



RCA Amateur Radio Club Indianapolis, IN

ARRL Affiliated Club

www.w9rca.org

DECEMBER 2024

MONTHLY NEWSLETTER

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE TUESDAY, DECEMBER 10, 6:30 PM AT NORTH SIDE EVENTS, FORMERLY THE KNIGHTS OF COLUMBUS, 2100 EAST 71ST, INDIANAPOLIS, IN

RCA ARC NEWS

NOVEMBER MEETING SUMMARY – Thanks to all who attended the November meeting. We discussed the present state of the ARRL recovery from the ransom attack in May. Field Day results were discussed along with the cost of doing an event like Indy United has been doing the last few years. Great results but expensive! Our Club will likely participate next year. K9RU will provide his photos of this year's FD to be added to our web site. The 88.5 Hz tone transmitted by the '88 repeater has been intermittent. We need to fix this. Sunspot numbers are high! W9ZB and AF9A participated in the recent frequency measuring test (FMT). Both did well.

AMATEUR RADIO LICENSE TEST SESSION

Date: Saturday, Dec. 14 , 2024
Time: Starting at Noon, **by appointment only.**
Location: Salvation Army EDS Training Facility, 4020 Georgetown Rd
Indianapolis, IN 46254-2407
Contact: Jim Rinehart (317) 721-1458
Email: testing@indyradioclub.org
Required: FCC FRN and a completed NCVET 605 license application form.
ARRL Test Fee: \$15

Laurel VEC test sessions: <https://www.laurelvec.com/?pg=exams>

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

Salvation Army Open Net, Thurs. 7PM, W9RCA repeater, 146.88 MHz, tone 88.5 Hz
Dec 6-8 **ARRL 160-Meter Contest** <http://www.arrl.org/160-meter>
Dec 11 VHF-UHF FT8 Activity Contest <http://www.ft8activity.eu/index.php/en/>
Dec 14-15 **ARRL 10-Meter Contest** <http://www.arrl.org/10-meter>
Dec 22 **ARRL Rookie Roundup, CW** <http://www.arrl.org/rookie-roundup>
Jan 4-5 ARRL RTTY Roundup
Jan 4 ARRL Kids Day

WA7BNM expanded contest calendar, <https://www.contestcalendar.com/>

Visit the **ARRL Special Event Stations database** at www.arrl.org/special-event-station to find other on-the-air events and commemorations.

Hamfest or Convention: www.arrl.org/hamfests

Find a license exam in your area: www.arrl.org/exam

ARRL Home: www.arrl.org

THE CQ WW IS THE LARGEST AMATEUR RADIO COMPETITION IN THE WORLD

CQ Magazine World Wide (CQ WW): Over 35,000 participants take to the airwaves on the last weekend of October (SSB) and November (CW) with the goal of making as many contacts with as many different DXCC entities and CQ Zones as possible.



Most of us in the RCA ARC are not contesters. Leroy, WA4OTD, is an exception. He joined twelve other CW contesters at K9LZJ's "Barn" contest station in Greenfield, IN, November 23-24 for this year's CQ WW, operating as W9VW. Final results haven't been posted yet but they think they have a good chance of being 5th or 6th in the USA M/S class.

25TH ANNUAL SKYWARN RECOGNITION DAY DECEMBER 7, 2024

SKYWARN Recognition Day is December 7, 2024. The annual event is celebrating its 25th anniversary. SRD was established in 1999 by the National Weather Service and ARRL® to commemorate the contributions of SKYWARN volunteers. Using amateur radio and other means of communication, SKYWARN spotters provide real time ground truth to NWS offices. The ham-volunteers can also provide vital communications between NWS and local emergency management officials when other means go down.

In a video posted to the SRD web page, National Weather Service Director Ken Graham, WX4KEG, said the information ham radio operators and other SKYWARN volunteers provide is critical. "I, along with the entire National Weather Service, want to acknowledge and thank you for your invaluable service to the communities we serve."

There will be a SRD special event from 0000 – 2359 UTC on the day. The objective is for all amateur stations to exchange QSO information with as many Amateur Radio SKYWARN Spotters and National Weather Service Stations as possible on the 80, 40, 20, 15, 10, 6, 2-meter and 70-centimeter bands.

ARRL will be on the air during the event from the ARRL Radio Laboratory station, W1HQ, using the call sign WX1AW. ARRL Public Relations and Outreach Manager Sierra Harrop, W5DX, said SRD is a great opportunity to welcome non-ham SKYWARN volunteers to explore amateur radio. "Storm spotting was my original draw into ham radio. I watched a large tornado tear up my community on May 3, 1999, and was listening via my mom's 2-meter mobile radio to spotter reports being relayed to the NWS Norman, Oklahoma, office. I knew I wanted to be a part of that and within months I was licensed. Amateur radio was my

path into that community service and has been the hobby of a lifetime ever since,” she said.

ARRL has a web page to help those interested with getting licensed. Find details at <https://www.arrl.org/getting-licensed>. Spotters are encouraged to register for SRD at <https://www.weather.gov/crh/skywarnrecognition>. There will be participation certificates available after the event. --ARRL

ARRL 2023 ANNUAL REPORT NOW AVAILABLE

[ARRL](#)® The National Association for Amateur Radio® has published its [2023 Annual Report](#), which includes a summary of the year’s program activities, along with the 2023 and 2022 financial statements and an independent auditor’s report.

ARRL marked 2023 as the Year of the Volunteers, recognizing the nearly 57,000 volunteers who contribute to supporting the organization and the wider amateur radio community. “The future of amateur radio rests on the shoulders of volunteers, and every one of us can be a volunteer,” said ARRL President Rick Roderick, K5UR, in his message in the annual report. The report highlights the involvement of volunteers across program areas, including ARRL Volunteer Examiners and Amateur Radio Emergency Service® (ARES®) volunteers.

“It seems right for an organization like ours, which is fueled by volunteers, to take a moment to recognize the countless individuals who share their time, talent, and treasure with ARRL to advance the hobby we all love,” said ARRL Chief Executive Officer David A. Minster, NA2AA, in his included report. Minster also noted the celebration of the ARRL Foundation’s 50 years in 2023. Its work has benefited the charitable, educational and scientific efforts of the amateur radio community. Minster recognized the generous contributions from Amateur Radio Digital Communications (ARDC), which renewed commitments amounting to more than \$2.1 million to support club grants, education programs, and scholarships. “This represents the largest single commitment ever for our organizations,” said Minster.

Also included in the annual report is ARRL’s Report to America, which references the involvement of amateur radio operators during natural disasters that occurred in 2023, in addition to formal partnership agreements with served agencies including the Federal Emergency Management Agency (FEMA) and the Federal Communications Commission (FCC). In May 2023, ARRL entered into an updated Memorandum of Agreement (MOA) with FEMA, to enhance cooperation between ARES® and FEMA in providing disaster communications -- When All Else Fails®.

The ARRL *2023 Annual Report* is available for download at www.arrl.org/annual-reports.

THE RCA 21CT55

Posted to Facebook Dec. 1, 2024 by Dave Arland: 70 years ago today, RCA began production of its second color TV – just a few months after launching its first all-electronic color TV model and a modest amount color programming on the RCA-owned NBC TV network.

While the famous RCA CT-100 gets all of the attention as RCA’s first color set (about 4,400 were made), less well known is the first set’s bigger brother. The 21CT55 started down the production line in Bloomington, Indiana on Wednesday, December 1, 1954. The picture tube produces a 21-inch color image, a 40% larger screen than the first RCA model that had started production just eight months earlier.

At the beginning, a color TV itself was an expensive status symbol. In today’s dollars, the new RCA 21” color set was astronomically expensive at \$10,400. During the entire 1954 year, NBC only aired 68 hours of color shows (a little more than one hour of color TV a week transmitted by local stations equipped for color.)

The 21” color TV has 2,070 parts that came from some 600 suppliers. And everything was

assembled at RCA's Bloomington, Indiana color TV manufacturing plant that would build color sets for another 44 years.

Today, only 34 of the 21" RCA color sets from 1954-55 are listed in the hands of collectors and museums on a roster maintained by Ohio's Early TV Museum. That represents only a fraction of the estimated 3,000 that were made. About 1% are known survive (although some are not listed.) By contrast, over 170 of the first RCA color sets are still around. So, the second RCA color TV is even rarer than RCA's first set. In fact, a complete Gutenberg Bible is easier to find intact than a 21CT55 RCA color TV!

Unlike the first color TV model, the 21-inch set has red, green, and blue phosphor dots deposited on the faceplate of the picture tube – which is how color TV tubes would be made for the next 50 years (until plasma and LCD flat screens took over.)

Inside, the 21CT55 is very similar to the first RCA color TV with a heavy electronic chassis that was "beefed up" to handle the bigger picture tube. 36 radio tubes are inside the set. And a second small chassis is also inside, for fine-tuning the convergence of electron beams that light up the red, blue, and green phosphors in the picture tube. The set also consumes an enormous amount of energy – more than 520 watts.

Restoration of this 21CT55 took over three years, since I acquired it from vintage TV collector Blake Hinkle, who found it on the east coast. This set had come from another collector who found it at a Raytheon factory, and the chassis had been modified at some point to power a rectangular picture tube (which became standard in the late 1960's for color TV sets.) While the round picture tube in the set was good, the electronic chassis was not functional. Raytheon had, at one time, been a color TV picture tube supplier.

I'm grateful to Greg Ziesemer at Antiquity Furniture Restoration in Indianapolis for stripping and beautifully restoring the mahogany cabinet (leaving the picture tube intact), erasing decades of scrapes and scratches on the finish. Greg did his usual miracle work!



Since he had completed a previous restoration for his own collection, Wisconsin electronics restoration expert Tom Carlson knew the details of the 21CT55 and how to tackle a re-assembly and restoration of the very heavy two-part chassis. Over the course of several months, he was able to get it working again and produce a picture. Tom also knew someone who had the proper 21CT55 channel changing knob, which was missing on my set. Other collectors helped me find the correct brightness and volume control knobs, and "pencil box" metal control box that was missing from the front of the set.

Gammon's Machine Shop on the east side of Indianapolis tackled the repair of the perforated metal rear cabinet back (which had been mutilated by Raytheon), drilled out new holes in a vintage TV front control box that came from another set, and made new brass ferules to cap the set's mid-century feet (all but one had gone missing.)

Once the chassis was assembled back in the cabinet, I turned to former RCA colleague Ed Milbourn for help with troubleshooting and with tricky degaussing of the tube and electronic convergence adjustments. Everything finally came together a few days ago.

Beginning in 1954, RCA would almost singlehandedly carry the color TV industry for more than a decade. The three broadcast TV networks would take until the fall of 1966 to finally

broadcast all prime time programming “in living color.”

But now, even 70 years after it first rolled off the Bloomington assembly line, it's amazing to see what happens when the RCA 21CT55 is powered up and connected to an analog video source. The picture is nothing short of astounding! --Dave Arland

THE ARRL BOARD OF DIRECTORS APPROVED THE ESTABLISHMENT OF A COMMITTEE TO ASSURE THE EXISTENCE OF A SET OF ETHICAL STANDARDS AND GUIDELINES

At the 2024 ARRL Annual Meeting held in January, the Board of Directors unanimously voted to approve the establishment of a committee to assure the existence of a set of ethical standards and guidelines for Board Members as called for in ARRL By-Law 42. In addition, the committee was tasked to review By-Laws 42 (Ethics and Elections Committee) and 46 (Conflict of Interest Policy) for possible revision.

I was selected by President Rick Roderick, K5UR, to chair the ARRL Special Committee on By-Law 46 Revisions. I am writing to share an update on our efforts. The committee scrutinized By-Laws 42 and 46 for revisions, and incorporated feedback from legal counsel. After diligent work, the committee has finalized its recommendations and, earlier today, presented its report and proposed By-Law revisions at a meeting of the Committee. All of the ARRL Board Members were invited to participate in that meeting.

All of our committee's work, including our report and documents pertaining to proposed By-Law revisions, is readily available for your review at www.arrl.org/by-laws-update. I encourage you to consider reviewing the documents to help develop your own perspective on these issues.

Why This Matters: As ARRL is a federally recognized 501(c)(3) nonprofit corporation, it is imperative that our governance structure meets the legal and ethical requirements of a well-governed organization. We will reinforce trust and accountability with our members by establishing ethical standards and an independent adjudication process.

If you have any questions or concerns, please contact your Division Director. --Rod Stafford, W6ROD, Chair of the Special Committee on Bylaw 46, ARRL International Affairs Vice President

2024 ARRL FIELD DAY RESULTS PUBLISHED

Results are published, and the numbers are in. They paint a picture of a very active 2024 ARRL Field Day. Nearly 1.3 million contacts were reported during the 24-hour event. That is up from 2023's 1.25 million contacts. That's likely indicative of the continued rise of Solar Cycle 25 leading up to the event, but more people also participated this year.

Entries were received from all 85 ARRL and Radio Amateurs of Canada (RAC) sections, as well as from 27 different countries from outside the US and Canada. “It is encouraging to see a rise in participation year to year,” said ARRL Contest Program Manager Paul Bourque, N1SFE. “ARRL Field Day is amateur radio's premier event, and the hams turned out for it.”

Class A, B, and C scores are included in the 2024 QST results article. The scores for Class D, E and F stations and club aggregate scores are listed in the 2024 line scores on the web, as well in the digital edition of QST.

Results are available now on the ARRL Field Day website at <https://field-day.arrl.org/fdresults.php> and in the December issue of QST.

TRUMP APPOINTS A NEW HEAD OF THE FCC WITH PLANS TO TIGHTEN REGULATIONS ON BIG TECH

In a move signaling a potential shift in media regulation policy, President-elect Donald Trump has appointed Brendan Carr as the new chairman of the Federal Communications Commission (FCC). The announcement came on Sunday, marking a significant choice for an agency that oversees the nation's communications sectors including radio, television, and cable.

Trump praised Carr, describing him as a "warrior for Free Speech," during a press statement. "Commissioner Carr has fought against the regulatory lawfare that has stifled Americans' freedoms and held back our economy," Trump said. He emphasized that Carr's leadership would aim to dismantle what he described as an overburdening regulatory environment, thereby aiding America's job creators and innovators, particularly in rural areas.

Carr, who has been serving as the top Republican commissioner at the FCC, responded to his appointment via a post on X. "Thank you, President Trump! I am humbled and honored to serve as Chairman of the FCC. Now we get to work," he wrote, signaling his readiness to take on his new role. Efforts to reach Carr for further comments were unsuccessful.

Carr's appointment comes with a backdrop of his involvement in Project 2025, a conservative initiative aimed at reshaping federal governance. In his contribution to the project, Carr outlined his vision for the FCC, which includes tightening regulations on Big Tech, enhancing national security, promoting economic growth, and ensuring accountability within the FCC.

One of his notable stances was on the regulation of social media platforms. Carr has advocated for a reevaluation of Section 230 of the Communications Decency Act, suggesting that internet companies should not have unchecked power to censor content while enjoying legal protections. His views align with broader conservative critiques of Big Tech's content moderation practices.

NCVEC QUESTION POOL COMMITTEE REMOVES TWO POOL QUESTIONS FROM USE

The National Conference of Volunteer Examiner Coordinators ([NCVEC](#)) Question Pool Committee ([QPC](#)) has removed one Extra Class pool question and one General Class pool question from use. Both Extra pool question **E2A13** and General pool question **G8C01** have been deleted from use on examinations as the two questions each have more than one correct answer. The deleted questions must be removed from examinations as soon as possible.

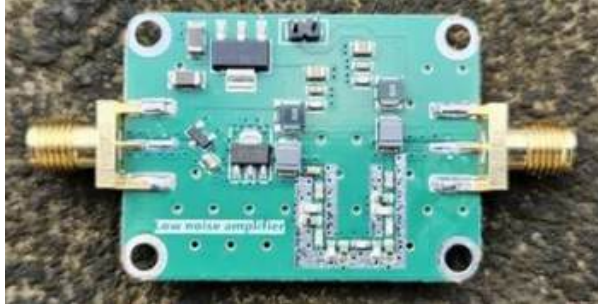
Updated question pool files, including the errata and new information, have been posted on the NCVEC Extra Class question pool web page at <https://www.ncvec.org/index.php/2024-2028-extra-class-question-pool-release>. The current Element 4 Extra question pool became effective on July 1, 2024, and it is valid through June 30, 2028.

Updated General Class question pool files, also including the errata and new information, have been posted on the NCVEC General Class question pool web page at <https://www.ncvec.org/index.php/2023-2027-general-question-pool-release>. The current Element 3 General question pool became effective on July 1, 2023, and it is valid through June 30, 2027.

The [ARRL VEC](#) advises the community to regularly check the NCVEC website at <http://www.ncvec.org/> for updates to the question pools, which may include errata and withdrawn questions. --ARRL

TECHNICAL

If you're planning on working satellites or doing any sort of RF work where the signal lives down in the dirt, you're going to need a low-noise amplifier. That's typically not a problem, as the market is littered with dozens of cheap options that can be delivered in a day or two — you just pay your money and get to work. But is there a case to be made for rolling your own LNA?



[Salil, aka Nuclearrambo] thinks so, and he did a nice job [showing us how it's done](#). The first step, as always, is to define your specs, which for [Salil] were pretty modest: a low noise figure, moderate gain, and good linearity. He also wanted a bandpass filter for the 2-meter amateur radio band and for weather satellite downlinks, and a bias-tee to power the LNA over the coax feedline. The blog post has a detailed discussion of the electrical design, plus some good tips on PCB design for RF applications. We also found the discussion on bias-tee design helpful, especially for anyone who has ever struggled with the idea that RF and DC can get along together on a single piece of coax. [Part 2](#) concentrates on testing the LNA, mostly using hobbyist-grade test gear like the [NanoVNA](#) and [tiny SA](#) spectrum analyzer. [Salil]'s tests showed the LNA lived up to the design specs and more, making it more than ready to put to work with an RTL-SDR.

Was this more work than buying an LNA? Absolutely, and probably with the same results. But then again, what's to learn by just getting a pre-built module in the mail? Blog – Hackaday [Read More](#)

SHORTS

BEING AT THE PEAK OF THE SUNSPOT CYCLE, 10 METERS HAS BEEN QUITE PRODUCTIVE FOR LONG-DISTANCE CONTACTS RECENTLY, WHICH SHOULD FAVOR PARTICIPATION IN THE [ARRL 10-Meter Contest](#) . In addition to US states and Canadian provinces and territories (plus Labrador), Mexican states are multipliers. website: <http://www.bigskyspaces.com/w7gj/6mTable.htm>.

2025 ARRL FOUNDATION SCHOLARSHIP PROGRAM ACCEPTING APPLICATIONS THROUGH JAN 6, 2025 The 2025 ARRL Foundation Scholarship Program will begin accepting applications on October 30, 2024. Applications will be accepted through **January 6, 2025**.

More than 100 scholarships ranging from \$500 to \$25,000 will be awarded. All applicants must be active, FCC-licensed amateur radio operators.

Information, along with the link to the online application, can be found on ARRL's website: <https://www.arrl.org/scholarship-program>. --ARRL

HOW TO LET KIDS TALK WITH SANTA OVER HAM RADIO THIS HOLIDAY SEASON
Santa Claus will be on the amateur radio airwaves again this year.

The 3.916 Santa Net will be on the air every night at 7:00 PM CST from November 29 through December 24. Reserve a spot with Santa by making a pre-net check in. You can check in each night starting at 6:30 PM CST online at www.CQSanta.com.

Santa and Mrs. Claus will also be on the air, together, thanks to special arrangements with the [Cowley \(KS\) County Amateur Radio Club](#). They will be on the air on the 147.000 repeater and the Sunflower Net system, between 10 a.m. and noon on November 30 and beginning at 10 a.m. on December 14 and 21. In addition to the local repeater, the [Sunflower Net](#) offers connection options to Allstar, DMR, Dstar, Echolink, Fusion, Hamshack Hotline, M17, and P25. The club is also setting up a radio link at the local library to talk to Santa.

Also, for the 4th year, Santa has sent Elf Chucky and his team of amateur radio operators to northern Colorado, to help make sure children of all ages can talk to Santa on station NØP from the North Pole. Thanks to the [Longmont Amateur Radio Club](#) and the [Northern Colorado Amateur Radio Club](#), children can get into the holiday spirit by talking to Santa on the radio. Both are ARRL Affiliated Clubs. Get the details on that operation at <https://w0eno.org/santa/>.

Merry Christmas, Happy Holidays!

THANKS FOR READING

THE RCA ARC MONTHLY NEWSLETTER IS COMPILED AND EDITED BY JIM RINEHART, K9RU AND JIM KEETH, AF9A. ALL MATERIAL CONTAINED HEREIN IS OBTAINED FROM THE SOURCES CREDITED AND EDITED FOR THIS NEWSLETTER.
