THE SIGNAL



NEWSLETTER OF THE
BELLA VISTA AREA RADIO CLUB

Arkansas' Largest Amateur Radio Club

- October Meeting:
  NW Arkansas Skywarn Link System
- ADXA Annual Conference
- BVRC Member Inducted Into
  QRP Hall of Fame
- BVRC Bingo Award Reminder
- Announcing the 2026 BVRC Santa Net
- W5AEN Across the Pond
- Experimenter's Corner –
  Part 2-Portable Oscilloscope/FD Tower
- From Liberty Bells to Radio Waves
- Giving Thanks on the Air
- Famous Radio Amateurs –
  Clarence C. Moore

NOVEMBER 2026

Monthly Meetings: 1st Thursdays @ 7 p.m.
Arkansas Law Enforcement Training Academy (ALETA)
3424 S. Downum Road, Springdale AR

(HAM 101 Workshop for Newcomers @ 6pm preceding meeting)

Club Calls: N5BVA / W5NX

(Repeater Nets) (Contesting, Operating, Special Events)

BVRC Twin Linked Repeaters:

Bella Vista: 147.255 +600 khz offset, pl 162.2

Springdale: 444.100 + 5 MHz offset, pl 162.2

Website: www.bellavistaradioclub.org



WEEKLY NETS



Mondays @ 7 pm
WX5NAS Skywarn Link System

Bentonville – 146.865, -offset, pl 103.5
Springdale – 147.315, +offset, pl 97.4
Fayetteville – 147.315, +offset, pl 110.9
Huntsville – 443.625, +5 MHz offset, pl 97.4
Green Forest – 145.310, -offset, pl 103.5



Wednesdays @ 7 pm on the
BVRC Dual Linked Repeaters

N5BVA/Bella Vista
147.255, +offset, pl 162.2

N5BVA/Springdale
444.100, +5 MHz, pl 162.2



Sunday Afternoons
4:00 pm during CST
4:30 pm during CDT

3.830 MHz



Fridays @ 7 pm on the
BVRC Dual Linked Repeaters

N5BVA/Bella Vista
147.255, +offset, pl 162.2

N5BVA/Springdale
444.100, +5 MHz, pl 162.2



1st & 3rd Tuesdays @ 7:00 pm
WX5NAS Skywarn Link System

Bentonville – 146.865, -offset, pl 103.5
Springdale – 147.315, +offset, pl 97.4
Fayetteville – 147.315, +offset, pl 110.9
Huntsville – 443.625, +5 MHz offset, pl 97.4
Green Forest – 145.310, -offset, pl 103.5



2nd & 4th Tuesdays @ 7:00 pm
WX5NAS Skywarn Link System

Bentonville – 146.865, -offset, pl 103.5
Springdale – 147.315, +offset, pl 97.4
Fayetteville – 147.315, +offset, pl 110.9
Huntsville – 443.625, +5 MHz offset, pl 97.4
Green Forest – 145.310, -offset, pl 103.5

NEXT BVRC MONTHLY MEETING

THURSDAY, NOVEMBER 5, 2026 @ 7PM
ARKANSAS LAW ENFORCEMENT TRAINING ACADEMY
3424 S. DOWNUM ROAD
SPRINGDALE, AR

November Meeting Information

HAM 101 Workshop, 6pm preceding monthly meeting – Join us for the November HAM 101 Workshop, featuring BVRC's Tom Northfell – W5XNA, as our presenter. Tom is a Past President of BVRC and currently serves as the club's Public Information Officer and Membership Coordinator. He always has an interesting and informative program in store for both newcomers and veteran operators alike, and we're looking forward to another great presentation. For this month's Workshop, Tom will be speaking on "QSL Cards – Geography and History Lessons via the U.S. Mail".

While electronic confirmations have become increasingly prevalent in today's amateur radio world, QSL cards remain a popular and enjoyable part of the hobby. In this workshop, Tom will explore the use of QSL cards and share the fun and rewarding experiences they can provide.

BVRC November meeting, 7pm – BVRC is pleased to welcome veteran ham and longtime club member Murray Harris – W5XH, as the featured speaker for our November program. Murray began his amateur radio journey in 1959 as a Novice with the call sign KN5WLY. While well known as the club's satellite expert and a great speaker on working amateur satellites, Murray is also highly knowledgeable in many other areas of our hobby, with one of those areas being antennas.

This month, he'll be presenting "Vertical Antennas – The Unsung Heroes of Amateur Radio", with a program packed full of practical information on verticals and how they can be applied in a variety of situations where space is limited, including HOAs, POAs, and other challenging installations. Don't miss this excellent opportunity to learn from Murray and pick up some valuable ideas for your own station!

SEE YOU THEN!

BOARD MEMBERS

PRESIDENT
Jan Hagan - WB5JAN
wb5jan@arrl.net

VICE PRESIDENT
Kathy Bromley - WQ5T
wq5t@arrl.net

SECRETARY
Sharron Edmondson - KC5SKY
grannysharr@gmail.com

TREASURER
Marc Whittlesey - WØKYZ
almarc11@yahoo.com

TECHNICAL OFFICER
Jon Williams - K5DVT
opk5dvt@gmail.com

N5BVA TRUSTEE
Roger Dickey - KJ4QIS
dickeyr@gmail.com

MEMBER AT LARGE & PUBLIC INFORMATION OFFICER
Tom Northfell - W5XNA
w5xna@arrl.net

APPOINTED OFFICERS

EDUCATION & ELMER 911 COMMITTEE
Chair: Vinson Carter - WV5C
vinsoncarter@gmail.com

NETS COMMITTEE
Chair: Stephen Ponder - N5ZE
stponder@gmail.com

MEMBERSHIP COMMITTEE
Chair: Tom Northfell - W5XNA
w5xna@arrl.net

SOCIAL MEDIA & COMMUNITY OUTREACH COMMITTEE
Chair: Alex Smith - KI5EQK
ki5eqk@gmail.com

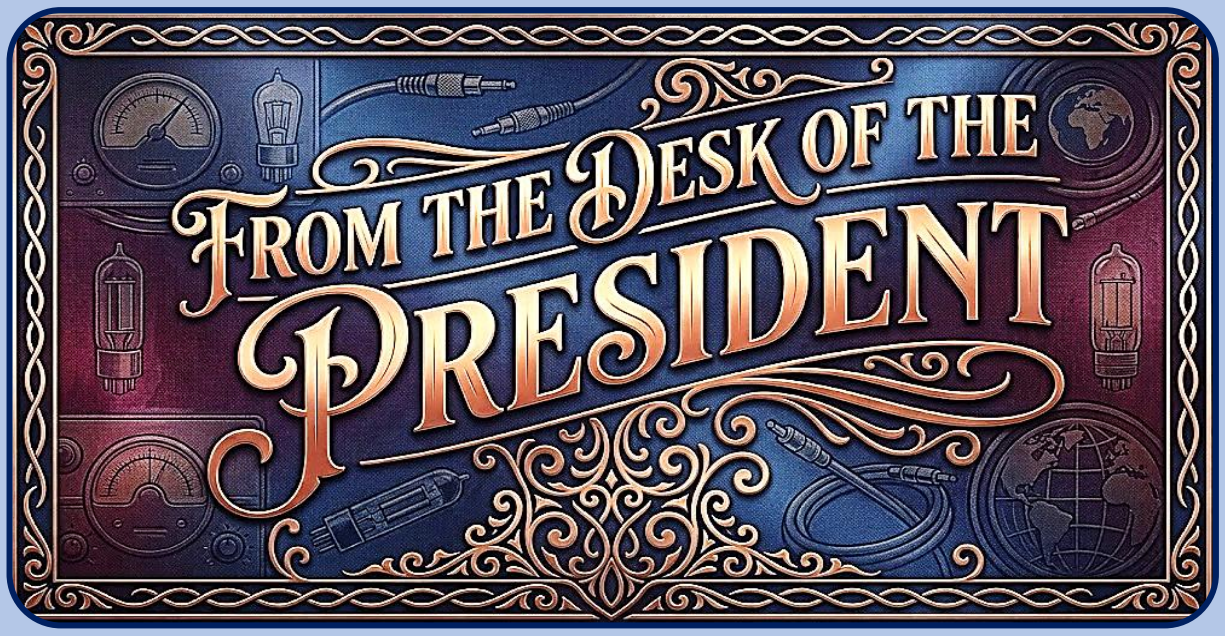
EMCOMM COMMITTEE
Chair: Drake Rush - KJ5MXM
drakerush1@hotmail.com

W5NX TRUSTEE & CLUB STATION MGR.
Jay Bromley - W5JAY
jayw5jay@outlook.com

WEBMASTER
Roger Dickey - KJ4QIS
dickeyr@gmail.com

VE TESTING COMMITTEE
Chair: Don Banta - K5DB
arsk5db@gmail.com

NEWSLETTER EDITOR
Don Banta - K5DB
arsk5db@gmail.com



It isn't just what we SAY it is, but, rather, what we DO every day!

Several years ago, the Bella Vista Radio Club began its meetings with all those present, members and guests, introducing themselves to those in attendance. Sometimes there were as many as twenty or more members in attendance and, although the introductions took some time, these introductions became an important feature of BVRC club meetings. These introductions were important because they underscored what BVRC was all about – providing a welcoming place for all those interested in the amateur radio hobby to find plenty of support, encouragement and followship among their fellow ham radio operators in the BVRC community.

Fast forward to our club's last couple of meetings in the spacious new ALETA meeting hall. We had over 80 members and guests present for these meetings, and we still took the time to make sure that everyone in attendance, members and guests, were introduced. Did this take more time than in past years – yes. Was it just as important today for our growing membership of new members and our guests to feel welcomed and valued – absolutely.

You see, an organization's culture is not defined by what it says it is, it is defined by what it does and the actions it takes. Bella Vista Radio Club strives to demonstrate our club's culture every day by what we do and the activities and programs that we develop to support our members no matter where they are along their amateur radio journey. Perhaps this was summed up best by the American Radio Relay League's article about BVRC in their national QST magazine where BVRC was profiled as one of twelve amateur radio clubs selected during ARRL's "Year of the Club" celebration. The following is how they featured our BVRC culture:

The BVRC Culture

The club touts what it calls the "BVRC culture," whose core values and key commitments include being welcoming, supportive, active, fun, and caring, as well as providing support to their members' growth in all facets of the amateur radio hobby. The club provides licensing classes, a multi-location Volunteer Examiner testing program, a dedicated HAM 101 net, and monthly HAM 101 workshops. Every meeting begins with each member introducing themselves, all part of the club's welcoming nature.

The club's goals are to promote and educate the local community about amateur radio, assist first responders, train and maintain the readiness of local operators, promote diverse activities within the amateur radio community, and maintain an active local amateur radio club and repeater system.

The Future

As the club continues to grow, President Jan Hagan is excited about its future, saying, "If our club stays true to our mission and culture of providing a welcoming place of support for those new to the hobby, we will develop new, young leaders who will continue to move the club forward no matter where the future technologies take the hobby."

I hope all of you have experienced the welcoming, supportive spirit that is what BVRC is all about, and, more importantly, I hope you have taken the opportunity to contribute to that welcoming spirit!

73! – Jan, WB5JAN



Another excellent turnout of BVRC members greeted our October 2026 meeting, where members were treated to a very informative presentation on the North West Arkansas Skywarn Link System by BVRC Technical Officer Jon Williams, K5DVT.

Jon is the owner and maintainer of the Skywarn Link System and, over the past couple of years, has devoted considerable time and effort to updating and improving the equipment at all of the repeater sites. For those who want to keep up with the system, current NWASLS repeater information is always available on the BVRC website under the Area Nets tab and in The Signal newsletter.

One of the most important aspects of the Skywarn Link System is the way the repeaters are interconnected. Jon explained that all of the repeaters are linked using RF links. No internet connection is used for the repeater links themselves. This is an important feature because an internet outage will not affect the operation of the linked repeater system. Jon pointed out that the Huntsville repeater does use the internet for All-Star users, but that internet connection is separate from – and has nothing to do with – the RF linkage between the Skywarn repeaters.

Jon also provided members with a history of the link system, which began with the Mount Kessler repeater in 2019. Since then, the system has continued to grow, with equipment upgrades and additional capabilities being added along the way.

He noted that the Bentonville machine has a backup repeater on 444.900 MHz, while the Dodd Mountain machine has a backup on 444.700 MHz. These backup capabilities add another layer of reliability to the system.

Looking toward the future, Jon discussed plans for receiver voting at potential repeater sites in Siloam Springs, Fayetteville, Springdale, Bentonville, and possibly Huntsville.

Receiver voting will be a valuable addition to the Skywarn Link System. Jon explained that the project will include a homebuilt receiver coupler that will allow eight radios to share a single antenna. This capability should provide improved coverage and reception flexibility while making efficient use of existing antenna resources.

Jon also reviewed the network hub and discussed plans for two-tone paging for the link system. These enhancements represent the continued development of a system that has become an important resource for area amateur radio operators and Skywarn activities.

The program also included a review of The Skywarn Net and the Skywarn website. If you missed the meeting or would like to revisit that information, be sure to check out the article on page 23 of the October issue of The Signal.

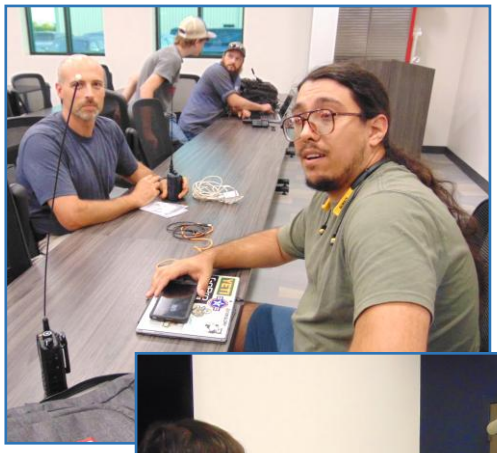
A big thank you to Jon Williams, K5DVT, for another super-informative program. BVRC is proud to have Jon serving on the Board of Directors as our Technical Officer, and we greatly appreciate the tremendous amount of time, knowledge, hard work, and effort he has devoted to the North West Arkansas Skywarn Link System. His work behind the scenes helps keep this valuable resource growing and improving for the amateur radio community. We look forward to another great program from Jon in the near future!

BVRC's monthly meetings are always preceded at 6:00 pm by our programs geared for our new club members and newcomers to the hobby, **The HAM 101 Workshop.**

For October's gathering, the annual "Help Newcomers Program their HTs" workshop was conducted. Our Elmers for this workshop were Alex Smith – KI5EQK and Brad Ponder – KJ5CWR. The turnout was great and Alex and Brad were busier than woodpeckers in a lumber yard, helping many newcomers get the majority of the area repeaters programmed into the memory channels of their HTs.

We really appreciate Alex and Brad doing this, as getting those frequencies and PL tones in those radios will not only encourage newcomers to begin checking-in to the club nets, but it will also equip them in being able to access all the repeaters in case of an emergency or severe weather.

Thanks Alex and Brad!!!!!!!!!!!!!









BVRC members - Now is the time to mark your calendar and make plans to attend the Arkansas DX Association's (ADXA) Annual Conference, held each November. This year's conference will take place in the central Arkansas area in North Little Rock. The ADXA rotates the location of its annual conference each year, giving amateur radio operators from across the state an opportunity to gather, learn, share experiences, and enjoy a day centered around the hobby we all love.

This all day extravaganza will feature outstanding speakers, a great luncheon, door prizes, and plenty of valuable information about DX operation. And you don't have to be an avid DXer to benefit. The knowledge and techniques presented can help you in many aspects of amateur radio. All BVRC club members – Technicians, Generals, Advanced, and Amateur Extras – can benefit from the stellar programs offered by the ADXA conference and its top-notch speakers.

Hams from all over Arkansas will be attending, and you are invited! You do not have to be an ADXA member to attend. The registration fee is $50 per person, and you can be assured you'll get your money's worth with a great meal, excellent presentations, and a full day of valuable information.

So, make plans now to join fellow Arkansas radio amateurs in North Little Rock for the ADXA Annual Conference. It's a great opportunity to learn something new, meet fellow hams, and perhaps come away with a few ideas that will make your own operating even more enjoyable.

To register for the conference, click **HERE**.

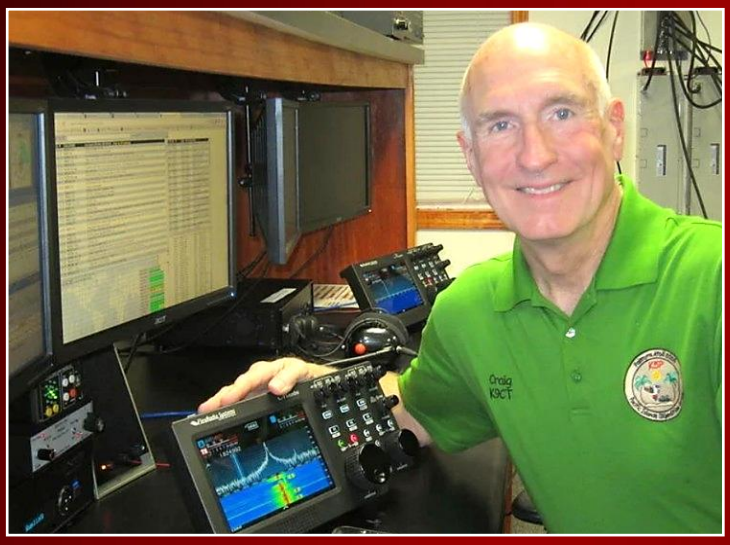
(THE REGISTRATION DEADLINE IS NOVEMBER 1)

ADXA
Arkansas DX Association

ADXA ANNUAL CONFERENCE
SPECIAL GUEST SPEAKER

DXpeditioner and Contester Extraordinaire

Craig Thompson – K9CT



Craig has been a team lead or member of 13 major DXpeditions and currently serves as President of the Northern California DX Foundation, a major funding source of DXpeditions. Craig will be presenting "A DXpeditioner's Journey - A look back on 13 DXpeditions" plus a bonus presentation on station design.

Another special guest speaker, appearing virtually, will be Adrian Ciuperca – KO8SCA. He was the conference speaker in 2023. Adrian has participated in two Bouvet DXpeditions in addition to over 30 other DXpeditions in the past 12 years. He will be speaking on the major upcoming Peter 1 Island DXpedition in February.

Other great speakers will round-out the day filled with great DX topics and information.

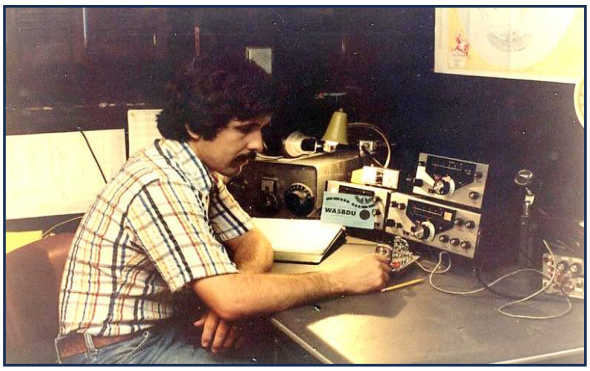
- Additional DX Topics & Speakers
- Noon Luncheon
- DXCC Card Checking
- ADXA Awards
- Door Prizes

Registration is open until November 1. Register today!
CLICK HERE



BVRC Member Garners QRP Hall of Fame Honors

The Bella Vista area Radio Club is pleased to announce that Nick Kennedy – WA5BDU of Bella Vista has been elected to the QRP Amateur Radio Club International's Hall of Fame. Nick is an active BVRC member and if you ever want to see him in action on CW, just stop by the CW station at BVRC Field Days in June and you'll see Nick 'pounding out' those QSOs.



Nick in 1982 operating his Ten-Tec Triton IV station

Nick began his amateur radio journey in January 1962 at age 13 in Subiaco, Arkansas, with his initial call sign WN5BDU. A BSEE graduate of the University of Arkansas and a former nuclear power engineer, he is a dedicated CW operator and homebrewer who describes the current era as a "golden age" for building one's own radio equipment. Nick was also featured on the "QSO Today" podcast, program #67. Hat's off to you, Nick, and congratulations on this outstanding achievement!



REMINDER:

BVRC Bingo Award

Started October 1 !



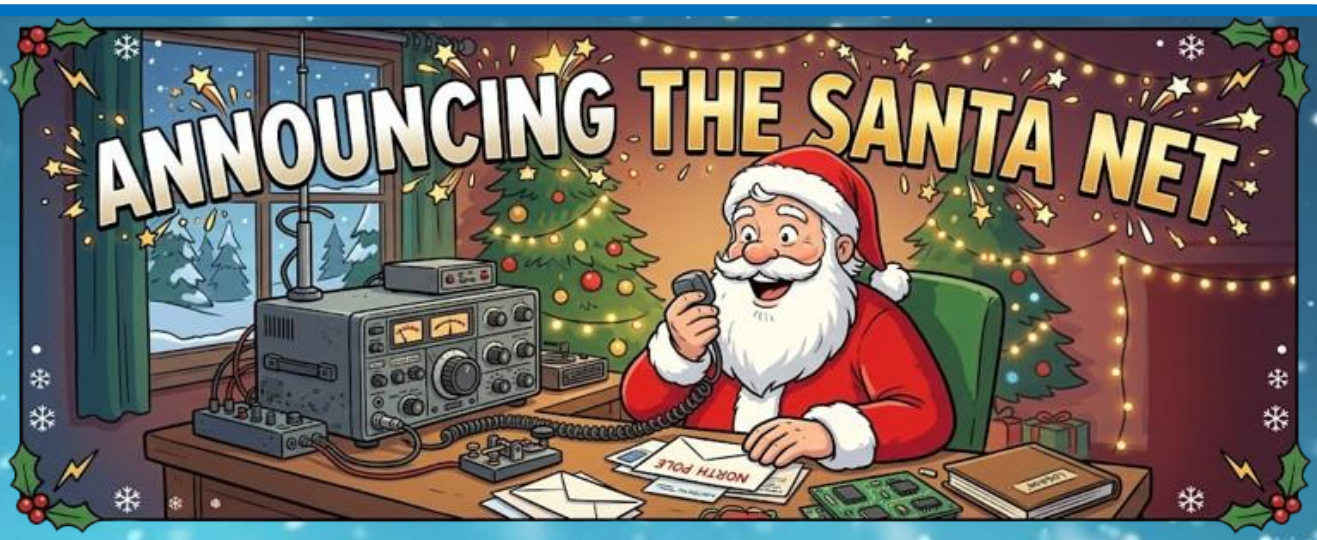
Want to add an attractive piece of "wallpaper" to your shack wall? The new **BVRC Bingo Award** pursuit began at 0000 UTC on October 1 (7:00 p.m. local time, September 30).

The award encourages all members with HF capability to explore different bands and modes, make a variety of QSOs, and – most importantly – have fun along the way!

In a ham radio modified statement from the Indianapolis 500:

"OMs and YLs, start your radios and antennas!"

Full information can be found on the BVRC website:
https://bellavistaradioclub.org/bvrc-bingo/



The Bella Vista Radio Club is pleased to announce our club's next big operating event – The Annual Santa Net! Coming this December – BVRC's N5BVA Santa Net will be on the air!

Yes, BVRC is developing and sponsoring an opportunity for all children in the Bella Vista area Radio Club's footprint to have a real-time QSO with Santa Claus this Christmas season.

The net will convene on Friday, December 4, and again the following Friday, December 11.

The Santa Net will be a special net in that there will be no on-air check-ins. Instead, to take part in the net with your young children, grandchildren, nieces, nephews, etc., check-ins for the net will be by registration. All you need do is simply complete the Santa Net registration form on the BVRC website. Persons registering will choose which date and time slot they can be on frequency to check-in to speak to Santa. The NCS will use the registered slots as a net check-in list. *Be sure and be on frequency that evening.* The Net Control Station will call you when it's your turn. This will not only enable your little ones to speak to Santa, it will also introduce them to ham radio! THE NET WILL USE THE NW ARKANSAS SKYWARN LINKED REPEATER SYSTEM.

TO REGISTER FOR THE NET, CLICK HERE.

If you need more information, contact the Santa Net Coordinator, Dale-W5DSL at: lddldale@gmail.com or phone 479-531-3600.

HO! HO! HO! – SEE YOU THEN!

BVRC VE REPORT FROM DON BANTA – K5DB BVRC VE COORDINATOR OCTOBER 2026



Hear ye, hear ye!
Most hearty congratulations unto all those who have this month passed their examinations for the license of amateur radio!

Steven Mullins – KJ5RPC – New General !

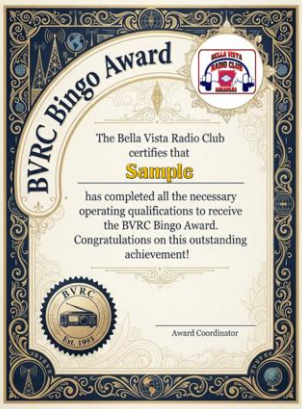
Walker Ashcraft – KJ5SAB – New Technician !

Next month's exam sessions

- ***November 14, 10 am – Shiloh Museum of Ozark History, 118 W. Johnson Ave., Springdale***
- ***November 14, 2 pm – Bella Vista Public Library, 11 Dickens Place, Bella Vista***

If you wish to test, you must register for an exam session.
To register, and for additional instructions,
go to the 'TESTING' tab on the BVRC website:

https://bellavistaradioclub.org/testing/



BVRC Bingo Award First Recipients!

Bingo Award

1. Shawn Rogers – KJ5MDW
2. Luke Williams – AE5AU
3. Jeff Crawford – K5DRJ
4. Kathy Bromley – WQ5T
5. Nick Kennedy – WA5BDU

Bingo Blackout Award

1. Luke Williams – AE5AU

BVRC Community Outreach Team Accepting New Members For 2027!

ATTENTION ALL BVRC MEMBERS WHO ARE INTERESTED IN PUBLIC SERVICE COMMUNICATIONS – The BVRC Community Outreach Team is accepting new volunteers to assist in communications during walk-a-thons, bicycle races, parades, etc. for next year! Serving the public in this capacity is both fun and rewarding.

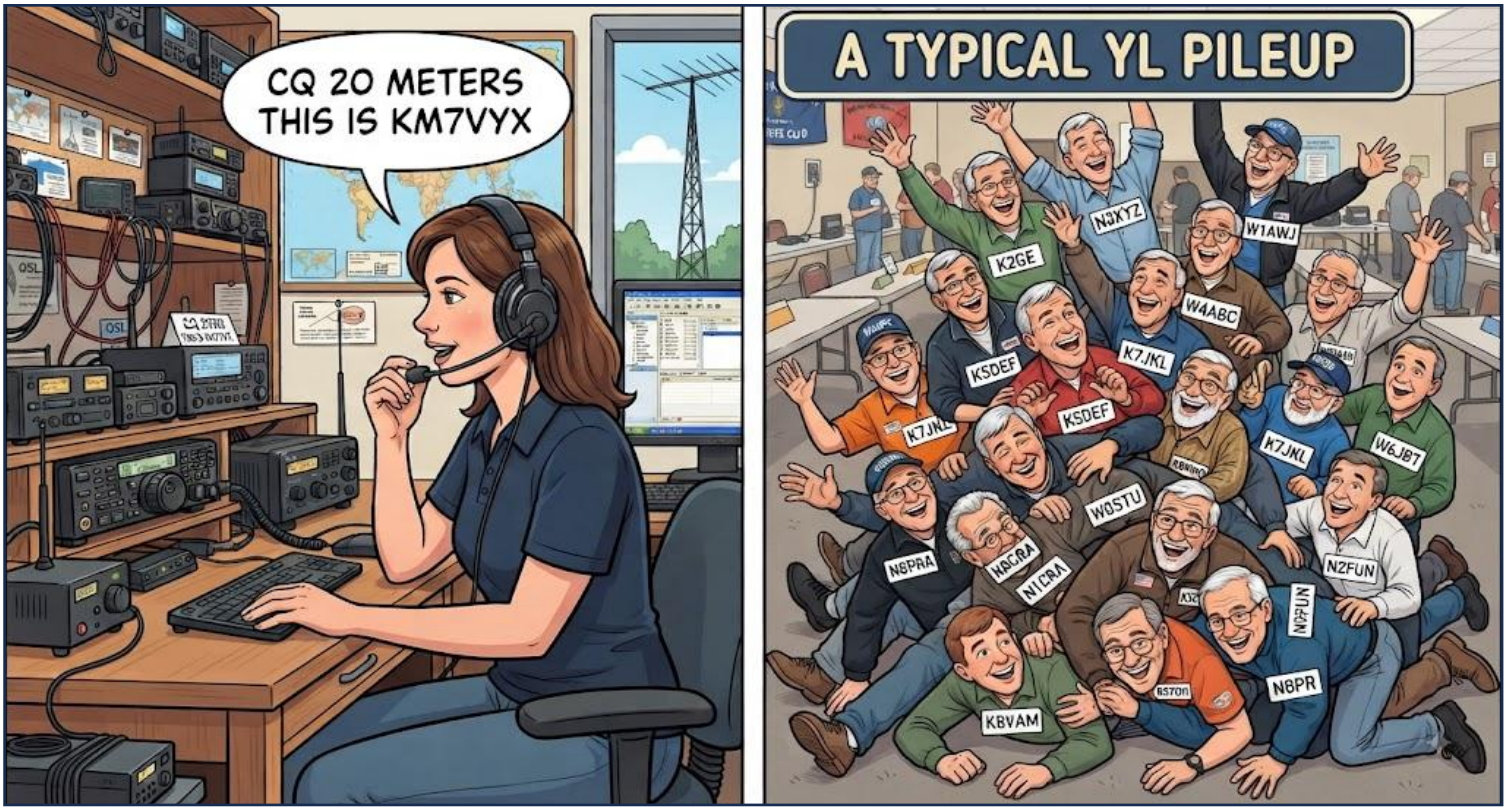
To register and join the team, go to this link:
https://docs.google.com/forms/d/e/1FAIpQLSdYe6j1pqPnp2YYHJoilVgQN-oS7phDDJ8RkyI30CHk9wyNxQ/viewform?usp=publish-editor

You can also bookmark this calendar which will show all BVRC Community Outreach Team upcoming events in real time:
https://calendar.google.com/calendar/u/0?cid=ZDM2YTczZjAzYWI4YWZkNDhmMTA3YzA5MjkyMTJiNmI3MzBmNTkzNjk2NWFlZTk5MTNhNjFhOWVkZDFkZDM1NEBncm91cC5jYWxlbmRhci5nb29nbGUuY29t





Walker Ashcraft – KJ5SAB – Springdale



EQUIPMENT CORNER



FOR SALE:
TOWER / ROTOR / ANTENNA PACKAGE

Rohn 35' tower with hinged base enabling tilt-over. Also comes with winch and Tailtwister rotator and controller. Antenna: Mosley CL-36-M high power tri-band beam for 10, 15, and 20 meters.

Tower price, new: $925.00 Antenna price, new: $1,825.00
Rotator package, new: $800.00 **Total package, new: $3,550.00**

Asking: $650.00 OBO
If interested or more info, contact Don-K5DB: arsk5db@gmail.com







FOR SALE:
HUSTLER 4-BTV 4-Band Trap Vertical

This vertical antenna is designed for 10, 15, 20, and 40 meter operation. You can also purchase add-on kits for 75 and 80 meters. Its features include: ● Self-supporting, no guys needed. 22 feet tall. Has a wind survival rating up to 60 mph. (You can, of course, add guys if you wish.) ● Heavy-duty aluminum tubing and all stainless steel hardware. ● The adjustable trap system allows frequency adjustment up to a 2 MHz shift. ● Low SWR – Typically better than 1.6:1 at band edges. ● Comes with ground mount post, coax hookup, and 16 radials – 4 radials per band. ● Capable of handling up to 1500 watts SSB, 1000 watts CW, and 100 watts FT-8 or RTTY. ● Will work well anywhere, but especially ideal for restricted space areas and HOA/POA restrictions providing an omni-directional radiation pattern. ● Has been used less than 72 hours operating time. ● Still in factory box with owner's manual.

Currently selling on Amazon for $380.42, DX Engineering for $369.98
Asking: $175.00

If interested or more info, contact Don-K5DB: arsk5db@gmail.com



W5AEN ACROSS THE POND:
HAM RADIO ADVENTURE IN ENGLAND



By Joe Hott – W5AEN

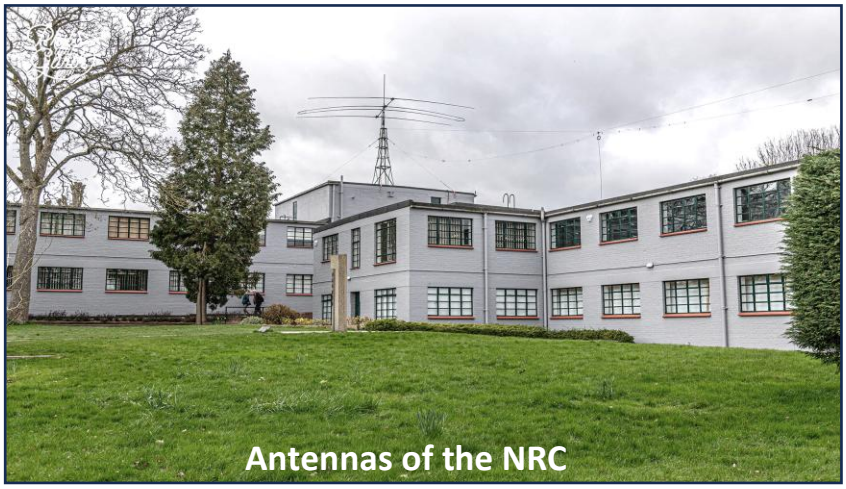
This past September Mary Lou and I took a WWII themed Viking Cruise from London to Paris, spending a week in each country. While in England we visited Bletchley Park, which was the home of the Code Breakers during the war.



Bletchley is a small village 70 miles north of London. Within Bletchley is Bletchley Park, which is part of an estate of 55 acres, which included a beautiful mansion. Bletchley Park, today's home of the National Radio Centre, served as the central hub of the Allied forces during WWII, employing nearly 10,000 people, including Alan Turing, an English mathematician, logician, computer scientist, and cryptanalyst; and Gordon Welchman, also a noted mathematician and Code Breaker. Communications were almost entirely in Morse Code; but because the signals were easily intercepted, the Nazis scrambled coded messages utilizing a constantly changing code performed by a machine called Enigma that had been designed by the Germans. Bletchley was an obscure farming village that proved to be the perfect place to intercept and decode the Nazi communications. The Allies brought in a number of personnel (exclusively women) in addition to hiring ALL the local women in the village.

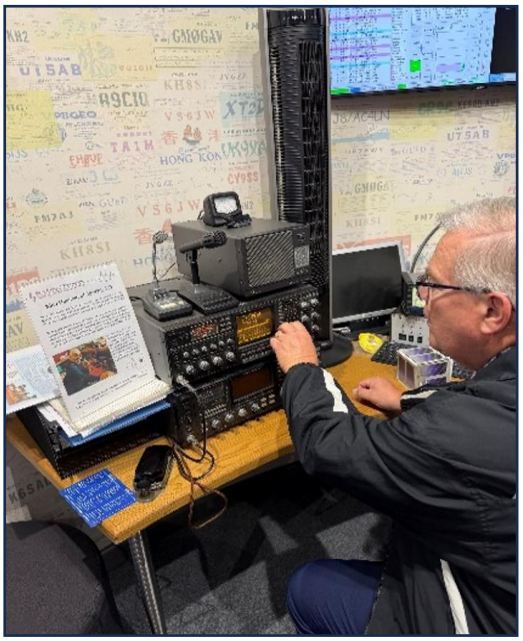
The women worked 8-hour shifts going over coded transcripts of all communications intercepted, making notes of what they thought the Nazis were attempting to communicate to their forces. The women were sworn to secrecy. They could not speak to anyone else about what they saw or interpreted other than to their immediate supervisors. These women were very well-paid and kept their mouths shut. No information was ever leaked from Bletchley Park, and the Bletchley Park operation continued to be top secret until the mid-1970s. Bletchley Park proved to be the perfect location.

Mary Lou and I took a tour bus to visit Bletchley Park, and upon arrival I immediately spotted several radio antennas before we got off the bus. I recognized a SteppIR, as well as VHF/ UHF antennas, and a couple of dipoles. We looked around the grounds of the estate and all the buildings that housed the codebreakers. The mansion on the grounds had been converted to offices and workspace around 1940. Other buildings were hastily erected to house laboratories, offices, and workrooms, as well as dormitories for workers who did not live in Bletchley. We toured the mansion and the grounds prior to getting to the Radio Room (I was in agony).


Antennas of the NRC

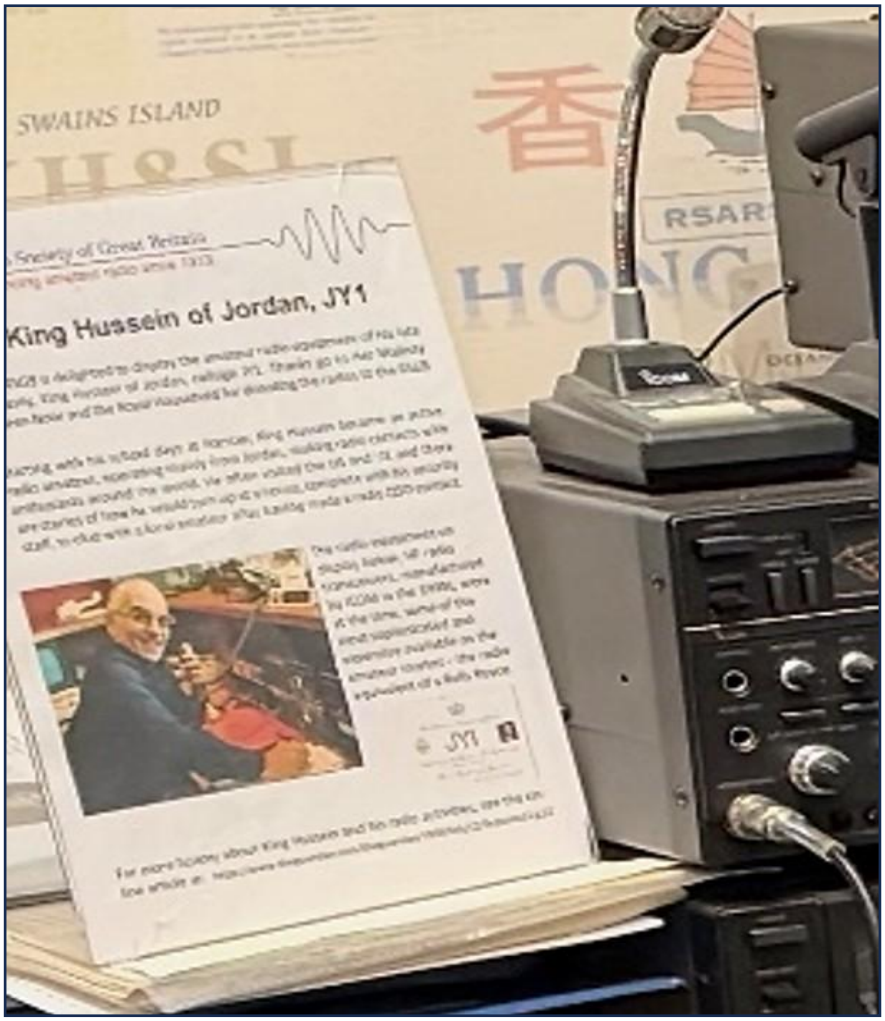
The Radio Room is quite extensive. There is a huge collection of old transmitters and receivers to explore, as well as photographs of these pieces in operation. Then, there is the current radio station, staffed by members of the Radio Society of Great Britian (RSGB). There were three gentlemen present from RSGB; two answering questions of the visitors and one operating CW on a Flex 6500. After looking at the displays behind the operating positions, one of the RSGB staffers asked me if I had any questions. I then told him that I was a licensed U.S. amateur radio operator. He asked for my identification and call. He then walked away, returning a few minutes later, ushering me over to the operating position that was in use. I picked up a pen and managed to copy a line of code, at which point I glanced over to see where Mary Lou was, only to realize that six people were watching me very closely and asking ME questions! (Not a good situation for a guy who is not a regular CW op!)







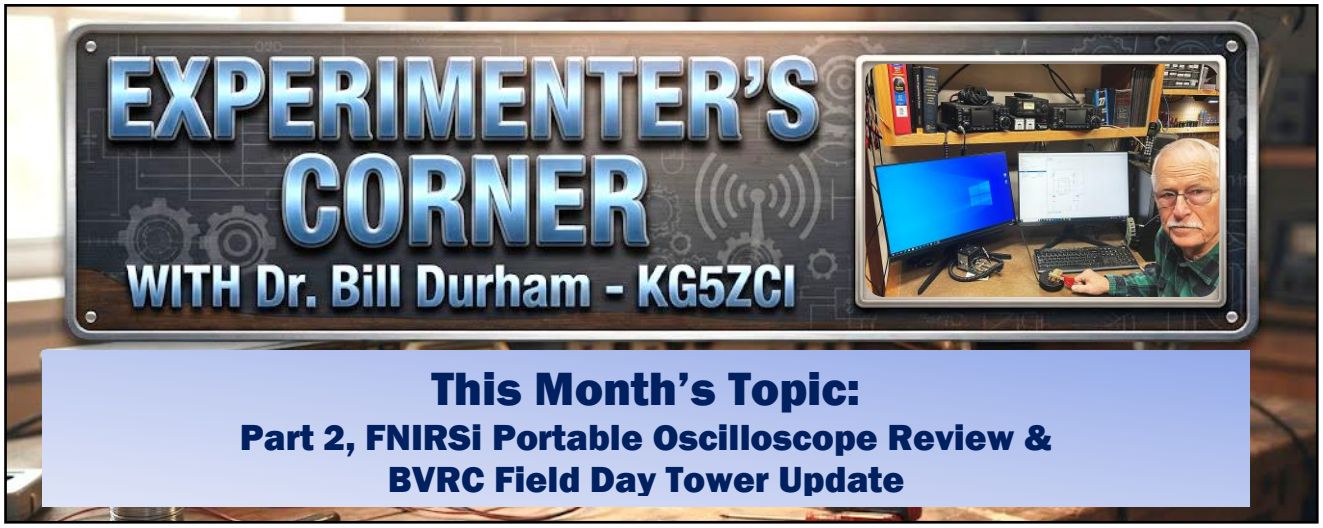
I ended up not making any contacts as the propagation was miserable, and copying code with an audience isn't in my comfort zone! 40 meters was unusable, so I switched over to 20 and the SteppIR. The noise level was just as high and nothing heard there. The gentleman then asked if I would slide over to the far left of the operating position.



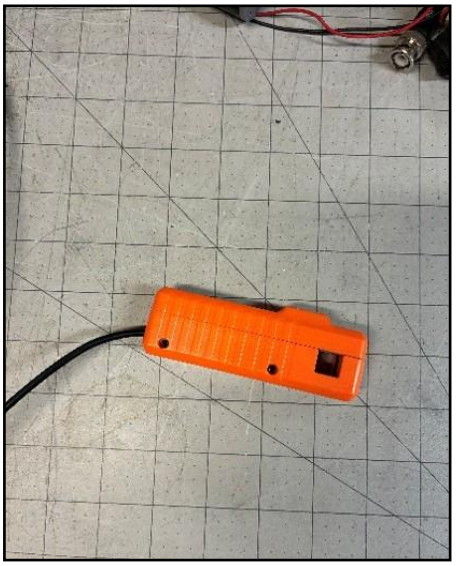
There sat the late King Hussein of Jordan's personal radio station, a vintage Icom, as shown in the picture at left. I turned it on and listened after switching antennas and heard a QSO going on from Lebanon. Interesting fact concerning King Hussein: Many years ago, the King of Jordan applied to England to get an amateur radio license in Great Britian. The problem was that he had never ever taken any test to become a radio operator! But, of course, he didn't have to in his own country. He was the King! King Hussein was refused a license in Great Britian but was told that he was allowed to use his Jordanian call sign – JY**1** – while visiting. Apparently, he set up an amateur radio station in each country he visited, and this Icom station was what he used while visiting 'Jolly Ol' England' !

If you ever have an opportunity to visit England, take time to see Bletchley Park. It is amazing what was accomplished there and the efforts of the Code Breakers which, in effect, won the war.





Last month I reported my findings related to the FNIRSi portable oscilloscope. I bought the device to use on a 1989 Toyota truck I have been working on for over a year trying to repair damage done by 4 years of squirrel munching. I had two targets in mind, the wiring to the fuel injectors and the distributor. Both were heavily damaged by the squirrels. I thought if I could spin the engine with the starter motor, I could get a good look at the signals. Well, after spending many hours staring at the wiring diagrams, I got lucky and was able to put enough together to get the engine to run. I say lucky because there were a few fail-safes I had to work around with a lot of guessing about how everything was supposed to work. Keep in mind that the truck was running fine before it was ignored for four years.



Back to the oscilloscope. Along the way I added two wire test points to the injectors for access, once the intake manifold was bolted down. I also purchased a cheap timing light. The timing light comes with a clamp-on-probe for the distributor lead. I cut this off and stripped the wires to connect to the oscilloscope. The clamp was connected to light via several feet of coax which I retained for the connection. This avoided the need to try to make a connection to the high voltage output from the ignition coil.

I had some difficulty getting the settings correct on the oscilloscope before I could see the transients. The injector connections worked well, and I got a signal pretty quickly, shown in the bottom photo at right.



The distributor took a bit more work and I finally decided to try my bench scope to figure out the proper settings. At this point, I had determined that the connection to the truck would not damage the bench scope. The bench scope is much easier to manipulate because it has dials for the vertical gain and the time base. Once I was able to get a good signal on the bench scope, I copied the setting to the portable and it worked fine. In fact, in all cases the traces were identical, as they should be.



Bottom line, the portable gives the same results as the bench scope, it's just much harder to get the settings correct. Is it good for engine diagnosis? I only tested after I got the engine to run. It's an interesting academic exercise but it would require a lot more work figuring out how to trigger the scope to see the individual components (like what is plug 4 doing, or plug 3).

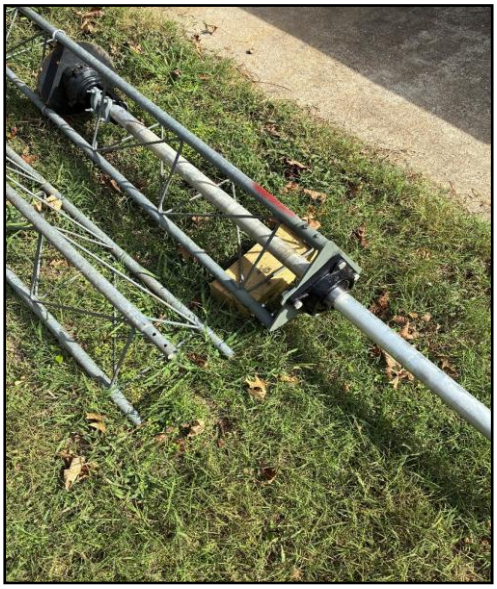
Moving on to the next project – the club Field Day antenna tower. My plan has been to change the top section of the mast to a flat end so that a bearing could replace the long tube that the mast passes through. The alignment of the tube is difficult and the potential for drag on the mast is high. As you can see from the photo I was able to build a nice, strong top and mount a large bearing to hold the mast. All the alignment rested on precision machining of the bearing plate.

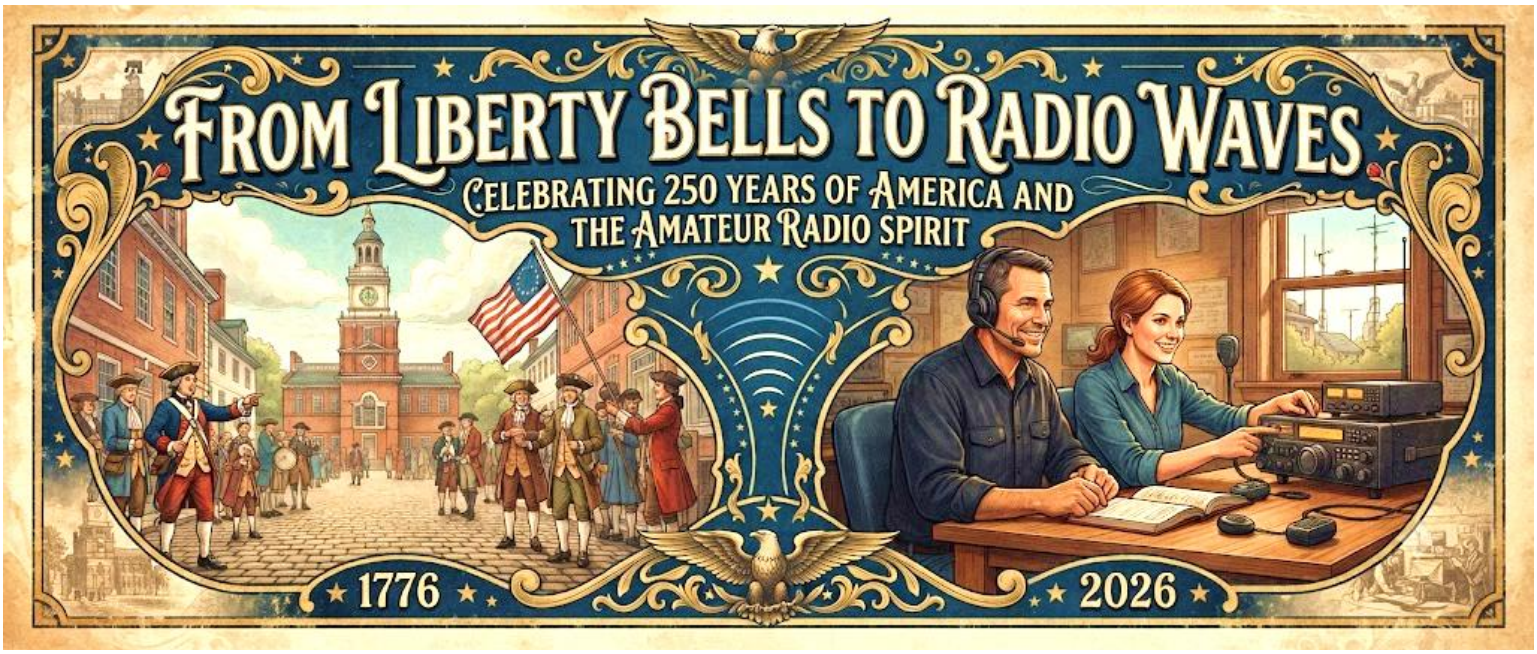
The bearing plate was made from 5/16 hot rolled steel. I actually cut it from the same stock as the plate used at the bottom of the tower. Standard 1" pipe fits well on the tapered ends of the mast and this was cut to size (3 pieces about 3" long) and welded to the plate. As I mentioned in an earlier column, the welding must be done very carefully to avoid warping the plate with the heat (making it impossible to get the plate on or off the mast). With this in mind, I clamped the plate to the welding table in several places and then lowered the tower with the pipes pieces (via a winch) onto the triangular plate. I then carefully positioned the pipes on to the corners of the triangular plate and lowered the tower to hold the pipes pieces in place. I tacked each pipe about 6 times and moved around randomly, placing one tack at a time. Once I was satisfied, I ran a bead around each pipe. Note: The pipe is welded pipe, and it comes with an inside seam that must be removed. Some filing will typically take care of the problem.

I found a very nice pair of heavy bearings with 2.25" ID on e-Bay for $80. I have a spare. The bearings were sealed and each had a grease zurt. I spent about an hour lining the bearing up with the center of the triangle, lots of redundant measurements. Once done I bored out the center hole with a 2" annular cutter and finished to size (2.25") with a fly cutter. Along the way, I discovered that the bearing mounting holes were a bit too large for the plate. I welded on two "ears" onto the plate and drilled four ½" mounting holes with the bearing carefully aligned with the hole in the plate. The mast is actually 2.0 inches, so a sleeve was machined to take up the space in the bearing. I preferred to buy the over-sized bearing so that I could machine a good fit to the mast.



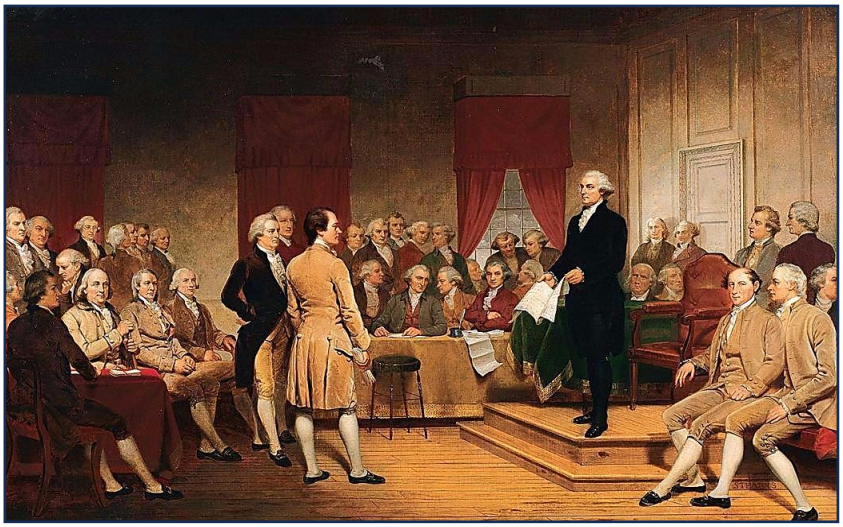
The next step will be to assemble the tower and see how everything fits together, along with the raising and lowering.





From: Don, K5DB

On July 4, 1776, the Second Continental Congress adopted the Declaration of Independence, announcing that the thirteen American colonies were no longer willing to be governed as subjects of Great Britain. Two hundred and fifty years later, Americans are celebrating the semiquincentennial of that remarkable decision.



For amateur radio operators, the anniversary offers an interesting opportunity to look beyond the familiar stories of battles, presidents, and political debates. and consider another distinctly American tradition: **the freedom to experiment, communicate, innovate, and put technology to work in the service of others.**

That tradition runs through the history of the United States, from the electrical experiments of Benjamin Franklin to today's worldwide network of amateur radio operators.

Long before there were radios, there was an American fascination with electricity.

Benjamin Franklin's experiments in the 18th century helped establish a better understanding of electrical phenomena. His famous kite experiment in 1752 demonstrated the electrical nature of lightning and contributed to the scientific understanding that eventually made electrical technology possible.

Franklin was not an amateur radio operator, of course – radio was still more than a century away. But there is a connection worth appreciating. Franklin represented an emerging American spirit of curiosity and experimentation: observe a phenomenon, build something, test an idea, and share the results.

And by the way, it is no myth. – Benjamin Franklin **DID** fly a kite during an electrical storm with his son William, but not in the way popular culture depicts it. There is still some historical debate regarding the specifics of the experiment, but historical documentation does bear out these facts:

• The kite was not struck by a bolt of lightning. If it had been, Franklin would have almost certainly been killed. Instead, the kite collected ambient electrical charge from the storm clouds. Franklin observed that loose threads of the wet hemp string stood erect and repelled each other, and he drew sparks from the key.



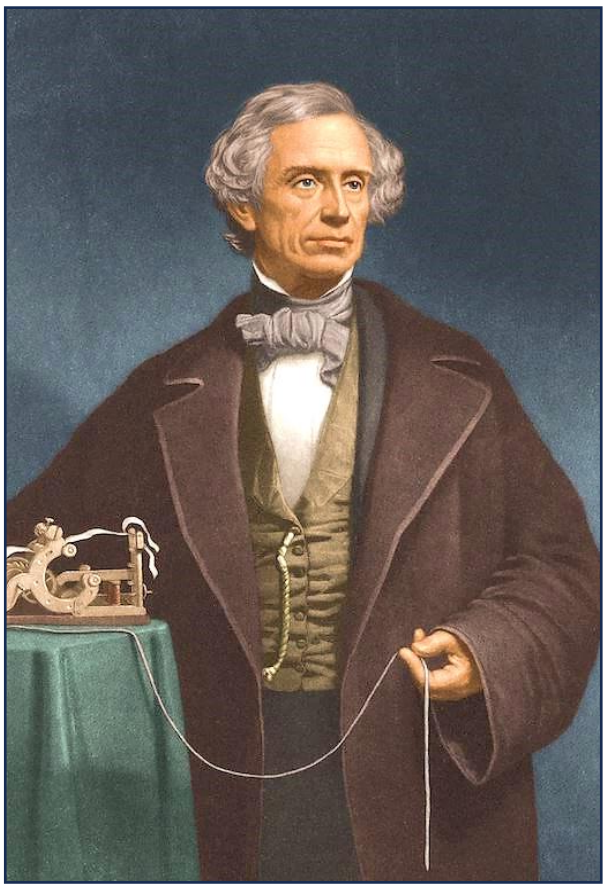
• Franklin did not stand in the open rain. He stood inside a doorway or shed to stay dry. He used a silk ribbon as an insulator to tie the key to the string, ensuring the electrical charge did not pass directly to his hand. He only touched the key after ensuring his hand was dry and the insulator was secure.

• Franklin did not discover electricity – it was already known. His experiment did prove, however, that lightning is a form of electricity. Also, he was not the first to demonstrate this. French scientist Thomas Francois Dalibard had successfully conducted a similar experiment using a metal rod in France just weeks before Franklin's kite flight.

However, Franklin's quenchless spirit of inquisitiveness would become a defining characteristic of amateur radio.

The new nation itself was also confronted with a fundamental communications problem. In 1776, a message could take days or weeks to travel between distant communities. Information moved at the speed of a horse, sailing ship, or human messenger. The American revolution demonstrated just how important communications could be. Commanders needed to know where enemy forces were located. Political leaders needed information from distant colonies. Orders, intelligence, and news had to move across a vast and often difficult landscape.

America was founded in an age when distance was measured in days. Amateur radio would eventually help make that distance almost irrelevant. The communications revolution accelerated during the 19th century.



Samuel Morse and his collaborators demonstrated practical telegraphy in the 1840s. In 1844, Morse sent the famous message "What hath God wrought?" over a telegraph line between Washington and Baltimore. For the first time, electrical signals could carry information over great distances almost instantaneously.

The telephone followed, and by the late 19th century inventors and scientists were asking an even more intriguing question:

Could information travel without wires at all?

Experiments in electromagnetic waves by scientists including James Clerk Maxwell and Heinrich Hertz provided the theoretical and experimental foundation. Then came the practical work of inventors and experimenters who began turning invisible electromagnetic energy into a communications medium.

In 1901, Guglielmo Marconi demonstrated that radio signals could cross the Atlantic. His achievement helped establish the practical potential of wireless communication.



The wireless age had begun. And almost immediately, ordinary people wanted to experiment with it.

The birth of the radio amateur

The earliest radio experimenters built much of their own equipment. They experimented with antennas, detectors, transmitters, receivers, wavelengths, grounding systems, and ways of making weak signals travel farther.

In those days, there was of course no Internet full of technical videos, no commercial transceiver with an owner's manual, and no automatic antenna tuner that could be ordered overnight. If something didn't work, the operator had to figure out why. That do-it-yourself culture remains one of the great attractions of amateur radio.

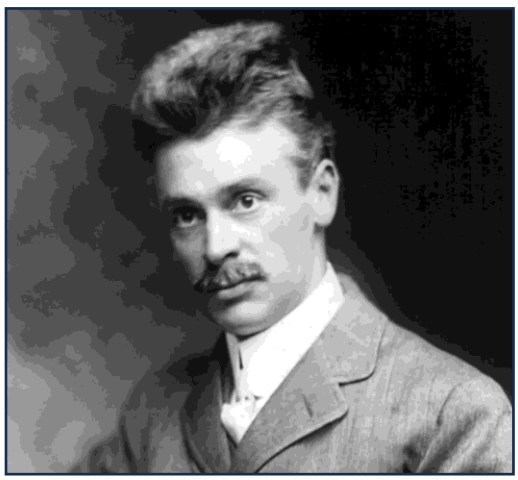




The rapid growth of wireless stations also created problems. With many operators transmitting without coordination, interference became a serious concern. Congress responded with the Radio Act of 1912, requiring amateur operators to obtain licenses and restricting them to wavelengths of 200 meters or shorter.

What government regulators initially regarded as an interference problem would soon become one of America's great technical communities.

Hiram Percy Maxim and the American Radio Relay League



In 1914, Connecticut inventor Hiram Percy Maxim discovered that amateur radio operators could greatly extend the effective range of their stations by relaying messages from one station to another. That idea led to the creation of the **American Radio Relay League**.

The concept was straightforward but revolutionary: one amateur station might not be able to reach a distant destination, but a chain of amateur stations could move a message across the country. The ARRL was founded in Hartford, Connecticut in 1914.

There is something particularly appropriate about this development when viewed through the lens of America's founding.

The United States itself began as a collection of colonies that learned that cooperation could accomplish what individual communities could not accomplish alone. A century and a half later, amateur radio operators were discovering much the same thing on the air. One station could make a contact. A network of stations could move information across a continent. The technology was different, but the underlying idea – independent individuals cooperating toward a common purpose – was remarkably familiar.

Perhaps no episode better illustrates the adventurous spirit of early amateur radio than the transatlantic tests of the 1920s. Many radio professionals believed that amateurs working with relatively low power could not reliably communicate across the Atlantic. Amateur operators decided to find out for themselves.



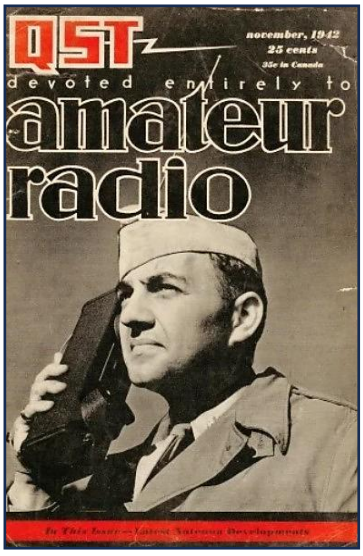
In December 1921, during ARRL's Second Transatlantic Tests, Paul Godley – 2ZE, traveled to Ardrossan, Scotland, to listen for signals from North American amateurs. On December 12, he heard the signal of 1BCG, a station operated by members of the Radio Club of America in Greenwich, Connecticut. More than two dozen American amateur stations were eventually heard.

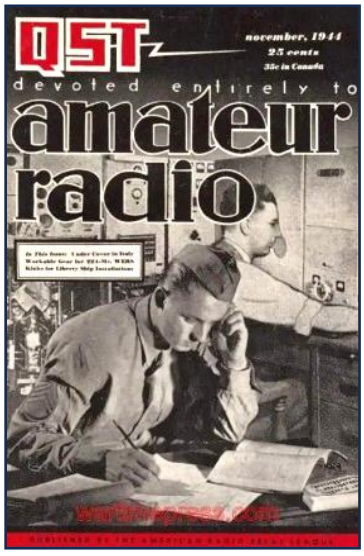
The experiment helped establish shortwave amateur radio as a practical long distance communications medium. The first two-way transatlantic amateur contact followed in 1923. By 1924, amateurs were making increasingly impressive contacts around the world, and the era of modern DX was beginning.

Think about the contrast. In 1776, crossing the Atlantic could take weeks or even months. In 1921, an amateur radio operator could send a signal across that same ocean in milliseconds. And the person on the receiving end might be sitting at a homemade station, listening through headphones for a faint signal buried in noise. That is not merely technological progress. It is a story about people refusing to accept the limitations of the technology they had been given.

The American story has also repeatedly demonstrated that communications become especially important during emergencies and conflict.

Amateur radio operators served in military and communications roles during both World Wars. During World War II, thousands of American radio amateurs contributed their technical knowledge to the military and critical industries. ARRL continued publishing QST during the war, and its publications were used for training.





The amateur community also demonstrated another characteristic that has remained important for the hobby: *service without expectation of commercial reward.*

Radio amateurs have long provided communications during disasters, assisted communities when normal systems failed, supported public-service events, and volunteered their technical skills. The equipment may have changed from spark transmitters and vacuum tubes to software-defined radios and digital networks, but the principle remains remarkably consistent: When communications matter, trained people who know how to communicate are valuable.

Perhaps the most fitting symbol of amateur radio's adventurous nature came in 1960.

Radio amateurs made the first successful two-way Earth-Moon-Earth ("moonbounce") contact, demonstrating that signals could be bounced off the Moon and received back on Earth. ARRL's history notes that the milestone occurred in July 1960 on 1296 MHz.



The Moon – something that had fascinated humanity for thousands of years – had become an amateur radio reflector.

Since then, amateurs have experimented with satellites, meteor scatter, digital communications, television, weak signal work, microwave frequencies, moonbounce, and countless other techniques.

The tradition that began with experimenters stringing wires between buildings eventually reached into space.

So, what does amateur radio have to do with America's 250th anniversary? Perhaps more than we initially realize. The American experiment was built around ideas that sound very familiar to radio amateurs:

Experiment.
Don't simply accept that something cannot be done. Test it.

Independence.
Learn how things work. Build something yourself. Develop your own skills.

Cooperation.
An individual station can accomplish a great deal, but a network can accomplish much more.

Communication.
Free people depend upon the ability to exchange information.

Service.
Technical knowledge becomes most valuable when it can help someone else.

And perhaps most importantly: **Keep exploring**.

The Declaration of Independence was written in an era of quill pens, sailing ships, and candlelight. Today, a radio amateur can sit at a desk in a small town, press a button, and exchange greetings with another operator thousands of miles away – or communicate through a satellite orbiting hundreds of miles above Earth. The underlying human impulse is the same. Someone wonders, Can we do this? Someone else says, Let's find out.

As we celebrate 250 years of the United States, let us not forget that amateur radio is itself part of a long American history of technological experimentation.

From Franklin's electrical experiments to Morse's telegraph, from Marconi's wireless signals to Maxim's relay stations, from the 1921 transatlantic tests to moonbounce and modern digital communications, generations of Americans have expanded the boundaries of what communications technology can accomplish.

Today's radio amateur inherits all of that history.



Every antenna we put in the air, every contact we make, every homebrew project we build, every new operator we help get licensed, and every emergency communication we provide adds another small chapter to that story.

The founders of the United States could scarcely have imagined a world in which a human voice, typed message, photograph, or digital signal could cross a continent – or an ocean – almost instantly. But they did understand the value of experimentation, independence, cooperation, and the free exchange of ideas.

Those values remain alive every time a radio operator turns on a transceiver and calls: "CQ, CQ, CQ."

Two hundred and fifty years after America declared its independence, the airwaves are still filled with Americans – and people around the world – experimenting, communicating, learning, and reaching farther than anyone in 1776 could have imagined.

And perhaps that is a fitting way for amateur radio to celebrate America's 250th birthday:
Keep the signals moving. Keep asking questions. Keep experimenting. And keep reaching for the next horizon.

Happy 250th Anniversary, America – and 73!



As Thanksgiving approaches, most of us think of family gatherings, turkey dinners, football games, and the opportunity to pause and appreciate the blessings in our lives.





For amateur radio operators, Thanksgiving also offers a chance to reflect on something unique to our hobby – the friendships we've built, the skills we've developed, and the service we provide to our communities. And for avid contesters, Thanksgiving weekend marks the CQ Worldwide CW Contest (hi, hi).



Amateur radio has always been about connecting people. Whether it's a local ragchew on the club repeater, a DX contact halfway around the world, or helping a newly licensed operator make their first QSO, every transmission reminds us that communication brings people together.

Thanksgiving celebrates connection in much the same way. Families travel great distances to gather around a table, while radio amateurs routinely

bridge those same distances with nothing more than a radio, an antenna, and a little ingenuity. The technology may be different, but the goal is the same: staying connected.

Thanksgiving weekend is one of the busiest travel periods of the year. Across the country, amateur radio volunteers stand ready to assist with public service events, emergency communications, and community activities. While most holidays pass without incident, trained operators know that communication becomes especially important when weather, power outages, or other unexpected events occur.

The amateur radio service was founded on principles of public service, technical advancement, and international goodwill. Thanksgiving is an ideal reminder that these values remain as relevant today as they were decades ago.

Every amateur radio operator can probably name someone who helped them along the way. Perhaps it was the club member who explained Ohm's Law, loaned you your first HF rig, climbed a tower to help install an antenna, or patiently coached you through your first contest.



These mentors – our "Elmers" – represent one of amateur radio's greatest traditions. They freely share knowledge, implement patience, encourage experimentation, and welcome newcomers into the hobby.

This Thanksgiving, you might consider thanking your Elmer with a phone call, an email, or even better, a QSO. And, if you've become an experienced operator yourself, perhaps it's time to think about becoming an Elmer for someone else.

Today's amateur radio operators enjoy remarkable capabilities. Affordable software defined radios, digital modes that can decode signals below the noise floor, satellite communications, mesh networking, and worldwide logging databases have transformed the hobby while preserving its original spirit of experimentation.

Yet many operators still find just as much satisfaction in making a simple CW contact with low power and a wire antenna as they do operating the latest digital equipment. Amateur radio continues to offer something for everyone.



Not everyone spends Thanksgiving surrounded by family. Some operators work during the holiday, some live far from loved ones, and others simply enjoy spending part of the day in the shack.

A friendly conversation on the local repeater or HF bands can brighten someone's holiday. Many long lasting friendships have begun with nothing more than a simple "CQ" or "Good afternoon."

As we celebrate Thanksgiving, consider making one small contribution to the amateur radio community such as:

- Welcome a newly licensed operator.
- Invite neighbors, family members, or friends to see your station.
- Help someone solve an antenna problem.
- Participate in a public service activity.
- Possibly donate equipment to help a newcomer get on the air.



Small acts of generosity strengthen both our clubs and our hobby.

As radio amateurs, we have much to appreciate: the excitement of making a new contact, the satisfaction of building something with our own hands, the friendships that span continents, and the opportunity to serve when our communities need us most.

We wish you and your family a safe, peaceful, and happy holiday. May your table be full, your travels be safe, your batteries be charged, your SWR be low, and your logbook contain a few memorable QSOs.

73, and Happy Thanksgiving!



You don t have to write like William "Bill" Shakespeare in order to write an article for The Signal. In fact, we prefer articles without the words "thy", "whilst", "'tis", and "oft" .



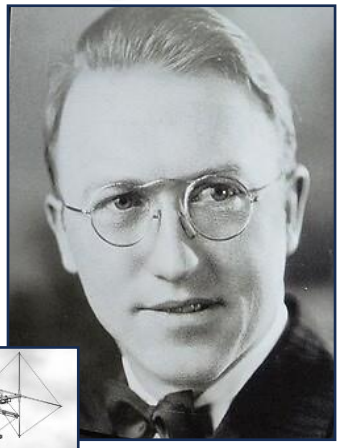
Working on a new kit or homebrew proiect? Have you recently received a rare or interesting QSL card to share? Received a new radio award? Or do you iust have a neat amateur radio photo or some comments to share with other BVRC members? Maybe you have acquired a new piece of equipment, or constructed a new antenna? Taken a trip focused around ham radio to share your amateur radio related experience? Why not write an article for The Signal?

The article can be short or long, simple or elaborate. Please include pictures! We' re always looking for material for the BVRC newsletter, and feedback from our readers goes a long way toward keeping the newsletter interesting! So why not give it try? Write an article and send it to the newsletter editor, and we ll get it in there! It' s fun, and at the same time your contribution helps support BVRC and our hobby! Articles can be submitted electronically or on paper, whichever you prefer. As *The Signal* editor, I *particularly* look forward to putting a new issue together when I have material submitted by our club members. Hope to hear from you soon and 73!

Submit your material to:
Via e-mail: arsk5db@gmail.com
Via regular mail: **Don Banta, K5DB**
3407 Diana St.
Springdale, AR 72764



Clarence C. Moore and the Cubical Quad





Clarence C. Moore was an American radio engineer, pastor, teacher, and radio enthusiast best remembered for inventing the cubical quad antenna, one of the most influential directional antennas in amateur radio. He held the U.S. call sign of **W9LZX** and the Ecuadorian call sign **HC1JB**.

He went on to found International Radio and Electronics Corporation (IREC) in Elkhart, Indiana which was renamed Crown International in the 1960s at the suggestion of his wife Ruby. Crown International manufactured electronic devices including power amplifiers, loudspeakers, and tape recorders. The audio division was acquired by Harman International in March 2000.

Before founding Crown International, Moore became associated with HCJB, the international shortwave broadcasting station in Quito, Ecuador, where he designed and built a 10,000-watt transmitter. The station's high altitude location, about 9,200–10,000 feet above sea level, created a serious problem: the high RF voltages at the ends of the station's conventional antenna produced intense corona discharges, sometimes melting the antenna elements.

Seeking a solution, Moore and his colleagues developed an antenna based on a closed loop, eliminating the exposed high-voltage ends that had caused the arcing. The resulting square-shaped loop antenna was installed at HCJB in Quito in 1942. Later versions incorporated parasitic elements, producing the directional cubical quad beam familiar to generations of amateur radio operators.

The new antenna proved effective not only in solving HCJB's high-altitude electrical problems but also as a directional antenna for long-distance communication. Its success quickly attracted the attention of amateur radio operators, and the cubical quad became a popular antenna for DXing and HF communication. Moore's contribution was recognized at the 1946 International Meeting of Radio Technicians in New York.

Moore's legacy extends beyond the antenna itself. His practical approach to solving an unusual engineering problem produced an antenna design that remains in use among radio amateurs decades later.

The call sign **W9LZX** is consequently closely associated with the origins of the cubical quad and with an important chapter in amateur radio antenna history.

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