



THE SIGNAL

Newsletter of the Bella Vista area Radio Club

FIELD DAY!



ARKANSAS' LARGEST AMATEUR RADIO CLUB

June 2023

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

(HAM 101 Q&A Session for Newcomers @ 6pm preceding meeting)

Club Call: N5BVA

Website: www.bellavistaradioclub.org

Repeaters: 147.255 +offset, pl 162.2

444.100 +offset, pl 162.2

WEEKLY NETS:

BVRC Legacy Net

**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

BVRC 3830 Roundtable

**Sunday Afternoons
4 pm during CST
4:30 pm during CDT
3.830 MHz**

BVRC HAM 101 Net

**Tuesdays @ 8 pm on the
WX5NAS Skywarn Link System:**

- Bentonville – 146.865, -offset, pl 103.5**
- Fayetteville – 147.315, +offset, pl 97.4**
- Huntsville – 443.625, +offset, pl 97.4**
- Green Forest – 145.310, -offset, pl 103.5**

NEXT BVRC MONTHLY MEETING

THURSDAY, JUNE 1, 2023 @ 7PM
ARKANSAS LAW ENFORCEMENT TRAINING ACADEMY
3424 S. DOWNUM ROAD
SPRINGDALE, AR

June Meeting Info

June brings a fun and informative meeting conducted by our own BVRC members.

First, the HAM 101 meeting at 6pm (which always precedes the regular meeting at 7), will move outdoors to the ALETA facility front parking lot for a static display of 4 mobile stations in operation – WA5BDU, K5NZV, W5AEN, and K5DB. The operators will entertain any questions about mobile operation, along with any other radio related questions.

Then at 7pm, the first half of the BVRC regular June meeting will consist of a short presentation by Don Banta – K5DB. The 2nd half of the meeting will feature BVRC's Field Day Committee Chair, Tom – W5XNA, to finalize FD arrangements and answer any questions concerning the 2023 Field Day operation.

BVRC 2023 Field Day will be held at Metfield Skills Park in Bella Vista on Sat/Sun, June 23 & 24. (See the Field Day article in this month's issue for more information.)

It will be a very entertaining and enjoyable evening for all BVRC members and guests.

See You Then!

SUMMITS ON THE AIR HIGHLIGHT MAY MEETING



For the second month in a row, the Bella Vista area Radio Club's meeting convened under wet conditions as areas of rain were abundant in our area, although at least this time no severe thunderstorm cells were present. And for the second wet monthly meeting in a row, this did not deter avid club members from attending, resulting in (once again) an almost packed house. Their efforts were rewarded with a splendid presentation by Bruce Plantz – K9OZ from Little Rock, on the topic of the Summits on the Air program.





Bruce Plantz – K9OZ

Bruce is a 58-year veteran, and in the past 5 years his interest in our hobby has transitioned to operating in the Summits on the Air (SOTA) program. This program is designed for volunteer hams to become ACTIVATORS of different summits worldwide and put those locations on the air to enable the HUNTERS to work them for award credit. Bruce has performed over 260 activations since becoming involved with the program. He said there are 126 summits in Arkansas that are on the SOTA list. He has activated 47 Arkansas summits thus far.

Bruce began his presentation the question, “What *is* a summit?” The official SOTA definition of a summit is: A point of land that is at least 492 feet of vertical rise above the lowest contour line surrounding it.

Bruce then began describing the equipment needed to perform a successful activation, which should be all the essential elements needed while at the same time not excessively weighing-down the activator’s backpack as a considerable amount of climbing is sometimes involved.

Of course, the main piece of equipment is the radio. Bruce suggested several models as good choices for SOTA activations: Yaesu FT-817, FT-857, FT-891, Icom IC-703, IC-705, IC-706, IC-7100, and Elecraft KX-1 and KX-2. (Bruce commented on the KX-1 and KX-2 as being good radios, but the built-in CW paddle in them is not that good. If you’re going to operate CW mode with these radios, it is best to obtain a quality CW paddle to use separately for this mode.)

For antennas, Bruce carries a dipole, several different types of End Fed Half Waves, and a telescoping antenna mast that also doubles as his “walking stick”. The mast he uses is actually a telescoping camping pole used for extra tent support, tarp support, and even a fishing pole that is available for a nominal price on Amazon. He said it is very important to have different types of portable antennas with you to ensure you have a compatible antenna to fit the surroundings of your activation site for the summit you are activating.

When it comes to logging your contacts from the summit, you actually should not take a laptop with you, as this is extra weight in the backpack. However, there are several other methods you

you can use to make logging easier. One way is utilizing one of several cellphone logging apps that are available and logging on your cellphone. Another way is the good ol' notepad and pen. The drawback to this, however, is that you will have to manually enter the QSOs in your main logging program when you get home to enable you to upload the contacts to SOTA.

Bruce said his *most important* piece of SOTA gear is his vehicle, which currently a Subaru Outback. He has owned/used small pickups and SUVs in times past, but said that whatever vehicle you use, it has to be touch on mountain roads and trails to at least get you as close to the summit as possible, then hiking the remainder of the way if the road does not go directly to the summit.

For spotting himself in the internet, Bruce uses SOTL.AS as his main tool.

There are 3 types of hiking for SOTA activations:

- Drive-up: You can drive directly to the summit, resulting in having to hike only a few hundred feet to the summit
- Mild: 1-2 hike. Many of these are abandoned fire towers, old Jeep trails to the summit that are no longer used, etc.
- Challenging: Rugged terrain. Bushwhacking is required for many of these type hikes to the summit. (Bruce does not recommend bushwhacking in winter.)

He said some of the easy drive-up summits in our area include Mt. Magazine (near Paris), Mt. Nebo (near Russellville), Whitney Mountain (Rogers), Rich Mountain (near Mena), and Pilot Knob (near Viola. MO).

Bruce has his own blog at K9OZ.COM for anyone interested in viewing his SOTA activations and activities.

Editor's note: I personally have always thought it takes some amount of work to prepare for POTA (Parks on the Air) activations and mobile state QSO Party operations – which it does at times. But when I saw Bruce's presentation, I have concluded that SOTA is indeed WORK. Bruce and all other SOTA activators are to be commended and saluted for their valiant efforts in making QSOs from these mountaintops possible! Thanks Bruce!!!!!!!



**BVRC President Jan-WB5JAN
presents Bruce-K9OZ with the
BVRC Certificate of Appreciation**

On the heels of K9OZ's 'Summits On The Air' presentation to BVRC on May 4, the next morning Ron-K5XK met Bruce atop Whitney Mountain (SOTA designator W5A/BR-012) to see how Bruce handled his summit activations. Bruce used an Elecraft KX2 10W transceiver with a 3 amp hour lithium battery, and a fiberglass pole to support a SOTABEAMS wire antenna. Contacts were logged on his OutD Android logger. Bruce logged 28 QSOs, with several Summit-to-Summit contacts, all on 20-meter CW. Bruce then allowed Ron to give it a try. Ron's first-ever 8 SOTA contacts (w/2 'S2S') are now in the log. Admittedly, Whitney is an easy "drive-up" peak (no bushwacking!), and Ron was using Bruce's gear, but it's definitely something to build on. (Photos courtesy K5XK)



BOARD MEMBERS

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Newsletter Editor

Don Banta – K5DB
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From the Desk of the President



My Ready Made "Elevator Speech" About Field Day and Amateur Radio

A common occurrence in many of our professional lives involved having to explain our business or activity in a brief period of time to those we encounter in social or business settings. Many times this might happen with a chance meeting while riding an elevator to a meeting or business office.

While these chance encounters may only last the one or two minutes while you both share the elevator ride, these encounters these provide opportunities for professional networking and building interest in your business or activity.

With this concept in mind, I offer you my "elevator speech" pulled from several sources, about amateur radio and Field Day. I have used this while promoting our upcoming BVRC Field Day and I thought this could prove useful for you when you talk to others about our interesting hobby.

WHAT IS AMATEUR RADIO?

Often called "ham radio," the amateur radios service has been around for a century. In that time, it's grown into a worldwide community of licensed operators using the airwaves with every conceivable means of communications technology. Its people range in age from youngsters to grandparents. Even rocket scientists and a rock star or two are in the ham ranks. Most, however, are just normal folks like you and me who enjoy learning and being able to transmit voice, data and pictures through the air to unusual places, both near and far, without depending on commercial systems.

WHAT IS FIELD DAY?

The American Radio Relay League Field Day is the single most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June of each year, more than 35,000 radio amateurs gather with their clubs, groups, or simply with friends to operate from remote locations.

It is an excellent opportunity to demonstrate amateur radio to the organizations that amateur radio might serve in an emergency, as well as the general public. We use these same skills when we help with events such as marathons and bike-a-thons; fund-raisers such as walk-a-thons; celebrations such as parades; and exhibits at fairs, street fairs — these are all large, preplanned, non-emergency activities.

But despite the development of very complex, modern communications systems — or maybe because they ARE so complex — ham radio has been called into action again and again to provide communications in crises when it really matters. Amateur radio people (also called "hams") are well known for our communications support in real disaster and post-disaster situations.

Amateur radio operators provide a critical public service for our community; during times of disaster, we are able to provide reliable communications when the normal infrastructure is offline. ARRL, our national organization, has built relationships with several served agencies including FEMA, the Red Cross, the Salvation Army and many others.

N5BVA / BVRC SPECIAL EVENT STATION #1

Dozens of BVRC Members assisted with our Special Events Station at Elm Springs City Park on April 29th, and we appreciate each and every one of them! A tent was used instead of the pavilion to house the stations from the cold 20 mph morning wind. The event was to commemorate the club's 3 decades long history of service to the NW Arkansas region. Two complete stations were operational throughout the day, using phone and Morse Code (SSB & CW). Part of the group participated in a fox hunt using handheld transceivers & directional yagi antennas to locate hidden "Fox" transmitters. Thanks to everyone who participated and stopped by, which totaled around 30! *(Photos courtesy K5XK, W5AEN, and W5DSL.)*



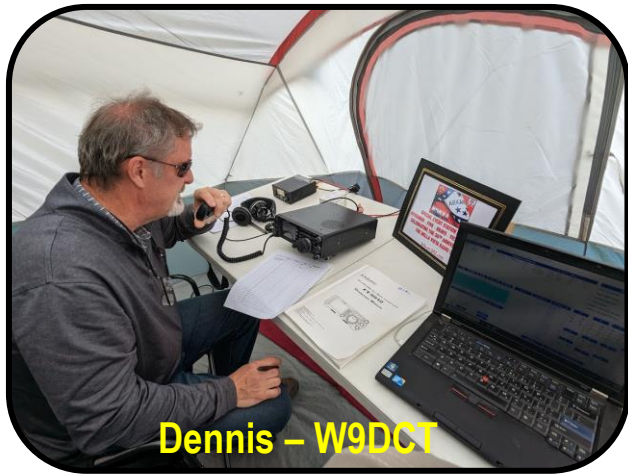
Celebrating
100
YEARS

Vinson-WB5C, Tom-W5XNA & Tom-KN4SLP



Joe-W5AEN, Dana-KI5TGY & Dale - W5DSL





Dennis – W9DCT



Gregg-K5GKH & Glenn-WB5L



Vinson-WV5C



Fred-KI5WVN, Vinson-WV5C, Joe-K5JWR, and Tom-KN4SLP



Joe-W5AEN, Jan-WB5JAN, & Dana-KI5TGY



David Auernheimer (soon to be Technician & General) & Don-K5DB



Bella Vista area Radio Club 30th Anniversary Calendar of Educational & Operating Events 2023

(Mark your calendar and join us for as many events as you can!)

June 24 – 25:

ANNUAL BVRC FIELD DAY

Metfield Skills Park
49 Commonwealth Road
Bella Vista

DON'T MISS IT!

July 22 & 29:

Technician license class, ALETA in Springdale
(Tom, W5XNA – Instructor)
Information on this event is in this issue of *The Signal*

August 19:

3rd Annual BVRC CW Roundup
Information will be in the August issue of *The Signal*

October 14:

N5BVA 30th ANNIVERSARY SPECIAL EVENT STATION #2
Two station portable operation from Park Springs Park –
Bentonville.
More info in future issues of *The Signal*

BVRC VE REPORT

FROM DON COOPER - KC7DC
BVRC VE COORDINATOR
MAY 13, 2022



CONGRATULATIONS!

**Mark Cavanaugh – KJ5BBU - Centerton
New Technician!**

**Johnny Stowers – KG6ZRX – Lincoln
New General!**

**Mike Schroeder – NØALJ – Rogers
New Amateur Extra!**

Test sessions are conducted each 2nd Saturday of the month:

- 10 am at Shiloh Museum, 118 W. Johnson Ave, Springdale and
- 2 pm at Bella Vista Fire Station #1, 103 NE Towncenter, Bella Vista

*Help promote the availability of the Club's monthly test sessions.
Tell your friends and acquaintances!*

• welcome •
NEW MEMBERS

MICHAEL COWEN — PEA RIDGE
CURT PORTER — KK7HNX — FARMINGTON
CADE PETERSEN — KC7MDT — BELLA VISTA
JOHN BAKER — N5DDZ — SPRINGDALE
ROBERT EOFF - TONTITOWN

2023 TECHNICIAN CLASS
COMING SOON!
JULY 22 & 29, 2023

BVRC Past President and current Public Information Officer/Membership Coordinator Tom Northfell – W5XNA announces that he will be the instructor for the 2023 BVRC Technician radio license class on two consecutive Saturdays in July, the 22nd and 29th. Be sure and tell all your family and friends that you think would be interested in obtaining their entry level FCC amateur license! **Registration for the class will begin July 1.** Here are the current details:

Dates and times: Saturday, July 22 and Saturday July 29, 9am – 3pm

Testing: There will be a VE test session immediately following the conclusion of the July 29 class at 4pm. (Test fee is \$15.00, \$5.00 for persons 17 years of age or younger.)

Location: Arkansas Law Enforcement Training Academy
3242 S. Downum Road
Springdale, AR 72764

License Manual: Technician Class Manual - 2022/2026 Element 2- Gordon West WB6NOA
Regular price: \$29.95 (A 10-20% discount will apply per the # of enrollees for the class.)

Free Class: Although there will be a fee for the manual and the license exam, the class is free!

Information: If you need more information, contact
Tom at: w5xna@arri.net



Be sure and spread the word to interested persons wishing to begin their ham radio adventure!

**BVRC
NEEDS
YOU!**



**FOR
FIELD DAY 2023
JUNE 24-25**

From Tom Northfell – W5XNA, 2023 Field Day Coordinator



The annual ARRL Field Day is the last weekend in June (24-25). The Bella Vista Area Radio Club will once again participate. ARRL Field Day has been an annual event since 1933, and remains the most popular event in ham radio. Last year,

BVRC had an award winning FD. We were 1st place in Category 3A-Commercial. We tallied 1,589 QSOs for all modes and scored a grand total of 6,622 points. The 2nd place station was over 2,500 points behind us.

All Hands on Deck! Volunteer! Operate! Have Fun!

BVRC 2023 FIELD DAY SCHEDULE

Friday, June 23:

Location - Metfield Skills Park, Bella Vista, AR

Time: 1 PM - A crew of volunteers for pre - antenna setup

Saturday, June 24

Time: 8 - 9 am, station and antenna setup

Station Captains: CW Captain - Chuck KM5G, SSB Captain - Vinson WV5C,

Digital Captain - Joe W5AEN, GOTR (Get on the Air) Co-Captains - Dana W5DGH & Robert K5NZV

Talk-In: 147.255/444.1, (YLs or teens would be appreciated to help with this position.)

Field Day Agenda

Saturday, June 24

12:30 pm: Welcome, BVRC President Jan Hagan – WB5JAN

12:40 pm: Proclamation by Bella Vista Mayor

12:45 pm: Reading of The Radio Amateur's Code, Don – K5DB

12:50 pm: Reading/synopsis of the ARRL FD Rules, Tom – W5XNA

1:00 pm: Field Day 2023 contest begins

1:00 pm – 6:00pm: Parking Lot Tailgate

2:00 pm: VE Testing, Don – KC7DC & Don – K5DB

4:00pm: Fox Hunt, Vinson – WV5C

6:00 pm: Dinner, Hospitality Committee Bill – KG5ZCI & Alan – KEØQFO

After 6:00 pm – Saturday, June 24

- “The Nocturnals” operating dusk to dawn (we need some folks willing to operate overnight)
- “The Diurnals” operating down to the finish line 12:59:59 local time. (help us make a strong finish)

Sunday, June 25

6:00 am – 9:00 am: Breakfast run (local Bella Vista fast food)

1:00 pm: Tear down/dismantle stations

(Some of us will have been up for 30+ hours - volunteers appreciated.)

If you would like to volunteer for any position to assist the Club in another successful Field Day, contact Tom – W5NXA at: w5xna@arrl.net



BVRC MEMBER GRADUATES FROM UNIVERSITY OF ARKANSAS

Bella Vista area Radio Club conveys a HUGE congratulations to Jon Williams – K5DVT on his Bachelor’s Degree from the University of Arkansas. Jon has been a member of BVRC for many years and got his first amateur license when he was 11 years old. Jon has come a long way since then in learning and applying his knowledge in amateur radio, especially with VHF/UHF. Jon owns and operates the Northwest Arkansas Skywarn Link System on which the BVRC Ham 101 Net convenes on Tuesday evenings. He also made a stellar donation of the 444.100 repeater to BVRC which is one of the club’s dual repeaters. We are proud to have Jon in the club and wish him the very best in the coming years CONGRATS, JON!!!!!!!!!!!!!!



BVRC Public Information Officer Tom – W5XNA, represented BVRC in attending the graduation of Jon – K5DVT.



CONTESTING – AN IRRITANT OR A MEANS TO BETTER OPERATING?

By Don — K5DB

BVRC is getting ready for what should be another very successful Field Day, the biggest U.S. event of the year in amateur radio. Field Day's prime objective is the training of radio amateurs in preparedness of emergencies, natural disasters, etc. Each year, veterans of amateur radio sharpen their "set-up skills" in going through preparations for emergency-type communications, while at the same time pass these skills on to newcomers in the hobby. It is a great tool for fellowship, technical talk, sharpening operating skills, and in many cases lasting bonds within the ranks of the amateur radio fraternity.

What follows after the Field Day setup is a 24-hour contest that is the simplest and most fun event of the year. The contest simulates message passing and handling. The exchange required between participating Field Day stations simply consists of the station's callsign, a number (# of transmitters being used), a letter (denoting the operating class the station is participating in), and the station's ARRL section designator. It's that simple. This format accomplishes the objective of anyone being able to comfortably participate in the contest.

With FD just around the corner on June 24-25, also comes the age-old debate concerning contesting. When it comes to the ham populace, there is generally no "gray area" when this topic is brought up. Most hams either love it...or hate it, for the various reasons which they adamantly state when the debate ensues.

We are featuring the following article in this month's issue of THE SIGNAL, not as an editorial, but simply as an informational / educational / entertaining offering in an attempt to – at least somewhat – resolve that debate. And, whether you agree or disagree, Field Day is an excellent event opportunity for you to hone your operating skills, no matter what realm of amateur radio you operate in. If contesting is not your "thing", there is absolutely nothing wrong with that. If, however, you get bitten by the "contesting bug", there is nothing wrong with that either. This article simply contains some points as to the positive outcome that contesting can bring, along with some other hopefully useful information, and now is an excellent opportunity to share it with you, with Field Day on our mind. Please enjoy:

There usually is no common ground when the word "contest" is mentioned in ham radio circles. Usually operators either love contests or they hate them.

The hams who deplore contests are usually those who have their routine roundtable on a given frequency either interrupted by a contester who apathetically moves onto their frequency without checking to first see if it's in use, and blindly transmitting "CQ Contest!" – which is rude and very inconsiderate.

This issue usually occurs during weekends when contests normally take place. If it happened twice a year, it might not be that big of an issue – but contests happen year 'round. On any given weekend, there is some type of contest going on, so these hams do have a legitimate complaint.

On the other hand, some of these same type operators attempt to “muscle their way on frequency” by telling a friendly contester – who has already been operating on that frequency for two hours – their “group” operates on that frequency every (day) at (time) and “you need to QSY” – which is also rude. The airwaves are free, and a cooperative spirit should be the overriding factor to these interactions.

Then there are those hams who live for contests. The competitive activity gets the adrenaline gland kicked-in and for these operators, this is what ham radio is all about. They live for the radio sport side of ham radio.

The next group is the casual contester. The operators in this group participate in Field Day and two or three other contests. When Thanksgiving comes around they think more about football than the CQ World Wide CW Contest.

If you are new to amateur radio, and in particular HF operating, there is absolutely nothing wrong with engaging in a friendly roundtable group or net. They are fun, entertaining, and educational. However, there are advantages to contesting as well.

Contesting can be a great training tool for you, especially if you are a new operator. Many beginning hams who make the decision to get started on HF, want to get the wall covered in QSL cards, achievement certificates, and awards. It's great to get that Worked All States (WAS) and DX Century Club (DXCC) certificate as a testament to your operating skill and perseverance. Contests and special operating events can be big keys to success in these areas. Operating events like QSO Parties and other contests can help to fill out your log for needed contacts. Some events may not jump out as helpful, but try them anyway. In February and October the School Club Roundups can possibly net you some contacts for states that you might not have worked as yet, and above all, help introduce young people to the world of amateur radio. The Rookie Roundups in April, August, and December can help with that as well.

FIELD DAY is another great way to snag states, counties, and/or countries. For many hams, this is the ONLY contest they work. On CW, check the FISTS sprints as well. The ARRL Sweepstakes CW and ARRL Sweepstakes Phone weekends in November are another way to get a lot of activity in the log. In March and May, the CQ WPX (Worked Prefix) contest is another opportunity to rack-up contacts on the national and international scale. If you are diligent and persistent, you *can* acquire DXCC in a weekend during the CQ Worldwide and ARRL International DX contests.

Sometimes, contesting will push you to try other modes and upgrade your operating equipment and techniques as well. In the late '90s it dawned on many operators that running mechanical RTTY or even a solid state terminal unit was no longer going to cut it in contests. Even by formatting tapes to work about five contacts at a time, the computer based RTTY operators were working three times the amount of contacts. The realization was that teletype terminal units were no longer sufficient for modern teletype operations. It has also becoming obvious that ears, brain, key paddle, paper, and pen can't compete against computer-based CW operations in CW contests. However, if you can handle 15-30 wpm in your head and are good on the paddle, you can still hold your own in a lot of CW contests, although it will be challenging.

It used to be that if you were a good CW operator and had a TTY demodulator, you were good-to-go for most modes and activities. Those days are over. You have to acquire the software for the newer modes (FT8), computer logging, and contesting programs to be up to speed on contesting activities. The bottom-line result to all this, is that you will be a better operator and your station will be more versatile for not only contesting, but for **EMERGENCY and DISASTER communications.**

Here are some URLs that might prove to be helpful: www.hornucopia.com/ and www.contesting.com/. At the top of the *contesting.com* page you will find contesting tips and what you need to get started. On the *hornucopia* site is a contest calendar, so you can plan for upcoming contest activities. Another site to check is www.arrl.org/contests/. It is also a good idea to check “Contest Corral” in QST every month and follow up on the URLs listed for specific contests.

If you have never gotten on the mic, the key, or the keyboard, all of the preceding might seem like just a bunch of words, so here is a step-by-step approach to getting started in contesting:

- Get started in a friendly environment. Operate during Field Day. If you are new to CW log and operate on the CW station, as well as SSB and Digital. Talk to the other operators – find out how the timing works. GET ON THE AIR, talk to the other ops, learn by doing.
- Start with smaller activities like the State QSO Parties, and FIST Sprints. Once you are comfortable with these you are ready to move up to the international “biggies” like the CQ Worldwide.
- Stay up late. Contest activity tends to lighten up during the wee hours. That’s because even die-hard contesters get tired just like everyone else.
- Keep propagation patterns in mind. You will be more successful if you are taking advantage of the best radio propagation.
- Learn from veteran contest operators in the club.

And above all, remember – it’s designed to be fun!

If you have just acquired your General and/or Amateur Extra radio license, welcome to the world of HF! You possibly have a thousand questions on what to do and where to go from here. Of course, hands-on learning is the best way to acquire knowledge, and any of our veteran BVRC ops will be happy to help you in your endeavor to get on the air and comfortably operate with your new HF privileges, with our HAM 101 weekly nets, the ELMER 911 program, the BVRC website, and BVRC Facebook page.

In the meantime, the ARRL has an excellent book by Steve Ford – WB8IMY that you will invariably find useful: *YOUR FIRST AMATEUR RADIO HF STATION*.

In this publication, you will find many excellent starting points for such areas as:

- What kind of antenna should I use?
- What radio should I buy?
- Do I need an amplifier?
- What about a computer?
- What types of accessories do I need?
- Electricity – good and bad.

You can order your copy direct from ARRL by clicking [here](#). The price is \$22.95, but if you’re an ARRL member, your price is \$19.95.



For the Love of Crystal Radios

BY MIKE SCHROEDER – NØALJ

Many Hams have at least tried a Crystal Radio at one time or another.

They have appeared in ham radio and hobbyist periodicals at one time or another. I have had a great fascination for them for years and still do. They are very simple radio receivers for both the AM broadcast band and even shortwave frequencies, are fun to build, and teach the basic principles of a radio receiver. The radio wave sent out by a broadcast station is a high frequency wave called a carrier wave. For Amplitude Modulation, these radio frequency waves are being changed in strength, or modulated, by audio waves. The device that removes the modulation from the radio frequency signal is called a detector. One of the simplest detectors is a semiconductor made of germanium called a crystal diode. In figure A is the earliest crystal set consisting of merely a crystal diode, antenna, ground and headset or earpiece. Unfortunately it lacked a frequency select elements of a tuned circuit to separate stations. Usually the strongest signal wins out, but it was possible to hear more than one station at a time.

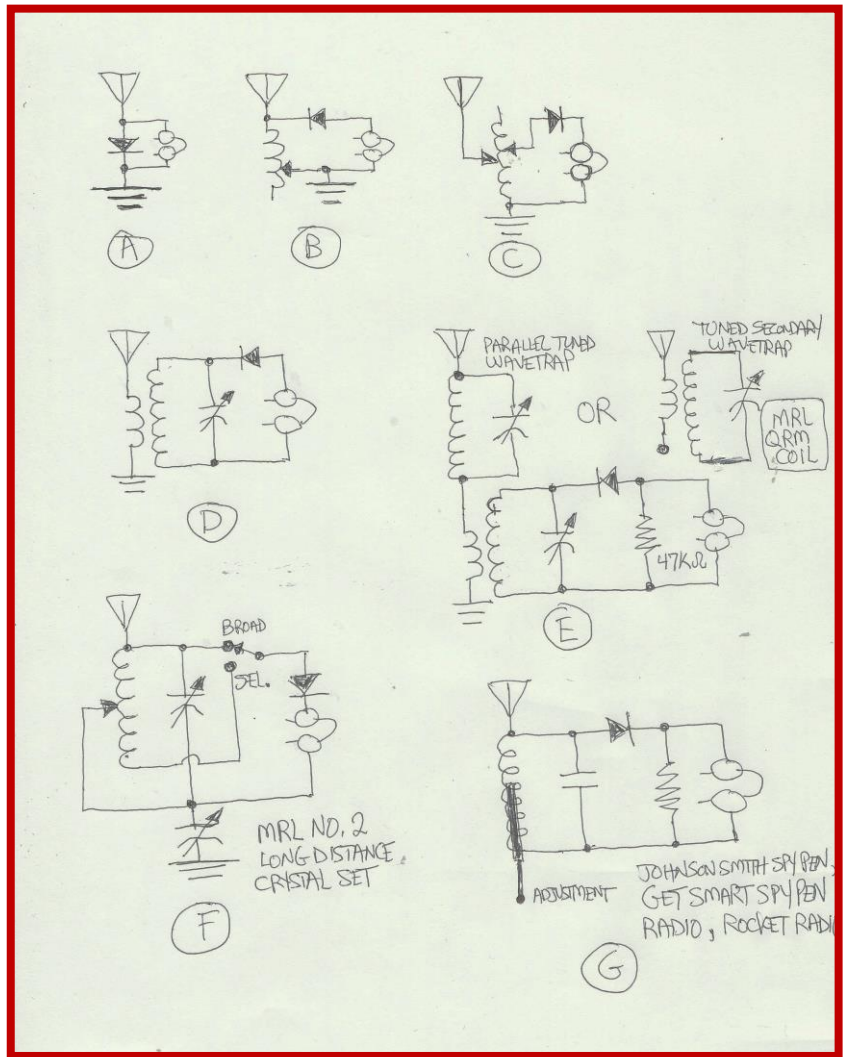


Next came the Foxhole crystal Sets which added the ability to have a slide tuned coil as in Figure B and improved double slide tuned coil in Figure C . Here the two sliding contacts on the coil allowed the impedance of the radio to be adjusted to match the antenna as the radio was tuned, which resulted in stronger reception. Impedance matching is an important principle in crystal radio design. The impedance of the antenna-ground system is usually lower than the impedance of the receiver's tuned circuit. In the two-slider circuit, popular in the wireless era, both the antenna and detector circuit were attached to the coil with sliding contacts allowing adjustment of both the resonant frequency and the turns ratio. In order to

match the antenna impedance to the receiver's impedance, the antenna was connected across only a portion of the tuning coil's turns. This makes the tuning coil help match impedance in addition to providing the station tuning.

My early crystal radios were the Spy Pen Radio Crystal set I got from the Johnson Smith catalog. I also found a Get Smart Spy Pen Radio at a local store back in the early 70's as a teen. These were fun crystal radios and simple to operate. The simple slider tuned circuit was merely a ferrite slug that was able to slide in and out of the tuning coil - see Figure G. You could clip the antenna lead to something metal and pick up a local station. Reception was greatly improved when I tried clipping the antenna lead to the dial stop of the telephone in our house. Next came an outdoor long wire antenna which was the best reception of all. I looked forward to going to bed at night and listening to my Spy Pen Radio at night when I got all kinds of radio stations on my outdoor long wire antenna! Another variation of this crystal set was the Rocket Radio.

A 50-ft outdoor longwire is a good starter antenna but longer wires bring in the signals better. Some people have also built multi-wire long wire antennas with spreaders to allow a 50-ft antenna to become more effective by having four 50 foot long wires tied together at the ends and connected to a single lead in wire on one end. A good ground is important too and I recommend a knife switch so that you can connect the outdoor long wire to ground for when storms are in the area.



Figures A - G



My first attempt at building my own Crystal Radio came when I got a hold of Dad's book Electricity And Electronics Basic by Steinberg/Ford. I built a Foxhole Slider Crystal Radio first from it then a much better Crystal Set found in Figure D. It was a more sophisticated Crystal Set featuring magnetically coupled a primary and secondary coils which provides sharper tuning and improves selectivity of the tuned circuit. This coupling transformer also functions as an impedance matching transformer, allowing a better match of the antenna impedance to the rest of the



receiver. This became my staple crystal set. I found that even further improvements could be made by adding something called a wave trap which was basically a second tuned circuit added to the antenna input of the receiver. The parallel tuned wave trap could be used to null out a strong nearby station and also offer some boosting effects to weaker stations - see Figure E. I took my board mounted favorite crystal radio and moved it into a nice project case I found in the arts and crafts section at Wal-Mart which was actually a display case meant for a baseball. The wave trap became an integral part of the final receiver. I also even built a crystal set with a large rotatable loop antenna that picked up stations indoors, without an outdoor long wire antenna, but was more of a novelty as it's reception was limited.

Over time, I had discovered a company known as Modern Radio Labs and built their No. 2 Long Distance Crystal Set kit. This was the first crystal radio that I built that also received shortwave stations. It also featured my first crystal set with an adjustable steel Galena Catwhisker Detector. In the 80's, they had a great catalog of kits, parts and reference booklets for crystal set builders. I also found another company called Peebles Originals and ordered their AM/SW crystal set kit. Sadly, they both are no longer marketing kits, but a lot of their documents can still be found online. Today you can still find crystal set kits to build from a few crystal set vendors who are still around including Borden Radio Company, United Nuclear Scientific, and The Xtal Set Society. They have some really nice kits, and both offer complete outdoor antenna kits for crystal radio reception. The *Stay Tuned* crystal radio website also has online crystal set project building documentation. You can also try building antenna tuner circuits to boost reception further, Borden Radio sells a kit for one. I have amused myself when I connected my DC Multimeter to the headset output of my crystal set tuned to a strong local AM radio station and was able to get 3 VDC output on the meter!

73 – Mike, NØALJ



The largest amateur radio club in Arkansas, thanks to you! Thanks for your support; be sure to attend our great monthly meetings and club events! We appreciate you!

RAZORBACK CONTEST CLUB EXPERIENCES FUN AND REWARDING PORTABLE OPERATION DURING 2023 ARKANSAS QSO PARTY



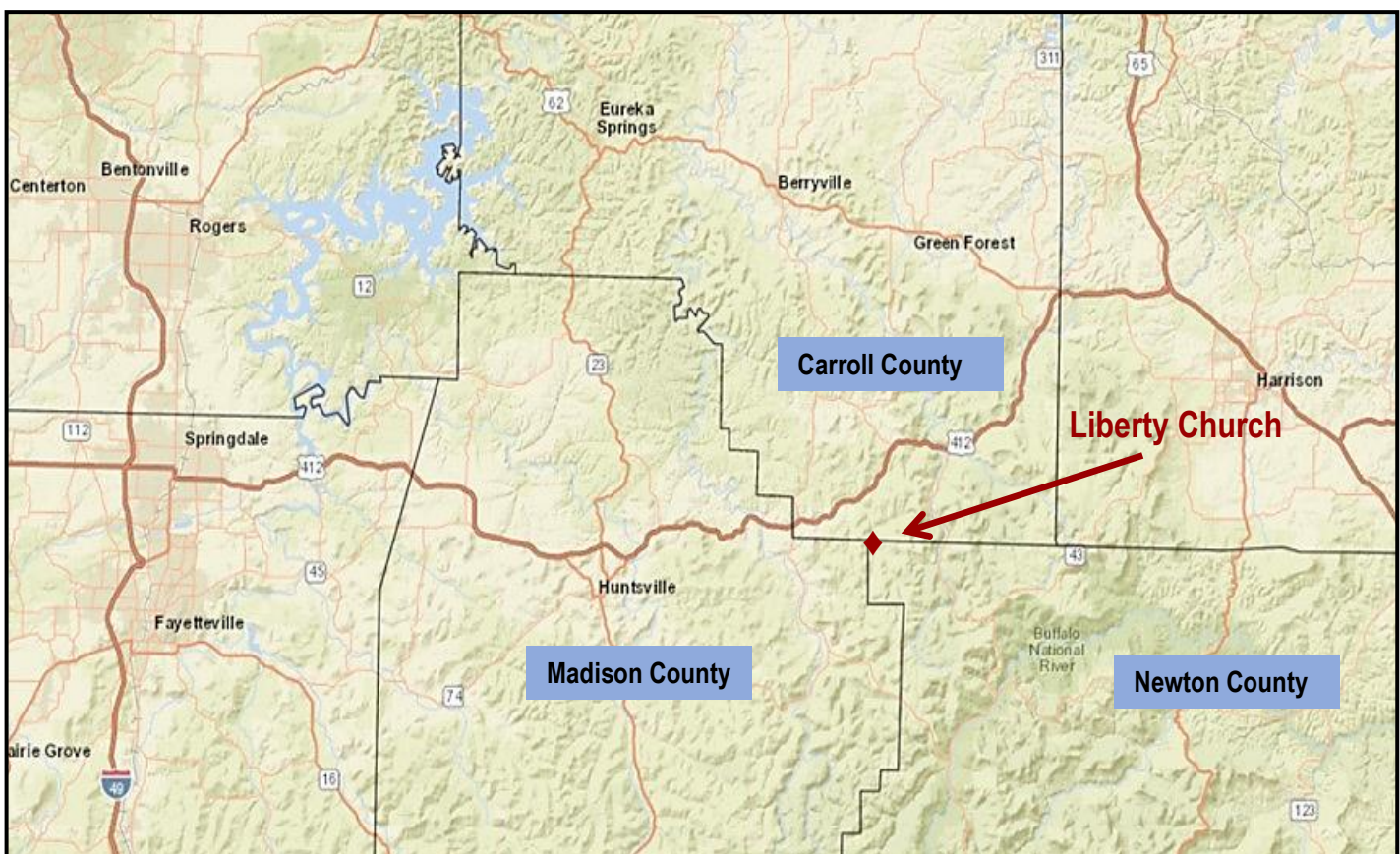
Several members of Bella Vista area Radio Club are also members of the Razorback Contest Club, a small contingent of radio amateurs who really enjoy the world of amateur radio contesting. This year, 6 members of the club set up portable station W5YO, running two transmitters on SSB and CW. In 10 hours of operation, the club scored 1,278 QSOs and worked 43 states, 6 Canadian provinces, and 4 DX stations.

The RCC operates a couple of times a year and in the past recent years has activated several Special Event Stations, as well as participating in the Arkansas QSO Party and several ARRL contests.

They traveled to Liberty Church, which is also about 300 feet from the intersection of three county lines – Newton, Madison, and Carroll. The church is located on a dirt county road 3 miles south of the Dry Fork community on US-412. By operating from this tri-county line location, anyone who worked the station received contact credit for working 3 counties with just one contact – a “three-fer”. The station operated on generator power.

The multi-operator station included Robert Hill – K5NZV, Dana Hill – W5DGH, Jon Williams – K5DVT, Tom Northfell – W5XNA, Vinson Carter – WV5C, and Don Banta – K5DB.

Here are some photos of the operation (*photos by K5DB*).





Portable station was setup under the canopy adjoining Liberty Church, established 1844.



One of two Windom dipoles at 70 feet



Robert – K5NZV on the CW station



Vinson – WV5C makes a SSB QSO with Tom – W5XNA logging



Jon – K5DVT on the SSB station with Vinson – WV5C logging

(K5NZV & W5XNA at the CW station in the background)



Dana – W5DGH makes another station happy with an Arkansas contact as OM Robert – K5NZV puts the QSO in the log

THE DXCC DEN



By Don – K5DB

This month's featured country: Clipperton Island

Callsign prefixes: FO, TX

Clipperton Island is a 3.4 sq. mi. uninhabited French coral atoll in the eastern Pacific Ocean, and is the only French possession in the north Pacific Ocean. Clipperton has had no permanent inhabitants since 1945. It is visited on occasion by fishermen, French Navy patrols, scientific researchers, and film crews. It is located 583 miles southwest of Mexico. Clipperton is a ring-shaped atoll that completely encloses a stagnant freshwater lagoon and measures 7.5 miles in circumference and 2.8 square miles in area. The island is the only coral island in the eastern Pacific. It is inhabited by various bird species and millions of orange land crabs.

The date of discovery of the island has been inconsistently reported and debated. It is generally noted to first be discovered by Spaniard Álvaro de Saavedra Cerón on November 15, 1528. The expedition was commissioned by Hernándo Cortés, the Spanish Conquistador in Mexico, to find a route to the Philippines. Others claim that Portuguese-born Spanish explorer Ferdinand Magellan was the first to find it seven years earlier in 1521, which would make Clipperton and certain islands of Micronesia the first areas of the Pacific to be reached by Europeans.



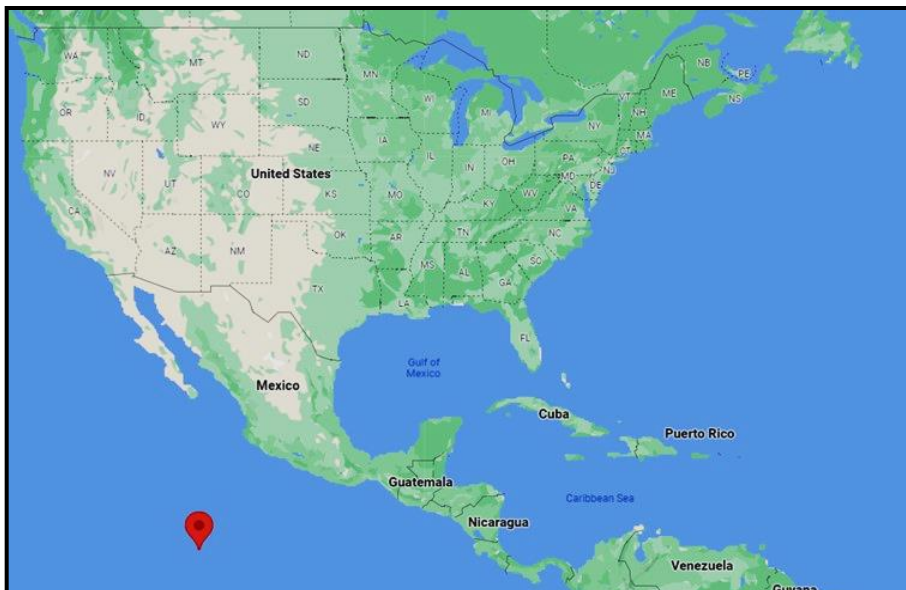
The island was rediscovered on Good Friday, April 3, 1711, by Frenchmen Martin de Chassiron and Michel Dubocage, commanding the French ships *La Princesse* and *La Découverte*. In August 1825, American sea captain Benjamin Morrell made the first recorded landing on Clipperton. Morrell made a detailed report of the island's vegetation.

The island's current name comes from John Clipperton, an English pirate and privateer, who fought the Spanish during the early 18th century and who is said to have passed by the island. Some sources claim that he used it as a base for his raids on shipping.

In the amateur radio world, Clipperton Island is exciting to work due to its semi-rarity and is especially exciting for those of us in North America as it is in our hemisphere. Locales in the eastern hemisphere can be extremely difficult to work due to band conditions and working those locations through the thousands of other hams in Asia, Europe, Africa, etc. Since Clipperton is in the western hemisphere as we are, it is somewhat easier to work although you still have to deal with the large pileups.



Clipperton has been climbing-up the Most Wanted DXCC Countries List over the past several years, as it has not been activated in 8 years. It currently ranks as the 38th most wanted entity (country), out of the 340 current entities. *The only way you can work Clipperton is if a DXpedition goes there.* Recently, past DXpeditions have been: FOØAAA in 2000, TX5C in 2008, TX5K in 2013, and a solo operation by Alain – F6BFH who was there with a scientific expedition and made a few thousand contacts in 2015 as TX5P.



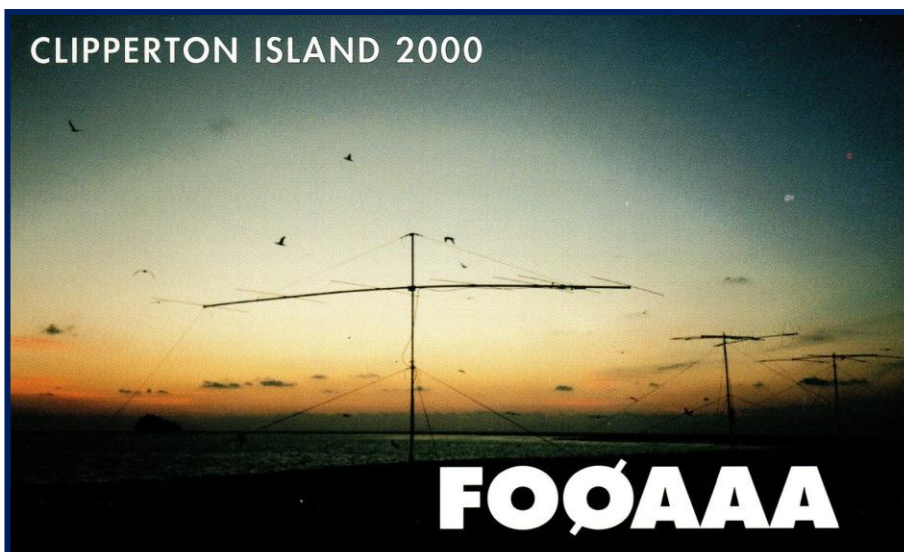
Location of Clipperton Island

The **BIG NEWS** for all newcomers to DXing that have not as yet worked Clipperton, is we have a new DXpedition coming up! The team consists of hams from France, United States, Germany, Hungary, Brazil, and Tajikistan. They will be using the callsign TX5S. The team will be operational on 160-6 meters, SSB, CW, RTTY and FT8. They plan to leave San Diego, California on Jan. 11, 2024 on The Shogun and arrive at Clipperton Jan. 17, 2024.



The Shogun has been to Clipperton many times for DXpeditions and scientific expeditions. They will depart from, and return to, San Diego. The transit time is expected to be 6 days each way. The ship's crew of 7 seamen will manage all equipment and people transport to and from the island. Their current schedule is to be on the island for 16 days. The weather will be tropical with hot temperatures,

high humidity, and strong tropical winds. They will use tents for operating, eating, and sleeping. *So, here's your big chance to work Clipperton for the first time, or add more band contacts to your DXing adventures!* If you would like to see a video of the 2000 Clipperton Island FOØAAA DXpedition when a 12-member team activated the island, click [here](#).



My QSL from the 2000 Dxpediton

From the ARRL.....

NASA NAMES THREE HAMS FOR ARTEMIS II MOON MISSION CREW

NASA and the Canadian Space Agency (CSA) announced the four astronauts who will venture around the moon on Artemis II. This will be the first crewed mission on NASA's path to establishing long-term moon science and exploration development. The agencies revealed the crew members on Monday, April 3, 2023, during an event at Ellington Field near NASA's Johnson Space Center in Houston, Texas. Three of the four crew members are amateur radio operators.



Starting at left and going clockwise: Mission Specialist 1 Christina Koch, Pilot Victor Glover-KI5BKC, Mission Specialist 2 Jeremy Hansen-KF5LKU, and Commander Reid Wiseman-KF5LKT.

"The Artemis II crew represents thousands of people working tirelessly to bring us to the stars. This is their crew, this is our crew, this is humanity's crew," said NASA Administrator Bill Nelson. "NASA astronauts Reid Wiseman, Victor Glover, and Christina Hammock Koch, and CSA astronaut Jeremy Hansen, each has their own story, but together, they represent our creed: E pluribus unum - out of many, one. Together, we are ushering in a new era of exploration for a new generation of star sailors and dreamers - the Artemis Generation."

Christina Koch, the only non-ham of the crew, had planned to study and take her amateur license exam in 2019, but her flight was suddenly rescheduled 6 months earlier than originally planned. She had to immediately begin preparing for her flight instead of studying.

The Artemis II mission is scheduled to launch in November 2024. The approximately 10-day flight test will launch on the agency's powerful Space Launch System rocket, prove the Orion spacecraft's life-support systems, and validate

the capabilities and techniques needed for humans to live and work in deep space.

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