calisthenics for about an hour then thirty minute break for breakfast. After breakfast we immediately went to classes much as you do in regular school. Each Friday afternoon and Saturday morning a W.P.A. marching band came and played music for us while we marched and drilled with our rifles. We learned to stand inspection of arms and clothes and shoe shines. It seemed something was always wrong or our section or platoon just didn't do something as it should. Usually I (and others) had to clean heads (toilets), pick up cigarette butts, scrub pots or some other "extra duty". After your "extra duty" you could go to town or write letters or wash your clothes or at least the time was yours to do as you pleased. We grumbled and fussed when our officers were not where they could hear us but there was not much anyone could do except wish he was home.

We thought when we got "aboard ship" that this would all stop and we could enjoy glamorous places and seeing sights etc. but it was not that way. After four months each of us received orders for sea duty or a station. I received orders to proceed to Boston, Mass and a future home aboard the USS New Mexico. This was one of the larger battleships. When I arrived in Boston we were told that the battle ship New Mexico was in Newfoundland and for us to go aboard the ammunition supply ship Kiluaua (pronounced kil-a-wea) and on to Newfoundland. This was in the month of October, 1941. Well, when we got to Newfoundland the New Mexico had just gone back to the states to Norfolk, VA. A number of us were transferred to the battleship Arkansas.

The Arkansas crew had been on North Atlantic guard duty for about three months. They were very tired of this because they had been at sea and not allowed ashore for any reason. North Atlantic guard duty for a ship was considered "bad duty". The ocean is almost always rough, cold and very disagreeable at this time of year. Germany's submarines were destroying much of the supplies we were trying to send to Great Britain and France.

Hitler's army on the land and ships and submarines at sea had overrun a large portion of the world. It was necessary for our ships to "convoy" our vessels anywhere we wanted to send supplies. To the sailor this is very boring. You can't get a newspaper and usually no radio reception. You cannot see any danger before it happens. A ship may be at sea for weeks and not see anything. Then all of a sudden a sailor lookout spots a torpedo's wake. You only have a few seconds warning before an explosion or you know you have been missed this time. After a few weeks of this kind of duty most men show some signs of worry or tension. Fortunately for me the Arkansas was being sent back to the states.

## Events and Public Service Ops

**12-13 June 2009 HAM-COM:** Watch this spot in Signals for future information on this year's HAMCOM. Meanwhile check out the website at <http://www.hamcom.org/>. (Cont. on page 7)



# ARRL Arkansas 2009 State Convention

Sponsored by

**Benton County Radio Operators**

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**Saturday, April 25th, 2009  
8:00 AM to 2:30 PM**

**Location**

Rogers First Church of the Nazarene  
4911 W. Pleasant Grove Rd.  
Rogers, AR

**Talk-in**

145.290MHz Standard Negative Offset, PL Tone 110.9

**Admission**

\$5.00 per person in advance  
\$6.00 per person at the door

**Tables**

\$5.00 each in advance  
\$6.00 at the door

Food and Drinks will be available

**Many Great Vendors Attending  
Hourly Door Prizes**

**Forums**

**VE Testing**

Walk-ins are welcome

**For More Info Contact:**

Jay Harrison - KCØCNB

479.631.7727 Phone

479.644.6646 Cell

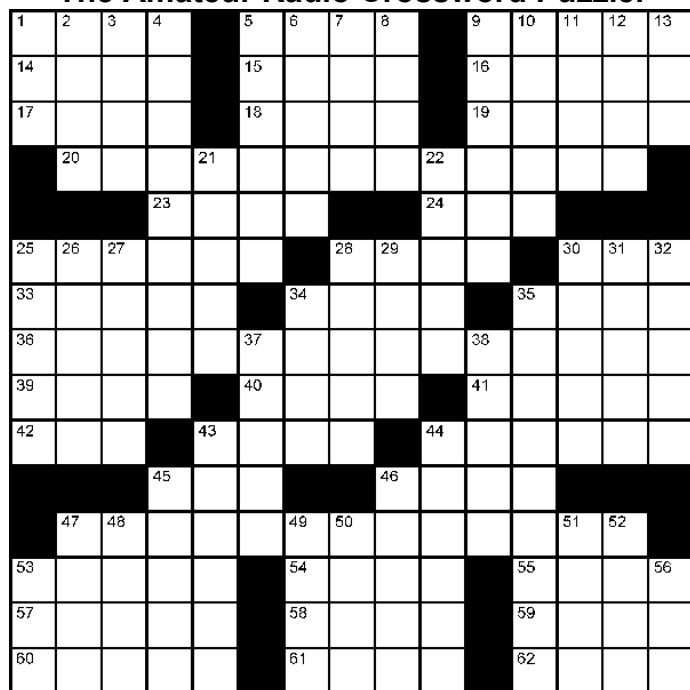
E-mail: [Texgun19@cox.net](mailto:Texgun19@cox.net)

For up to date information and to download a registration form:

[http://bentoncoradiooperators.org/BCRO\\_Hamfests.htm](http://bentoncoradiooperators.org/BCRO_Hamfests.htm)

<http://bentoncoradiooperators.org/registration.htm>

The Amateur Radio Crossword Puzzler



Across

- 1. Sea eagles
- 5. 1950s car maker
- 9. Face-to-face exams
- 14. Ham's OM
- 15. Director Preminger
- 16. Come again
- 17. N N, on 7.007, say
- 18. Start of a conclusion
- 19. It might be airtight
- 20. Four and four ninths?
- 23. Coax adapters
- 24. Rcvr ckt
- 25. Squirrel food
- 28. KH6IJ (SK)
- 30. Smart or Bond
- 33. QRS sending, not
- 34. FD abode
- 35. Joint with a cap
- 36. 1, 13, 53 and 56-down, and a puzzle sub-theme
- 39. Swimming power supplies?
- 40. Bit of trivia, slangily
- 41. A Czech Republic prefix
- 42. Driller's deg.
- 43. Tiny parts
- 44. Plates
- 45. W7 sect.
- 46. Flower tower?
- 47. Two-hundred ten?
- 53. Jeered
- 54. Surf sound
- 55. TA-33 part

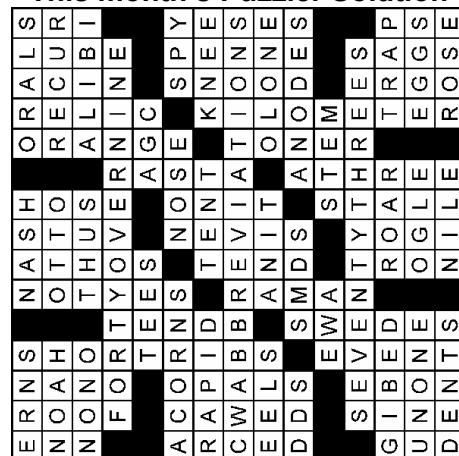
- 9. Three on a resistor
- 10. Museum piece
- 11. Label on a DC supply, say
- 12. Garage job
- 13. Apologize, on 30m, say
- 21. Big gain
- 22. Bob Marley fan
- 25. Flashed over
- 26. Crowded
- 27. Milky gems
- 28. V4 place
- 29. "Put a lid \_\_\_\_!"
- 30. Hair net
- 31. Edible tubes
- 32. C C, on 7007, say
- 34. Be inclined
- 35. KM, on 7.007, say
- 37. VU physicist and Nobel Prize winner
- 38. Copier stuff
- 43. SM ops
- 44. AM
- 45. Special \_\_\_\_\_ station
- 46. Play for time
- 47. Kind of wave
- 48. Like some piano keys
- 49. High-tech suffix
- 50. Cartoon bear
- 51. Start of a conclusion
- 52. What a long element does
- 53. Not bad, on 7.007, say
- 56. Word with QSL

- 57. Kazakhstan prefix
- 58. Gawk at
- 59. Dipole terminators
- 60. Dings
- 61. SU river
- 62. Compass symbol

Down

- 1. FB RST., in the DX test, say
- 2. Easy antenna place
- 3. Smaller than a micro
- 4. Popular beef cuts
- 5. Meaning of 17-across
- 6. Monk Apollo's QTH
- 7. R followers
- 8. Nozzle site

This month's Puzzler Solution



(Puzzler by Chris Codella, W2PA, reprint courtesy of ARRL.org)

13-14 June 2009 ARRL June VHF QSO Party

The object of this event is to work as many amateur stations in as many different 2 degree by 1 degree grid squares as possible using authorized frequencies above 50 MHz. Foreign stations work W/VE amateurs only. The event starts at 1800 UTC Saturday, ends 0300 UTC Monday (June 14-16, 2008). More info at <http://www.arrl.org/contests/calendar.html>.

20 June 2009: Kids Day.

Watch for more information on this event.

27-28 June 2009 ARRL Field Day:

The object of this event is to work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and in doing so to learn to operate in abnormal situations in less than optimal conditions. A premium is placed on developing skills to meet the challenges of emergency preparedness as well as to acquaint the general public with the capabilities of Amateur Radio. Field Day is **always the fourth full weekend of June**, beginning at 1800 UTC Saturday and ending at 2100 UTC Sunday. Field Day 2008 will be held June 28-29, 2008. More detailed info at <http://www.arrl.org/contests/rules/2009/fd.html>.

# Rockwell-Collins

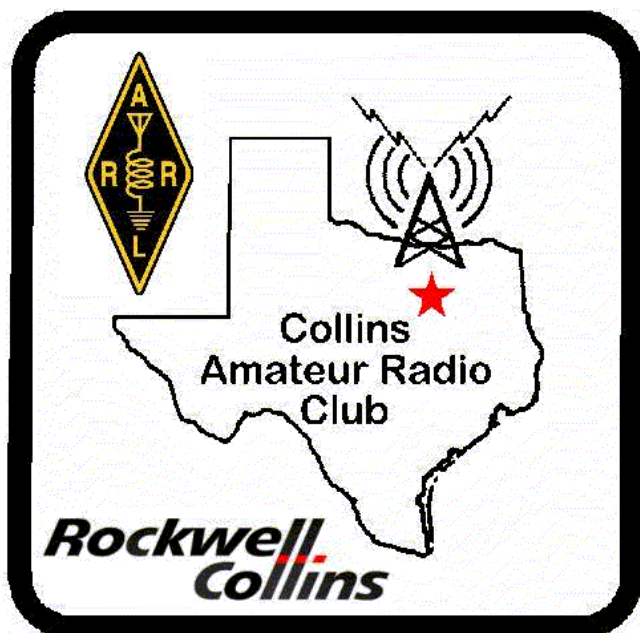
Amateur Radio Club

Mail Station 461-290

P.O. Box 833807

Richardson, TX 75083-3807

TO:



### CLUB STATIONS

(972) 705-1349

### W5ROK REPEATER

441.875 MHz +5 MHz Input

131.8 Hz PL - RX and TX

### W5ROK-1 PACKET BBS ROK Node

145.01 MHz

### MEETING

Thursday 23 April 2009

1700 Fellowship

1730 Meeting

Rockwell Collins Building 461

Temple Conference Room

**NEXT SIGNALS DEADLINE:**

**18 May 2009**