



COLLINS AMATEUR RADIO CLUB

Richardson, Texas

# SIGNALS

## MONTHLY NEWSLETTER

Volume 45 Issue 03

Web Site <http://www.n5cxx.us>

December 2023

### CARC Membership Meeting

Tuesday 23 January 2024 5:30 PM

The Meeting will be at  
Woodcreek Church Richardson TX  
(and via Zoom)

**It's Show & Tell Night!**

### There's no General Membership Meeting in December

Our next Regular Meeting is on Tues. January 23, 2024



The January 2024 meeting of the Collins ARC will feature several members giving Show and Tell presentations on a gadget, homebrew project, software app or other useful product which is useful to the amateur radio operator. The first meeting in 2024 is on Tuesday, January 23rd.

We need five or six members to step up to give a brief presentation (five to ten minutes). Slides aren't required; neither are handouts. If you need help with slides, handouts or script, just ask. Show and Tell Night is always fun, interesting and educational.

To sign up to give a talk or ask for help, contact Frank KR1ZAN at [frank@krizan.org](mailto:frank@krizan.org).

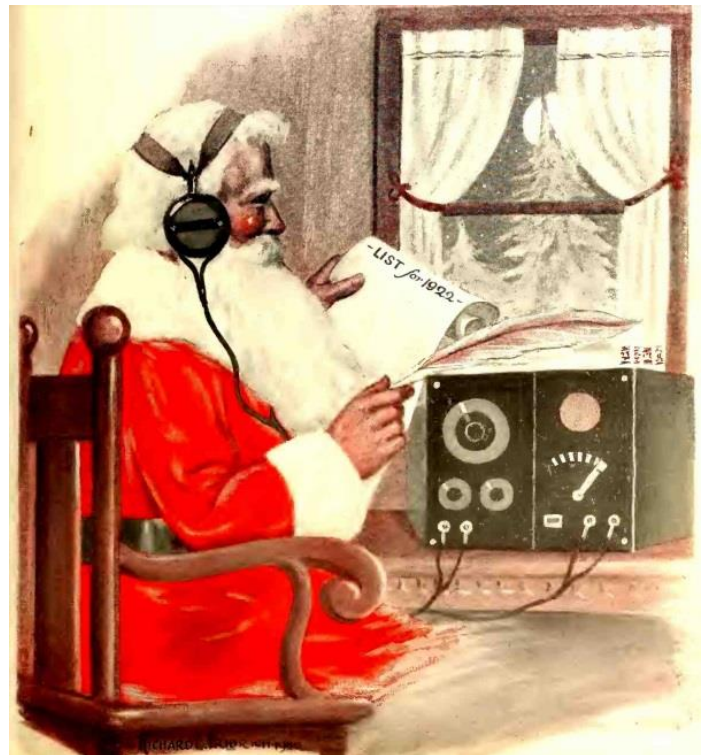
## CARC Christmas Party

Twenty-two people attended the Collins ARC Annual Christmas Dinner on Tuesday, December 5th at Aboca's Italian Grill in Richardson. The food was great, as was the fellowship; and, nine folks were especially happy having won a Door Prize.

Winners included:

- Jon Moon, KA5HND - \$100 HRO Gift Certificate
- Bob Chandler, KR5BC - \$50 HRO Gift Certificate
- Mike Montgomery, WD5TX - Baofeng UV-5R Radio System
- Clarence Sebesta, K5YO - \$25 HRO Gift Certificate
- Nancy Krizan, K5NCK - \$25 Aboca's Gift Certificate
- Bettye Weeks, K5BTY - \$25 HRO Gift Certificate
- Katy Brown - Yaesu Ball Cap
- Rose Skinner - Icom Ball Cap
- Frank Krizan, KR1ZAN - Icom Ball Cap

**See pages 11 and 12 for pictures of the Christmas Dinner**



**MERRY CHRISTMAS TO ALL AND  
TO ALL A GOOD NIGHT!!**

<b>CARC OFFICERS</b>			
<b>PRESIDENT</b>		<b>VICE-PRESIDENT</b>	
Bill Swan	K5MWC	Bill Fell	KK5PB
972-529-3906		972-424-0496	
<a href="mailto:president@n5cxx.us">president@n5cxx.us</a>		<a href="mailto:vp@n5cxx.us">vp@n5cxx.us</a>	
<b>SECRETARY</b>		<b>TREASURER</b>	
Jim Stafford	W5DTG	Kerry Weeks	K5WKS
		214-478-3230	
<a href="mailto:secretary@n5cxx.us">secretary@n5cxx.us</a>		<a href="mailto:treasurer@n5cxx.us">treasurer@n5cxx.us</a>	
<b>ACTIVITIES CHAIRMAN</b>		<b>WEBSITE MANAGER</b>	
Frank Krizan	KR1ZAN	Mike Hollingsworth	W5QH
214-563-6679		972.571.6060	
<a href="mailto:director@n5cxx.us">director@n5cxx.us</a>		<a href="mailto:webmaster@n5cxx.us">webmaster@n5cxx.us</a>	
<b>STATION TRUSTEE</b>		<b>NEWSLETTER EDITOR</b>	
Bob Kirby	K3NT	Jim Skinner	WB0UNI
319.360.0500		214.535.5264	
<a href="mailto:k3nt@arrl.net">k3nt@arrl.net</a>		<a href="mailto:newsletter@n5cxx.us">newsletter@n5cxx.us</a>	
<b>MEMBERSHIP</b>		<b>N5CXX CLUB STATION</b>	
Bill Fell	KK5PB	<b>Phone Number/Mail Station</b>	
972-424-0496		<b>Unavailable until further notice</b>	
<a href="mailto:vp@n5cxx.us">vp@n5cxx.us</a>			

Hall are located on the east side of the church building, with big signs by the entrance door. Contact Janet Crenshaw, WB9ZPH at 972.302.9992.

**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.

**Richardson** The Richardson Wireless Klub (RWK) VE team hold license testing on the third Thursday of each month at St. Barnabas Presbyterian Church, 1220 West Beltline Rd. Testing begins at 1900 hrs in room 12. Enter through the Northern most door on the east side of the church building. For further information contact Don Klick KG5CK. 972.464.2889 or E-mail [rwkhamtest@gmail.com](mailto:rwkhamtest@gmail.com).

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**VE SESSIONS**

**The Northeast Metro** ARRL License Testing Group will hold testing sessions on the **first** Monday each month (except holidays) at the Garland Amateur Radio clubhouse in downtown Garland TX, 1027B Austin St., Garland TX 75040 beginning August 2023. Time 6-8pm. All who want to test for an amateur radio license are welcome. You will need **photo ID, FRN from FCC and \$15.00 correct cash**. All forms, etc., will be provided by testing group. You can reserve a seat by calling Kerry Weeks at 214.478.3230 or email at [weeks.kerry@gmail.com](mailto:weeks.kerry@gmail.com) in advance of the test.

**Dallas** tests are held on the fourth Saturday of each month at 1000 hrs. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD 972.917.6362

**Irving** tests are held on the third Saturday of each month at 0900. Fifth 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 1430, ending no later than 1645. **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



**de The Prez**

Our January 2024 meeting is coming up on the 23<sup>rd</sup>. This is the meeting where we install the new officers and have great Show and Tell presentations. It is always interesting and with a certain element of surprise as to what club members present.

The November annual meeting resulted in the election of the new officers, approval of the 2024 baseline budget and a review of the 2023 year. Congratulations to Mike Montgomery as President, Bill Fell as Vice President, Mark Dempsy as Treasurer and Jim Brown as Secretary. The December board meeting was primarily devoted to the transition from the current officers to the 2024 officers. The minutes of that meeting are included in the newsletter but I would just add that I felt we had a good exchange of information and a review of some important carryover action items.

Our Christmas dinner was a most successful time to have great fellowship and good food along with some great door prizes. Aboca's Italian Grill again gave us good service and as they have in the past hosted our event with a true sense of warmth and welcome. Frank Krizan and Kerry Weeks did

yeoman work getting our door prizes from Ham Radio Outlet and from some anonymous donors. Congratulations to all of the winners.

What About Tomorrow??? At the end of our November Annual Meeting, I asked those at the meeting what their response would be to a question about the future events and programs that the club should look into. Since this was an unannounced question, the answers reflected some spontaneous comments. Those, when added to the previous survey results, should help us direct the club to the future. Good membership participation is the key to achieving those plans. Support your new officers as you have supported the current officers with your involvement and commitment.

The year 2023 has flown by, and it is sometimes hard to believe that we are almost in a new year. As I pause and reflect on the past year, I can only feel blessed that I had a great team to work with. That team put in many hours of meetings and work to support and address some of the areas that needed attention and they also laid a foundation for expanding the club's future through the Big Project program. It was my goal to also provide to the membership increased transparency in all areas. With the aid of our secretary and the newsletter editor I believe that was accomplished.

This time of the year is a time when we stop and reflect on family and friends, count the blessings of the year and be thankful for getting through some of the hard times we may have had. It is a time of rest. When I think of rest, what comes to mind is something that I was told by an Iranian Navy Commander when I was in their country during the 1970's that is included in the Time of Prayer that they practice each day. Roughly translated from Farsi it means "quiet thee now and rest." Good advice!

May you have a joyous and peaceful time of the year, and I wish for each a very Happy New Year.

Looking forward to seeing each of you at our January meeting.

You will see this in every President's article that I write as I sincerely want to serve you, our members.

As I close this newsletter entry, I commit to you that I will strive to continue the work of the CARC, a work focused on providing fellowship, transparency, and value. Let me know if you have suggestions or comments on how we can work together to make the CARC shine and grow.

73s,

Bill K5MWC

## Vice-President's Report

**VP Report** –We elected the CARC 2024 Officers, reported elsewhere, at the November GMM. Those officers will be

installed at our January GMM. And, I will have challenge coins available for purchase at \$5 each at that meeting.

**Membership Committee** – No membership committee activity this past month.

Current Active Membership = 57

Full Members = 41 (includes life and retiree members)

Associate Members = 16

New Members = 0

Members moved to Inactive Status = 0

Continuing membership is important to the CARC. Through the skills and experiences of all our members, our club provides fellowship, education, and service opportunities. If you have questions about your membership status or other membership-related questions, please contact me. Thank you to all of our members for your support and contributions to the CARC.

73, Bill, KK5PB

## Secretary's Report

### Annual Meeting Minutes

14 November 2023

President Bill Swan K5MWC called the meeting to order at 1740 CST. The meeting was in-person at our meeting site at Woodcreek Church. Zoom access was not provided due to technical difficulties.

#### The following were present at the meeting site:

Bill Swan, K5MWC (President)

Bill Fell KK5PB (Vice President / Membership)

Frank Krizan KR1ZAN (Activities / Training) Absent

Jim Stafford, W5DTG (Secretary)

Kerry Weeks K5WKS (Treasurer)

Jim Brown AF5MA

John McFadden K5TIP

Dennis Cobb WA8ZBT

Mike Montgomery WD5TX

Cameron Prince KJ5CXO

Jon Moon KA5HND

Paul Veenstra AA5PV

Wayne Collins KI5YOQ (visitor) = Woodcreek Church coordinator

**The following tried to login via Zoom:**

Mark Dempsy N5MD

Jim Skinner WB0UNI

(Zoom not available due to technical difficulties).

**Preliminaries**

1. Opening remarks and Pledge of Allegiance
  - a. Bill Swan Informed the attendees that Frank KR1ZAN took his wife Nancy to the ER this morning and was not in attendance tonight and asked for all to keep her in thoughts and prayers.

**2. Member and Visitor Introductions**

3. **Officer Reports** - Included in the November Newsletter.

4. **Old Business** - None

5. **New Business** - None

**6. Announcements**

- a. The Annual Christmas Dinner will take place on Tuesday, December 5th, beginning at 5:30pm, at Aboca's Italian Grill, 100 S. Central Expwy, Unit 63, Richardson. Everyone will order off the regular menu beginning around 6pm and be responsible for their own bill. Over \$200 in door prizes will be awarded. If you plan to attend, please send an email with names and call signs (if applicable) to kr1zan@ARRLnet.
- b. The CARC challenge coins are available for a donation of \$5. Bill Fell has them available at all membership meetings. Out-of-town members must pay for postage and handling.
- c. Cameron Prince advised the membership that the club website N5CXX.org was now activated, and ready for viewing. He asked all to login and look it over and forward comments to him and Frank Krizan for suggestion for additions, subtractions, and changes before formal release is made.

**7. Adjourn Business Meeting** at 1800 CST.

There being no further business, President Swan declared an adjournment of the Business Meeting at 1800 CST. The Annual Meeting immediately began.

**Collins Amateur Radio Club Annual Meeting**

Bill Swan called the 2023 Annual Membership Meeting to order at 1802 CST.

- a. Review of membership status – Bill Fell

The CARC currently has 57 members, of which 41 are Full Members (7 Honorary Life), 16 Associates (5 Honorary Life) and 6 new members joined in 2023.

- b. Review of Financial Status - Kerry Weeks presented the financial status. Details are provided in the Members Only portion of the N5CXX web site.
- c. What we accomplished during 2023 – Bill Swan
  1. Successful move to new meeting location
  2. Challenge coins serve to show others with pride that the CARC is about Education, Service and Fellowship
  3. Registered our Club with the Texas Secretary of State
  4. Developed procedures in compliance with Collins Aerospace security requirements
    - Visitor and escort processing into the club room in B461
    - Equipment removal to aid in inventory management
  5. Established a Big Project initiative and special interest group establishment
  6. Developed a guide to aid Officer transition - initial publication planned for January 2024 - Prepared by Jim Brown
  7. Developed a procedure to permanently retain key documentation in a searchable data base
  8. Began the restoration of the Club radio station to the status that it was prior to the company directive in 2021 to vacate the room to make the space available for secure program use. That directive was rescinded in 2023, and a team is hard at work to accomplish that restoration in 2024.
  9. Approval of a 2023 expense plan that funded the final months of 2023
  10. Established a new account with Prosperity Bank
  11. Initiatives begun on three important items
    - Implement a searchable data base of actions and decisions made by board and the membership – Led by Jim Stafford
    - Development of a transparent and executable financial management development system – Led by Kerry Weeks with support by Bill Fell

- Update and revision of our CARC web site – Led by Frank Krizan with support by Mike Hollingsworth and Cameron Prince
12. Provided programs of interest to members at monthly membership meetings.
  13. Conducted Field Day in the Club's B461 Radio Room after initial restoration of the station
  14. Conducted three successful Radio Room open houses with plans to hold weekly employee member lunch-time "Rag-Chews". Radio Room also now on tour of labs for new employees.
    - 15 people have attended through October
    - Includes explanation of digital modes, voice and CW capabilities of the station
    - Discusses operating items like nets, EMCOMM, Skywarn, etc.
  15. Update of current asset listing to support good inventory management

**d. 2023 Programs and Activities**

- Jan 24 - Show & Tell Night (KR1ZAN / W5DTG / K5WKS / K9MDI / KI5WZV / W2DMR)
- Feb 28 - ARRL Night - Steven Lott Smith, KG5VK, ARRL NTX Section Manager
- Mar 28 - 3D Printing - Joaquin Cruz, KI5WZV
- Apr 25 - CARC HF GO-KIT - Bill Fell, KK5PB
- May 23 - Field Day Final Plans / Briefing
- Jun 24/25 - ARRL Field Day
- Jun 27 - WSPR - Frank Krizan, KR1ZAN and Field Day Recap
- Jul 25 - Ice Cream Social
- Aug 22 - Fox-hunting Basics - Chip Coker, KD4C
- Sep 26 - Locating Power Line Noise (and other RFI), Jeff Stuparits, W4DD
- Oct 24 - nanoVNA: A Primer - Shawn Prestridge, KI5PXG
- Nov 14 - Annual Meeting/Elections
- Dec 5 - CARC Christmas Dinner - Aboca's Italian Grill

- e. Election of 2024 Board Officers - Bill Swan reviewed the Constitution regarding electing new officers.

Bill Fell conducted the election.

Nominees:

- President – Mike Montgomery
- Vice President – Bill Fell
- Secretary – Jim Brown
- Treasurer – Mark Dempsey

**MOTION by Bill Fell: Moved to elect the proposed nominees as officers of the Collins Amateur Radio Club for 2024**

**Seconded by Kerry Weeks**

**No additional nominees from the floor**

**Vote Called and Passed Unanimously**

The elected officers will be installed during the January 2024 General Membership Meeting.

**f. Proposed CARC 2024 Baseline Operating Budget considerations**

- The team performing the Restoration Project is making good progress but a completion date is not clear.
  - Need to provide a clear and realistic picture of the baseline going into 2024 so available funding for new projects is known at the beginning of the year. This will aid in project selection.
  - Need to provide greater flexibility to the new Board and the Membership to make value-added project choices under limited available funding.

**g. Baseline Budget**

The 2024 Baseline Budget was presented to the membership for review. Following the presentation, a

**MOTION was made by Bill Fell: Moved to adopt the budget baseline for 2024 as proposed by the Collins Amateur Radio Club Board of Directors.**

**Seconded by Kerry Weeks.**

**No Discussion**

**Vote Called and Passed Unanimously**

**Details of the Baseline Budget are provided in the Members Only portion of the N5CXX web site.**

**h. Potential Projects Not Included in the 2024 Baseline Budget**

- Go Kit Battery Power
- WSPR Technology

2024 Field Day Operation actually deployed in the field

Go Kit Lap Top Computers

Big Project Demo Equipment

Big Project Test Equipment

Note: A file with more description and statements of need and value is available and will be provided to the new board.

**i. What About Tomorrow**

**(Enhancing Club Values - Service, Education, Fellowship)**

Expand Field Day

Parks on the Air

Net Control training

Richardson outdoor warning test monitors

Build relationships with Raytheon hams

Various special events volunteering

Training for ARRL events and contests

**j. Meeting adjourned after appreciation comments at 1900 CST**

**Minutes respectfully submitted by Jim Stafford, Secretary Collins Amateur Radio Club**

**CARC Board Meeting Minutes**

**Date: 12 December 2023**

Bill Swan, K5MWC, called the Collins Amateur Radio Club of Richardson, Texas Board of Directors meeting to order at 1900 CST.

Board Members Present:

President: Bill Swan, K5MWC

Vice-President/ Membership Director: Bill Fell, KK5PB

Secretary: Jim Stafford, W5DTG

Treasurer Kerry Weeks, K5WKS

Immediate Past President / Director at Large: Frank Krizan, KR1ZAN

Visitors Present:

Mike Montgomery, WD5TX, President Elect

Jim Brown, AF5MA, Secretary Elect

Bob Chandler KR5BC

1. Welcome
2. Motion to approve the Consent Agenda

Item A: Minutes of the 24 October 2023 General Membership Meeting, previously distributed

Item B: Minutes of the 14 November 2023 General Membership Meeting 2023, previously distributed

Item C. Minutes of the 31 October 2023 Board Meeting, previously distributed

Item D. Agenda for the 12 December 2023 Board Meeting, previously distributed

Item E. Resolution to pay Commercial General Liability Coverage:

WHEREAS: The CARC has a Commercial General Liability Coverage insurance policy with the ARRL Radio Club Liability Policy Number RCS20454 and

WHEREAS: The policy is set to expire on 2 January 2024 and

WHEREAS: An amount of \$250 dollars was included in the FY2024 Budget Baseline as approved by the membership on 14 November 2023 therefore be it

RESOLVED: In accordance with the CARC constitution that tasks the Board of Directors to take care of general business items on behalf of the Membership that may result in expenses not to exceed \$500 the Treasurer is authorized to renew the policy for an amount of \$200 but not to exceed \$250.

Motion made to accept the Consent Agenda by Bill Fell, seconded by Kerry Weeks. Motion passed unanimously.

3. Introduction and welcoming of new officers for FY2024
  - Mike Montgomery, WD5TX, President Elect
  - Bill Fell, KK5PB, Vice-President/ Membership Director
  - Mark Dempsy, N5MD, Treasurer Elect
  - Jim Brown, AF5MA, Secretary Elect
  - Bill Swan, K5MWC, Immediate Past President / Director at Large
4. CARC Officer Transition Guide Review
  - a. General comments
  - b. Review selected parts of the document
  - c. Will publish initial release in January 2024
5. Items to Resolve
  - a. Action Plan development with timeline
    - i. Searchable Filing System - Stafford
    - ii. Financial Reporting and Record Keeping - Kerry Weeks and Bill Fell
    - iii. Website update and revision - Krizan

- b. The initial version of these documents will be available in January 2024.
- 6. Carryover Action Items Review
  - a. Complete Station Renovation
  - b. New N5CXX FRN
  - c. Implement procedure to sale surplus club equipment
  - d. Financial Reporting & Record Keeping
  - e. Big Project Development
  - f. Prosperity Bank signature authority
  - g. What About Tomorrow
    - i. Expand Field Day
    - ii. Parks on the Air
    - iii. Net Control Training
    - iv. Outdoor Siren volunteering
    - v. Build relationship with Raytheon
    - vi. Volunteer at various special events
    - vii. Training for ARRL events and contests
- 7. Sale of Equipment Process Discussion
  - a. Goal is to develop a process that is open to all members who want to purchase an item offered for sale
  - b. Motion by Kerry Weeks and seconded by Frank Krizan to bring the Bill Swan surplus equipment disposition proposal to the floor for discussion. Motion passed.
- 8. What About Tomorrow Discussion
  - a. Top of head, no prior notice, and spontaneous
  - b. Build on those items and address how to encourage volunteering to implement such programs
  - c. Perhaps more participation in ARRL events
  - d. Build for the future
- 9. D-Star Repeater Discussion - Frank Krizan
  - a. Frank Krizan purchased a D-Star repeater from HRO for under \$500.
  - b. Board discussed purchasing the repeater from Frank Krizan and installing it at the Collins Aerospace CARC repeater site.
  - c. Mike Montgomery stated it was easy to program and was in favor of the purchase.

- d. Motion by Kerry Weeks and seconded by Bill Fell to purchase the repeater from Frank Krizan not to exceed \$450 and install at the facility. The vote passed with one no vote by Jim Stafford.
- 10. Don Eichenberger wants to sell a Collins KWM-2 to CARC. Bill Swan will contact Don and tell him to contact Mike Montgomery, 2024 CARC President, to negotiate price if the new Board wants to proceed.
- 11. January Program Reminder - Installation of 2024 Officers and Show and Tell
- 12. Adjourn
- 13. Board Meeting adjourned at 2145 CST.

Minutes recorded by  
 Jim Stafford, W5DTG  
 CARC 2023 Secretary

## Upcoming Meeting Programs

[2024]

Jan 23 - Show and Tell Night

Feb 27 - ARRL Night - Steven Lott Smith, KG5VK (ARRL NTX SM)



We're working on a program on Getting Started with the Raspberry Pi and a speaker on the AMSAT Fox-Plus Project. If you have suggestions for meeting topics that would interest our members, send them to [kr1zan@arrrl.net](mailto:kr1zan@arrrl.net).

In May, we anticipate a program on final plans for Field Day, and, of course, July is our Annual Ice Cream Social. November is the Annual Meeting, and Elections and December is our Christmas Dinner Party.

### **CQ...CQ...CQ Drive Home Net Volunteers Needed**

We're looking for volunteers to serve as Net Control Stations (NCS) for the Tuesday night Drive Home Nets. We need NCS for the 1st, 2nd & 3rd Tuesdays. There's no Net on the 4th Tuesday because that's our monthly meeting night. Fifth Tuesdays are covered.

We are looking for commitments for a 3-month period and seek 3 NCS per quarter; that way each NCS only has to run the Net once each month. Nets are held on the Garland ARC UHF repeater, 442.7 MHz, + offset, PL=110.9 Hz, Tuesdays, except for meeting nights from 5:30 to 6 pm. Once the Collins ARC UHF repeater is repaired, we'll move the Net back over to 441.875.

An NCS script is available and training is available for anyone who hasn't been a regular on the Net or wants additional insight on running a net. Initial assignments are for January, February and March.

To volunteer or ask for more info, just reply to this email. PLEASE INCLUDE YOUR NAME, CALL AND TUESDAYS (1st, 2nd, 3rd) ON WHICH YOU ARE AVAILABLE.

Thank you all for your consideration.

Frank KR1ZAN, Net Manager (Acting)

## CARC Community Service Activities

**Siren Testing** Dennis Cobb WA8ZBT and Jim Skinner WB0UNI participate in the Richardson outdoor warning siren testing. The December 2023 test was conducted on 6 December. All sirens worked perfectly. The sirens are monitored by amateur radio operators and reports made using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz. Siren testing occasionally uses the University of Texas at Dallas (UTD) repeater at 145.430 MHz, as backup. The following CARC members participated in the December City of Garland Siren Test: Bob Jones, W5BJ and Frank Krizan, KR1ZAN. The Garland test observations report on a Net conducted on the GARC 146.66 repeater.

**Crime Watch Patrol** Jim Skinner WB0UNI participates in Richardson Duck Creek Crime Watch Patrol (CWP). CWP members, after successful completion of Richardson Police Department training, patrol their neighborhoods and report

## Cube Sats Beginnings

A fascinating article describes the development of the CubeSat standard by AMSAT member Bob Twiggs, KE6QMD, and co-inventor Jordi Puig-Suari, an aerospace engineering professor at California Polytechnic State University.

Searching for a way to simplify the projects - and cut out build time - Twiggs thought, "What if we made [the satellite] a cube and put solar cells on all sides so no matter which way it rotated, it was going to get charged?" With some spare solar cells from NASA's Jet Propulsion Laboratory, he went down to a local shop and found a 4 x 4 x 4-inch transparent box.

It was also around that time -b in 1999 - that an infamous error caught Twiggs' attention. That year a mix-up between Imperial and metric units by a Lockheed Martin engineering team caused NASA's Mars Climate Orbiter to burn up in the red planet's atmosphere, ending the mission early. "I said, 'It's about time students learn metric,'" he says. "I wonder what this [4-in. box] is in metric?"

Well, it turned out to be just almost 10 cm. Read the entire article at <https://tinyurl.com/ANS-337-Twiggs>.

[ANS thanks Aviation Week Network for the above information.]

[Source: ANS-337 AMSAT News Service Weekly Bulletin, 3 December 2023]

## Dubya...Dubya...Dubya

Web sites for Hams ...

We all have our favorite web sites for various amateur radio topics and resources. To help in the sharing of that info, we're starting a monthly collection of useful web sites on a different topic each month. This list isn't all inclusive ... and, we're sure you have others that could benefit your fellow members.



So, we'd like to ask that you send along your URLs (web site addresses) along with a short description of what's important on the web site to [frank@krizan.org](mailto:frank@krizan.org). We'll publish your added links in the following month's SIGNALS.

Also, if you have a favorite web site that's not associated with this month's topic, send it along with a brief description to [frank@krizan.org](mailto:frank@krizan.org) and we'll include it in the ETC section of next month's Dubya-Dubya-Dubya.

This month, our focus is on "**Grounding**" ... our coverage is not comprehensive, so we hope you'll send in your favorite websites for grounding and bonding that have been useful to you. We'll print those next month in ETC below.

### ARRL Grounding and Bonding for the Radio Amateur 2nd Edition

<https://home.arrl.org/action/Store/Product-Details/productId/133989>

### ARRL Grounding Information Resources

<https://home.arrl.org/action/Store/Product-Details/productId/133989>

### List of technical articles on grounding and lightning protection - KF7P

[https://www.kf7p.com/KF7P/Tech\\_Resources.html](https://www.kf7p.com/KF7P/Tech_Resources.html)

### Lightning Presentation by Phil Salas, AD5X

<http://www.ad5x.com/images/Presentations/Lightning.pdf>

### Amateur Radio Bonding and Grounding Made Simple

<https://www.repeater-builder.com/tech-info/bonding/amateur-radio-bonding.html>

### Grounding and Bonding for Portable Amateur Radio Stations



<https://www.onallbands.com/grounding-and-bonding-for-portable-amateur-radio-stations/>

**Grounding & Bonding for Home HF Stations - Ward Silver. NOAX**

<https://yelmamateurradiogroup.org/manage/?mdocs-file=2578>

etc...

**Space Weather Enthusiasts Dashboard | NOAA / NWS Space Weather Prediction Center**

<https://www.swpc.noaa.gov/communities/space-weather-enthusiasts-dashboard>

**NASA has launched a new no cost, ad-free streaming service featuring live coverage and original video series. Details on the service, called NASA+**

<https://aviationweek.com/aerospace/commercial-space/cubesats-how-accidental-standard-launched-new-space-age>

## Learning Morse Code

**by: Jim Edmondson, N5JGE**

*[This article is reprinted by permission of the author and the Nacogdoches Amateur Radio Club, NARC Newsletter, December 2023]*

This month's article will highlight some resources and methods that I have used for learning Morse Code. There are many others available if none of these work for you. I started to study Morse Code in 2022. After learning the alphabet, I got distracted with other radio activities and stopped routine practice.

I re-started my effort a few weeks ago and already have made much better progress by using several learning principles and internet resources. I am using self-directed learning based on principles that I learned by reviewing several classroom teaching curricula. If you learn better in a more structured environment, there are several organized classes available via virtual learning. The [Long Island CW Club](#) (LICW Club) and [CW Ops](#) are probably the best known.

There are several principles for learning Morse Code that are used in almost every informal or formal learning structure:

- Learn the distinct sound of each character, not the individual dits and dahs (don't count);

- Do not begin learning at very slow speeds, instead use Farnsworth timing (see below);
- Learn selected letters first, adding new letters to the list as you copy all former letters at better than 70% - 90% using your chosen Farnsworth speed;
- Daily practice in several short periods is most effective; and
- Strive for instant character recognition while increasing speed after learning the necessary characters (about 40).

There is less agreement on the order to learn letters, numbers, punctuation and prosigns, when to learn sending and which type of key to use for sending. Many teach what is called the Koch method. Extensive research by the LICW Club showed that this character sequence was not really used by Koch! The LICW Club developed their own letter sequence based on the characters most often used in QSOs.

Some recommend learning to copy before learning to send. The LICW Club incorporates sending from the very beginning and recommends using a straight key. They believe that the direct association of muscle movement to form the characters aids in learning. Others believe that a paddle should be used from the beginning due to its efficiency, better formed code and controlled sending speed. Many CW operators end up using a paddle eventually, so starting with a paddle eliminates switching keys midstream. Use whichever is more comfortable for you. To get started, learn the characters as a single sound, not a series of dots and dashes.

Focusing on the dots and dashes leads to counting them which slows down processing considerably. Learners starting by counting and/or with slow sending speed to learn the characters tend to plateau at about 13 WPM (words per minute). Progress beyond that speed takes great effort, maybe even starting over.

Learn at a relatively rapid sending speed. This is a bit problematic when first learning because you are using your conscious brain to convert the sound to its character, which takes time. Having the characters coming too fast will lead to many missed characters and a lot of frustration. The solution to this problem is known as "Farnsworth" timing. This method sends each character at a rapid speed (12 – 20 WPM), but allows large spaces between the characters (5 – 10 WPM effective speed) for your brain to process what it hears. When first learning, you should strive to copy between 70% and 90% correctly. If you are copying much worse than this, slow down.

When copying 90% or better, add a new character or speed up. Higher speed learning also helps your brain to learn the sounds because the sending speed is too fast for counting.

Learning the sounds at high speed prepares you for increasing your effective speed when you “really learn the characters.” What is meant by really learning the characters is when you are using your subconscious brain to convert the sound to a character. This is known as “Instant Character Recognition”. This skill is usually needed to get over the 13 WPM plateau. Classical Farnsworth timing is to use 20/5 WPM (abbreviated as FWPM 20 / 5) to start learning letters, numbers, and a few punctuation characters.

The LICW Club did extensive research on the history of Morse Code learning. AA0Z has a YouTube video ([LICW Video](#)) where he interviewed one of the founders of the LICW Club and their primary researcher on the findings. It is really fascinating and worth the hour to watch. They structure their learning of the first 18 characters at FWPM 12/8 (Beginners Carousel 1). Then 26 additional characters and prosigns are added, and the speed is increased to FWPM 12/10 (Beginners Carousel 2). Beginners Carousel 3 focuses on QSO structure and getting on the air. Intermediate and Advanced classes focus on ICR, head copy and increasing your speed of sending and receiving.

I have been using Learn CW Online ([LCWO](#)) to learn the characters using the LICW Club recommended FWPM of 12/8. LCWO uses a character progression similar to the traditional Koch sequence. If you create a free account, you retain your place in the lessons and track progress via a nice set of statistical graphs for each lesson that you complete. The figure at the end of this article shows my statistics for the first 17 (of 40) lessons. As or after learning the characters, there is the “MorseMachine” to help develop ICR. Other practice tools focus on words and callsigns.

To supplement LCWO, I use the extensive YouTube audio files recorded by Kurt Zoglmann – the “[Morse Code Ninja](#)”. Kurt uses a different letter sequence and mixes words and callsign into the lessons for each letter. He also has extensive tools to help with Instant Word Recognition (IWR), head copy, callsigns, etc. While using LCWO for basic learning, Kurt’s YouTube channel provides thousands of hours of code to listen to and copy.

Two other sites that I recently found are [MorseCode.World](#) and [Head Copy](#). I have not used these much, but they seem like great tools for advanced learning. MorseCode.World has a good tool for ICR and follows letter sequences for the major classes and LCWO. One section follows the teaching method of CW Ops, another simulates QSOs and yet another provides Morse code to copy from current headlines to expand your vocabulary. You can also enter text and the website will generate “perfect” code for you to listen to. Much of the content can be downloaded for offline study.

Head Copy obviously focuses on copying without any aids. Code is played, and you have to choose the correct sequence from five choices to advance to the next.

Many options as to what is sent are available. A final helpful tool is a free Android app called Morse Code. A version for Windows 10 and above is also available, but I did not find an iOS Version. This is a translator and learning tool. It allows you to select any letters, numbers or special characters to practice copying using Farnsworth timing. After practicing, the results show total practice time, % answered correctly, number answered correctly and incorrectly overall and for each character, the average time to copy all characters and each character individually. These statistics are very helpful to determine which characters are problematic and need further practice. Each session is retained in the history list, so you can also track your progress over time. The Android app is great to practice whenever you have a few free minutes.

I have been hunting CW POTA and DX stations using my straight key. Many POTA activators operate at 12 – 20 WPM. Since I have not learned all of the letters, I have a decoder running in the background in case I get stuck. The primary area where you might get stuck is on the activator’s callsign. The exchange itself is very straightforward and the POTA spotting page provides the activators callsign, park reference, etc. Using “AB5CD” as the activator’s call sign, a typical QSO goes like this:

AB5CD: CQ CQ CQ POTA AB5CD AB5CD K

N5JGE: N5JGE

AB5CD: N5JGE GM UR 55N 55N MS MS

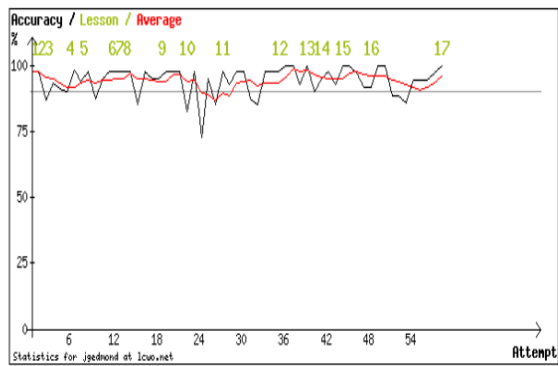
N5JGE: R R TU UR 5NN 5NN TX TX BK

AB5CD: BK TU de AB5CD 73 dit dit

N5JGE: dit dit

As you can see, the actual amount of sending by the hunter is basically your callsign, a signal report and your state. Most activators are not interested in rag-chewing and keep QSOs short and close to this script. A DX station is even less interested in rag-chewing, and the exchange is usually even briefer. My goal is to become proficient enough to copy up to 20WPM and to be able to complete CW POTA activations (copy callsigns better). There are many opportunities for operators at that speed range. Besides POTA / SOTA, the [K1USN Radio Club](#) runs a one-hour slow-speed CW “contest” twice a week. This is another great way to get slow-speed on-air practice as you learn.

Koch CW course statistics



(Note: Attempts with zero accuracy are not considered for averaging.) Show only results from lesson: All

Lessons, Accuracy

Lesson	Attempts	Accuracy			Time spent (days)
		min.	max.	avg	
1	1	97.8	97.8	97.8	1
2	1	97.8	97.8	97.8	1
3	3	86.7	93.4	90.4	1
4	2	90	98	94	1
5	4	87.5	97.5	93.5	1
6	1	97.5	97.5	97.5	1
7	1	97.8	97.8	97.8	1
8	5	85	97.5	94.5	1
9	3	95	97.5	96.7	1
10	5	72.5	97.5	89	1
11	8	85	97.5	92.5	1
12	4	97.5	100	98.8	1
13	2	92.5	100	96.3	1
14	3	90	97.5	94.2	1
15	4	92.5	100	97.4	2
16	10	85.8	100	92.9	2
17	2	97.2	100	98.6	1



Excerpt from Jack, W5TFB's Book

The next excerpt from Jack's book will be coming soon.

“And a Good Time was had by All.....” Here are the pictures from the Christmas dinner.



## Upcoming Events



- Daily** DFW Early Traffic Net (NTS) at 6:30pm 146.88 – PL 110.9Hz
- Daily** DFW Late Traffic Net (NTS) at 10:30pm 146.72 – PL 110.9Hz
- Daily** Texas CW Traffic Net at 7:00pm on 3541 KHz and at 10pm on 3541 KHz [www.k6jt.com](http://www.k6jt.com)
- Tuesdays** Collins ARC Drive Home Net. 442.8 (+5) MHz, PL=110.9 Hz (K5QHD repeater), 5:30-6:00pm (no net 4<sup>th</sup> Tuesday.)
- 1<sup>st</sup> Wednesday** Richardson Emergency Siren Test. At noon using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz.
- 2<sup>nd</sup> Wednesday** ARES North Texas HF Net Every month—3860 KHz at 8:30 pm—9:30pm

### JANUARY

- 1** **Straight Key Night** This event is dedicated to celebrating our CW heritage. Participants are encouraged to get on the air and simply make enjoyable, conversational CW QSOs. The use of straight keys or bugs to send CW is preferred. No points are scored and all participants are winners. Operation is from 0000 through 2359 UTC. Details at [www.arrl.org/straight-key-night](http://www.arrl.org/straight-key-night).
- 6-7** **RTTY Roundup** Objective: Amateurs worldwide contact and exchange QSO information with other amateurs using digital modes on 80, 40, 20, 15, and 10 meter bands. Any station may work any other station. Stations may be worked once per band, regardless of mode. Operation is from 1800 Saturday thru 2400 UTC Sunday. Details at <http://www.arrl.org/rtty-roundup>
- 20-22** **JANUARY VHF** Objective: For amateurs in the US and Canada to work as many stations in as many 2 x 1 degree Maidenhead grid squares as possible using authorized frequencies above 50 MHz. Stations outside the US & Canada may only work stations in the US and Canada. Operation is from 1900 Saturday thru 0359 UTC Monday. Details at <http://www.arrl.org/january-vhf>

### FEBRUARY

- 17-18** **International DX—CW** Objective: To encourage W/VE stations to expand knowledge of DX propagation on the HF and MF bands, improve operating skills, and improve station capability by creating a competition. W/VE amateurs: Work as many DX stations in as many DXCC entities as possible on the 160, 80, 40, 20, 15, and 10 meter bands. DX stations: Work as many W/VE stations in as many of the 48 contiguous states and provinces as possible. The event runs 48 hours, from 0000 UTC Saturday through 2359 UTC. Details at <http://www.arrl.org/arrl-dx>.

Need another Badge or Coffee Mug?



Order from The Sign Man of Baton Rouge at:  
<https://www.thesignman.com/clubs/collinsarccart.html>

Join Us On Tuesdays  
for the **Collins ARC**  
**Drive Home Net**  
**5:30pm 442.7 MHz**  
**+5MHz, PL=110.9Hz**  
**(No Nets on Meeting Nights)**

Logs now available on [n5cxx.us](http://n5cxx.us) website



### The Amateur's Code

by Paul M. Segal, W9EEA (1928)

The Radio Amateur is:

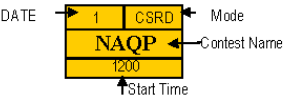
- CONSIDERATE** - never knowingly operating in such a way as to lessen the pleasure of others.
- LOYAL** - offering loyalty, encouragement and support to other amateurs, local clubs and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
- PROGRESSIVE** - with knowledge abreast of science, a well built and efficient station, and operation beyond reproach.
- FRIENDLY** - with slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation 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** - with station and skill always ready for service to country and community



CDXA Periodic Table of Contests - 2023

January	February	March	April	May	June	July	August	September	October	November	December
7   R RTTY Roundup 1800	4   CSRD VT QSO Party 0000	4   S ARRL DX - SSB 0000	1   CSRD LA QSO Party 1400	6   CSRD 7th Area QSO Party 1300	3   CSRD KY QSO Party 1300	1   CS RAC Canada Day 0000	5   C NAQP - CW 1800	2   C CWops Open 0000	7   CS CA QSO Party 1800	4   C Sweepstakes CW 2100	2   CS ARRL - 160M 2200
14   C NAQP - CW 1800	4   CSRD MN QSO Party 1400	11   CSRD OK QSO Party 1800	TBD   CSRD MS QSO Party TBD	6   CS IN QSO Party 1800	3   D ARRL - INT. Digi 1800	IARU 1200	WAE DX - CW 0000	CO QSO Party 1300	Makrothen - RTTY 0000	WAE DX - RTTY 0000	FT Roundup 1800
21   S NAQP - SSB 1800	4   CSRD BC QSO Party 1800	11   C Stew Perry TBC 1500	1   CSRD MO QSO Party 1400	6   CSRD DE QSO Party 1700	10   CSRD ARRL - VHF 1800	16   CSRD CQWW - VHF 1800	12   CSRD MDC QSO Party 1400	3   CSRD TN QSO Party 1800	14   CSRD NV QSO Party 0300	Sweepstakes SSB 2100	ARRL - 10M 0000
21   CSRD ARRL - VHF 1900	5   C NA Sprint - CW 0	11   CSRD ID QSO Party 1900	4   S NA Sprint - SSB 0000	6   CSRD New England QSO Party 2000	17   C Stew Perry TBC 1500	15   R NAQP - RTTY 1800	19   S NAQP - SSB 1800	9   S WAE DX - SSB 0000	14   CSRD AZ QSO Party 1500	25   C CQWW - CW 0000	17   CS RAC Winter 0000
27   C CQ - 160M CW 2200	11   R CQWW WPX - RTTY 0000	12   R NA Sprint - RTTY 0	8   CSRD NM QSO Party 1400	20   CSRD AR QSO Party 1400	17   CSRD WV QSO Party 1600	29   CS RSGB IOTA 1200	26   CSRD HI QSO Party 0400	9   CSRD ARRL - VHF 1800	14   CSRD PA QSO Party 1800	All K1USN, ICWC & CWA 1800	23   C Stew Perry TBC 1900
28   R BARTG RTTY 1200	18   C ARRL DX - CW 0000	12   CSRD WI QSO Party 1800	8   CS GA QSO Party 0000	27   C CQWW WPX - CW 0000	All K1USN, ICWC & CWA 1800	All K1USN, ICWC & CWA 1200	26   D WW Digi DX 1200	TBD   CP AL QSO Party 1800	14   CSRD SD QSO Party 1800		All K1USN, ICWC & CWA 1800
All K1USN, ICWC & CWA 2200	24   S CQ - 160M SSB 2200	18   R BARTG RTTY 0200	TBD   CSRD ND QSO Party TBD	All K1USN, ICWC & CWA C			26   CSRD KS QSO Party 1400	10   C NA Sprint - CW 0000	21   CSRD NY QSO Party 1400		
	25   CSRD SC QSO Party 1500	25   S CQWW WPX - SSB 0000	15   R CQMM DX 0900				27   CS OH QSO Party 1600	TBD   CSRD IA QSO Party 1400	21   CS Worked All Germany 1500		
	25   R NAQP - RTTY 1800	All K1USN, ICWC & CWA C	15   CS MI QSO Party 1600				All K1USN, ICWC & CWA C	16   CSRD NH QSO Party 1600	21   C Stew Perry TBC 1500		
	26   CSRD NC QSO Party 1500		15   CS ON QSO Party 1800					16   CSRD TX QSO Party 1400	22   CSRD IL QSO Party 1700		
	All K1USN, ICWC & CWA C		29   CS FL QSO Party 1800					16   CS NJ QSO Party 1800	28   S CQWW - SSB 0000		
			All K1USN, ICWC & CWA C					16   CSRD WA Salmon Run 1800	All K1USN, ICWC & CWA C		
								17   R NA Sprint - RTTY 0000			
								23   R CQWW - RTTY 0000			
								23   CS ME QSO 1200			
								C All K1USN, C			

LEGEND  
 GOLD = Major Contest = 10 points  
 Blue = QSO Party = 7 points  
 Pink = DX Contest = 5 points  
 C = CW      S = SSB  
 R = RTTY      D = Digital





Richardson, Texas  
[www.N5CXX.us](http://www.N5CXX.us)

**Mail Station 461-290**  
**PO Box 830766**  
**Richardson, TX 75083-0766**

**TO:**



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[www.N5CXX.us](http://www.N5CXX.us)

**CLUB STATION**  
 (972) 705-1349

**N5CXX REPEATER**  
 441.875 MHz +5 MHz Input  
 131.8 Hz PL - RX and TX

**N5CXX-1 PACKET BBS COL Node**  
 145.05 MHz

**N5CXX-N1, NRCXX-N2 & N5CXX-N3 HSMM-MESHNET Nodes 2.4 GHz**

**Membership Meeting**  
 Tuesday 23 January 2024 5:30 PM  
 THE MEETING WILL BE AT  
**Woodcreek Church Richardson TX**

**NEXT SIGNALS INPUTS DEADLINE:**  
**→→→ 12 January 2024 ←←←**