



Full Quieting

The Official Journal of The Bellbrook Amateur Radio Club



April 2026 — Issue 56

In This Issue

From the Editor	1
Full Quieting Masthead	2
Member Interview Questions	2
President’s Corner	3
What’s Up BARC?	4
March’s POTA Adventure	4
Sugar Maple Festival Parade Info	6
1130 DMR Net Stats for 2026	6
BARC Swag Information	7
Officer, Director, and Coordinator Inputs	8
BARC Event Calendar	9
BARC Movie and Dessert Night	10
Lunch Bunch Plans for the Month	11
Lunch Bunch Calendar	12
POTA Adventures in April	13
April HamClock Update	14
Making the Most of the Clubhouse	20
My Experience With PiAware ADS-B Software	22
Repair of Bose Wave Radio	27
Special Event Stations for the Month	30
Amateur License Test Questions	32
Editorial Policy and Style Guidelines	35
Miscellaneous BARC Information	37

From the Editor

Welcome to April, spring is here! It’s always a good feeling to dig out of winter. While we may not be done with cold weather, the cold grip is loosening and will soon be a memory. With that comes the opportunity in amateur radio to go outdoors, for example, taking part in a POTA adventure, helping BARC raise our new hexbeam and assess condition of our existing antennas, repairing your own antennas from storm damage or putting up new antennas on your own QTH. Get out and enjoy, but if you’re climbing please be extra cautious and safe.

Another great outdoor activity is the start of parade season. The Bellbrook Sugar Maple Festival parade is Saturday April 25th and BARC will be providing support on the parade route. Look for details this month from Don KB8PSL, our esteemed community service coordinator, for instructions and how to sign up. We can never have too many volunteers!

Your editor has been busy writing articles this month. I committed to writing about HamClock every month until things settle into a steady state; catch up on that here. I built a PiAware ADS-B decoder based on John W8LRJ’s Tech Night presentation. It’s a work in progress but I’m impressed with the performance of the homemade antenna, even indoors! Lastly, I talk about the pitfalls of electrolytic capacitors as they age out and cause circuit problems. And our Club President has been busy making use of our club station and inviting you all to join us. The upcoming Open House would be a great opportunity to get info on what’s there and how to make use of it.

Lastly, I’d like to make another invitation for you to take some time to look over what you’ve done in amateur radio lately and write it up to share with the club. While it’s interesting to me to describe what I’ve been up to, I represent only a small part of our very vibrant club. I’d love the opportunity to hear what you’ve been up to and learn something new.

73, Ray Hitt, N8VMX
Full Quieting Editor



Bellbrook Sugar Maple Festival: April 24-26

2026 BARC Officers and Directors

President: Geoff Kline, [KI5VNB](#)

Vice President: Eric Bramini, [KC8OPY](#)

Secretary: Jim Gifford, [N8KET](#)

Treasurer: Thomas McClory [KE8FWZ](#)

Senior Director: Don Macon, [KE8WVJ](#)

Junior Director: Glenn Rodgers, [WI8O](#)

2026 Coordinators

Antennas: Ray Hitt, [N8VMX](#)

Clubhouse: Jim Lusk, [KC8EFD](#)

Comm Center: John Westerkamp, [W8LRJ](#)

Community Service: Don Parker, [KB8PSL](#)

Contesting: Ken Gunton, [W8ASA](#)

Education: Bob French, [AC8ZU](#)

Emergency Preparedness: Jim Lusk, [KC8EFD](#)

Field Day: Eric Bramini, [KC8OPY](#)

Full Quieting Editor: Ray Hitt, [N8VMX](#)

Hospitality & Librarian: Natinka Siwecki, [KD8NUA](#)

IT: John Westerkamp, [W8LRJ](#)

Lunch Bunch: Jim Totten, [WA8HUB](#)

Membership: Jeff Pursel, [KJ6XC](#)

Net: Paul Sharp, [WS8R](#)

QSLs: vacant

Repeater: Russ Roysden, [N8NPT](#)

Tech Night: Bob French [AC8ZU](#)

Webmaster: Doug Hayward [K8DRH](#)

BARC Net: Every Sunday, 8 PM Local

147.045 (+) (118.8 PL enc and dec) [Alt = 443.675]

Directions to BARC Clubhouse and Radio Room

St. Pierre Education Center

3757 Upper Bellbrook Rd

Bellbrook, OH 45305

[Map Link](#)

Park in front of building, enter in front-right door.

Conference room: Take first hallway to the left, conference room is on the right. **Radio Room:** Straight down hallway, left turn into gym. Door on left.

Member Interviews

BARC wants to hear from you!

Whether you're a long-time BARC member or a brand new one, young or old, please tell us about yourself. Here are some simple guidelines, although you're free to use whatever format you're comfortable with.

This page is all about you. It's your chance to let BARC members to get to know you better.

Here's are a few sample questions to help get you started, but you can write whatever you want.

Please send us some pictures of anything you want BARC to see (you, station, antennas, pets, family, anything)

- When you were first licensed?
- How did you learn about Ham Radio (HR)?
- Why did you become a Ham?
- What are your current HR interests?
- What are you most passionate about regarding HR?
- Tell us about your stations (past, present, and future)
- What was the most exciting thing that happened to you in HR?
- What do you do for a living?
- Would you like to say something about your family?
- Do you have other hobbies or interests?
- Any other comments for BARC?



President's Corner

Spring is here—and it showed up fast! I've already had to dust off the lawn mower and make the first cut of the season. The warmer weather does bring some good news, though: we'll be finishing up the antenna installations at the clubhouse, and our busy season of events is right around the corner.

Next month is Hamvention, followed shortly by Field Day—so plenty of opportunities to get on the air and have some fun. Also, don't forget we're planning a swap meet in the parking lot before our next membership meeting. More details will be sent out ahead of the April meeting.

We'll also have the radio room open for the ARRL Rookie Roundup this month, and we're planning to make it an open house as well. If you've never operated from the clubhouse, this is a great chance to stop by. We'll show you how to get into the building, how to use the equipment, and answer any questions you have.

Finally, we're excited to share news of what may be the most disruptive amateur radio product in decades: **The WhisperLink™ Ultra-QRP Transceiver.**

Designed for extreme portability, unmatched efficiency, and zero-RFI operation, the WhisperLink™ is poised to redefine field and emergency communications.

Key Features:

- **Unlimited Battery Life** — no charging required
- **Zero Noise Floor** — immune to QRM, QRN, and interference
- **Perfect Signal Clarity** — crystal-clear audio in all conditions
- **No Tuning Required** — resonates on all bands automatically
- **Ultra-Lightweight** — less than 3 ounces

Each WhisperLink™ kit is priced at just \$20 and includes:

- Two precision-engineered acoustic transducer modules
- One ultra-low-loss signal propagation medium
- A quick-start guide

Early users report:

"I worked stations across the room with 100% copy."

"No SWR issues whatsoever."

"Finally, a radio my HOA can't complain about."

73 and April Fools,

Geoff Kline, [K15VNB](#)

President, Bellbrook Amateur Radio Club



What's Up BARC?

What's Up BARC?

Ray Hitt, [N8VMX](#)

Announcements regarding any member news including: new equipment, antennas, grandchildren, children, pets, operating news, etc.



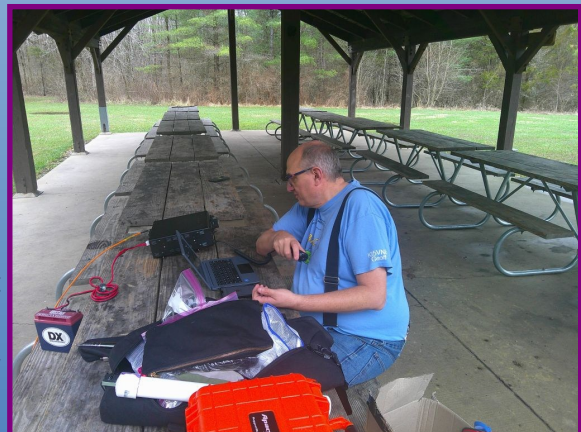
BARC 1st Saturday POTA Event in March

Several of us went to Slim's in Spring Valley early Saturday morning March 7th to eat breakfast together then split up and cover several State Parks in the vicinity of Spring Valley and Caesar Creek. I'm showing several of the writeups I got from the different teams. This was a fun event, POTA is something that anyone can catch the bug for.

Story 1: Ray N8VMX: I drove from Bellbrook down to Spring Valley to get breakfast with the BARC POTA crew. I took the back way there since we had some flooded roads around Bellbrook. It was very marshy at Slim's, the athletic fields nearby looked like a small pond.

When I went into Slim's, thinking I was a few minutes early, much to my surprise there was only a seat or two left at the table! We had a great breakfast, and sorted out where everyone was headed. Since I was going to work FT-8 and my computer gear was already taking up the passenger seat and the back seats, I went solo to Caesar Creek Gorge State Nature Preserve (US-7847) which is touching the Little Miami River State Park (there's a Little Miami bike trail that runs past the parking lot that is part of the park—making it a "two-fer"). Getting there was interesting because when I got down to Cowen, taking the bridge from US42 across the Little Miami to the access road to Caesar Creek Gorge was impossible, it was closed due to flood waters. I had to double back and was thinking of going to a different Caesar Creek park, but all of a sudden my GPS recalculated and I was able to navigate back to Caesar Creek Gorge on the proper side of the river. Once I got set up in the parking lot, it was warm enough I could run with the windows cracked for ventilation, and there was no rain in sight, but the radar said hurry up! I made 13 contacts on FT-8 and was able to secure my equipment and get home and unload my car just before the rain started. Great fun!

Story 2: Geoff KI5VNB and Doug K8DRH : The March POTA outing ended up being a bit different than usual. We started the day with a great breakfast at Slim's, where the food was excellent but the camaraderie was even better. Afterward, Doug and I headed to a group campsite shelter at Caesar Creek State Park (US-1940). It was pretty muddy getting in, but we managed to set up. Since it was Doug's first time, he preferred to observe, which gave us plenty of time to talk through how POTA works and discuss homemade antenna ideas. We



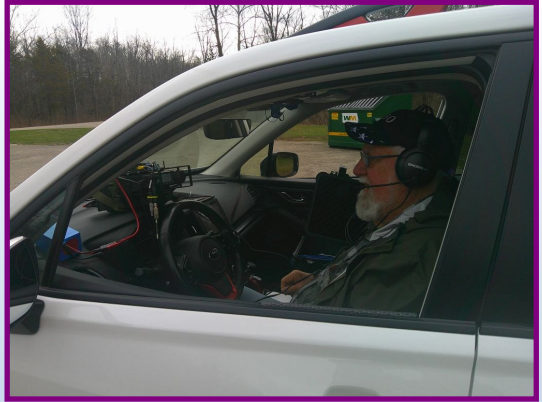
(Continued on next page)



What's Up BARC? (continued)

made a handful of contacts, but not quite enough to activate the park before dark clouds started rolling in and we decided to pack up ahead of an approaching storm.

A few hours later, after the rain had passed, I realized I still had time before midnight UTC. I headed back out to the same campsite and was able to make the remaining QSOs needed to complete the activation. It was the first time I've ever returned the same day to finish an activation, something that had never even crossed my mind before. Living so close to the park definitely worked in my favor this time. I'm looking forward to seeing what April brings.



Story 3: Jim N8KET: Nine BARC members met at Slim's Bar and Grill in Spring Valley for our First Saturday POTA adventure. You may recall that the February adventure was cancelled because of snowy weather; the first Saturday in March brought vastly different bad weather in the form of storms. So, we consumed a delicious breakfast and spread out to the several POTA parks in the southern Miami Valley, in this case the Little Miami River valley.

The weather was fine for the first hour of operating, but massive storm clouds were rolling in from the west. Those who have operated POTA might say, "An hour is plenty of time to activate a park." On most days, that would be true, but on this day we competed with the ARRL SSB DX contest. To say the bands were active would be an understatement.

I had three other members with me at the shelter on the east side of Caesar Creek Lake, next to the camping area. Since I had taken just a 10m antenna, that was our only option this day. The 10m band was open and crowded with contesters. I literally could not find a frequency where we did not find someone transmitting.

So, rather than give up entirely, we chased DX. For two of these fellow BARC members, it was their first DX QSO, which was exciting for all of us. We contacted a Monteverde contest team in Cape Verde; Mario Raul Andraca Rivera in Argentina; and John A. Fore, Pos Chiquito, Aruba.

As the clouds and lightning grew closer we packed up and headed home. The other activators did likewise, although Geoff Kline went back later after the storm and actually activated.



What's Up BARC? (continued)

Sugar Maple Festival Parade—Saturday 25 April 2026



The Sugar Maple parade is an annual public service event. BARC provides emergency communications and parade line up assistance. I'll be sending out an email for volunteers in early April. All BARC members are welcomed to assist with or without an HT. New members are assigned with an experienced member.

We gather at the Bellbrook Community Church at SR725 and Vemco Dr. at 9 A.M. for parade briefing and assignments. I start the parade down the hill at 10:15 A.M. The "official" start time for the parade itself is 10:30 A.M. The parade usually runs about an hour. This is a great opportunity for new ham radio operators to experience working a controlled net operation.

Don - [KB8PSL](#)

Community Service Coordinator

1130 DMR Net—Statistics for 2026

The **1130 DMR Net** meets Monday through Friday on the DMR talk group 310557. This is Tim, N8NQH's East repeater talk group. Details to connect to it are on the last page of every Newsletter.

I started taking statistics in 2026, and here are the results for January through March.

	Check-ins	Average Daily Check-ins	% Increase
Jan-2026	127	6.35	0.00%
Feb-2026	169	8.45	33.07%
Mar-2026	200	9.09	18.34%
Total	496	—	—

Since January, we've had 496 check-ins. The average number of check-ins per day has risen every month from 6.35 check-ins per day in January to 9.09 in March. The month to month percentage growth from the previous month is shown in the chart. The number of check-ins have increased every month in 2026 so far. The number of daily check-ins has ranged from 4-13. The net is starting to attract folks from around the country as well as the UK and Canada.

We're up to a list of 33 people who have checked in from Jan-Mar at least once. Word of mouth is spreading across the DMR and DSTAR nets, so hopefully this net will continue to grow in popularity. We keep hearing that we're a good bunch of hams! Thanks for the compliments, we appreciate it!

Net Control Stations are: Ray N8VMX (Monday), Kevin KF8BHL (Tuesday), Jim WA8HUB (Wednesday), Brian AA4BK (Thursday), and Ian M6PBY (Friday). Kevin KF8BHL just signed up today to be a Tuesday Net Control for the 1130 DMR Net, so check in and wish him luck.

If any of you need help programming your DMR radio to get on the net, please contact Ray [N8VMX](#), we can meet at the clubhouse and set you up.

(Continued on next page)



What's Up BARC? (continued)

BARC Swag from Emerio KE8JNQ

In the April 2025 planning meeting, the club officers approved Emerio KE8JNQ to offer a variety of items for sale all in Blue BARC Color. These items complement the other items being offered for sale from other vendors. Notice that the logo is a larger size so other Amateur Radio Operators can see it better. All BARC members get this discount price. If you need more information or would like to order, contact Emerio KE8JNQ. His telephone number is 937-546-9477.



BARC Swag from Parrot Promo Essentials

We have polo shirts, sweat shirts, hoodies, t-shirts, ball caps, and softshell jackets from Parrot Promo Essentials. You can order them directly from our website, at <https://bellbrookarc.org/wp/order-barc-gear/> These shirts are a little more expensive than those offered by Emerio, but they match the ones you've seen many of us wearing already.

BARC Mugs from Chris Hanselman, AD8OM

For those of you wanting 20 oz insulated BARC mugs, please contact Chris Hanselman, AD8OM, at deeremt@gmail.com. They are offered in Blue with silver print and Black with copper print. Look for some new designs to be unveiled soon to add to your collection!



Officer, Director, and Coordinator Inputs

Secretary: Jim Gifford, [N8KET](#): As secretary I completed minutes of the general meeting and notes of planning. Glenn Rodgers and I also sat at the clubhouse while the electric company installed exit signs. Glenn and I also co-chair the POTA group. We met for the first Saturday event and nine members attended (see story elsewhere in this newsletter). We are also planning the April adventure, story in the newsletter. An email about April's POTA meeting and POTA adventure will be sent soon.

Treasurer: Tom McClory, [KE8FWZ](#): The emergency lighting and exit signs installation in the club station was completed. Final cost was \$761. Recurring club expenses for March were the annual Zoom service plus the monthly Spectrum service for a combined \$343. The club expenses totaled \$1,104 for the month. The income for March consisted of 3 membership renewals and a \$64 Kroger Rewards contribution for a total income of \$109. The club's finances remain strong with a \$9,758 bank balance.

Repeater: John Westerkamp, [W8LRJ](#): I have been doing some Spring Cleaning at the repeater site organizing the wires and removing legacy equipment that is no longer needed. Once the weather settles down, I hope to offer a tour of the repeater site for those who might be interested in seeing how things work and how the sausages are made. The automatic weekly reboots and remote access are working well.

Communication Center: John Westerkamp, [W8LRJ](#): Progress is still being made in the radio room! I am continuing to add and upgrade amateur radio software packages including WSJT-X, Winlink, and VARA, among others. As the weather clears, we look forward to putting up the new hexbeam antenna and doing some yearly maintenance on the existing antenna systems. We now have an IP phone connected to the Miami Valley Microwave Network and plan on upgrading our dish antenna and adding an outdoor weather camera.

BARC Net Manager: Paul Sharp, [WS8R](#): Every Sunday at 8:00 PM you can listen to and participate in the exciting BARC Net, on 147.045. For the 5 weeks in March 2025 there were approximately 86 check-ins lasting 199 exciting and informative minutes. Topics ranges from Open Mike, Parks on the Air, what is your favorite restaurant, and what part of ham radio has caught your interest.

Our faithful Net Controllers are, Larry Darner KD8RER, Connie Gifford W8CSG, Jim Gifford N8KET, Tink Siewicki KD8NUA, Eric Bramini, KC8OPY, and Paul Sharp WS8R. Joe Menchaca, KE8UUA as a trusty alternate.

Webmaster: Doug Hayward, [K8DRH](#): Changes coming to the BARC Website this month. Watch for the email with details...



BARC April 2026 Event Calendar

Thu April 2, 2026

7pm Planning Meeting..... Where: BARC Clubhouse

Sun April 5, 2026

8pm Weekly Net Where: 147.045+ (118.8 Hz tone)

Tue April 7, 2026

6:30pm POTA SIGWhere: BARC Clubhouse

Sat April 11, 2026

7:30am First Saturday POTA Adventures Where:

Sun April 12, 2026

8pm Weekly Net Where: 147.045+ (118.8 Hz tone)

Tue April 14, 2026

11:15am Lunch Bunch..... Where: Cherry House Cafe

Thu April 16, 2026

7pm Membership Meeting Where: BARC Clubhouse

Sun April 19, 2026

8pm Weekly Net Where: 147.045+ (118.8 Hz tone)

Tue April 21, 2026

7pm Tech Night Where: BARC Clubhouse

Thu April 23, 2026

7pm Dessert & Movie Night..... Where: BARC Clubhouse

Sat April 25, 2026

9am Sugar Maple Festival Parade Support Where: [Bellbrook Community Church](#)

Sun April 26, 2026

8pm Weekly Net Where: 147.045+ (118.8 Hz tone)

Tue April 28, 2026

11:15am Lunch Bunch.....Where: Another Broken Egg Cafe



BARC Movie and Dessert Night

April 23, 2026!

It's a good thing that BARC Members go with the flow because *Aquaman & the Lost Kingdom* was a no show for the February Movie Night. Somehow between here and there the movie got lost and we went to Plan B; *The Italian Job*. As always no matter what movie we show we have a great time just being together and enjoying the different desserts and BARC's Famous Popcorn! Our April movie "Rental Family" is a recent (2025) theater release, and we think you will enjoy it.

Date	Title	Genre	Actors
✓ January 22, 2026	Groundhog Day	Comedy	Bill Murray
✓ February 26, 2026	Aqua Man & the Lost Kingdom	Adventure	Jason Momoa
✓ March 26, 2026	The Italian Job	Adventure	Mark Wahlberg
April 23, 2026	Rental Family	Comedy/Drama	Brendan Fraser
May 21, 2026	Alita Battle Angel	Action	Rosa Salazar
June 25, 2026	Now You See Me/Now You Don't	Action	Woody Harrelson
July 23, 2026	For Richer or Poorer	Comedy	Tim Allen/Kirstie Alley
August 27, 2026			
September 24, 2026			
October 22, 2026			

BARC movie nights are held on the **Fourth Thursday** of each month **January** through **October** at **7:00 PM in the BARC Clubhouse**. We take November and December off for the holidays. At each movie night we pop up, *fresh*, BARC's famous popcorn and you never know what we will come up with for dessert! We welcome movie recommendations.

Our BARC 2026 Movie Season has started off with us enjoying movies in our new clubhouse. The attendance has been great and we've a great mix of fun movies.

We'll see you in April at the Movies!

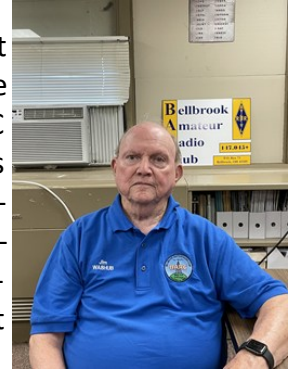
Tink
KD8NUA



Lunch Bunch

Jim Totten, [WA8HUB](#)

Hello my fellow lunch lovers. March 2026 is about over and we had some great lunches this month. Our Bellbrook Amateur Radio Club (BARC) lunches are scheduled on the 2nd and 4th Tuesdays of the month. As an aside regular BARC meetings are held on the 1st and 3rd Thursdays. The 1st Thursday meeting is called the Planning Meeting and is primarily for the club executive staff and function coordinators. As with any open membership club, club members are encouraged to attend. The 3rd Thursday meeting is for total membership. All members are welcomed. We do have internet Zoom access for those who can't attend in person.



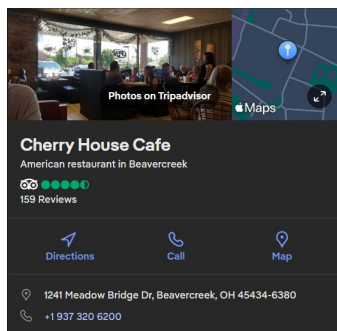
Now for LUNCHES. You should have the lunch chart available on the next page. The April lunches are in **bold print**. Now let's discuss the terrific lunches we had in March?? Our first lunch on 03/10/26 was *Red Robin Gourmet Burgers & Brews* (their new official name). They are located in the Fairfield Commons area. A good crowd and the burgers were very good. The next scheduled venue on 03/24/26 was the *Beavercreek Pizza Dive*, located near the intersection of Grange Hall Road and Dayton-Xenia Road. We always look forward to the selection of already cooked big slices or you can order from the menu. Remember the double "???" earlier? It turned out that the management of the Pizza Dive decided to close for Spring Break. Several people showed up to locked doors. As hams, we find another way. The consensus was go down the road and eat at Marion's Piazza on Fairfield Rd. And we did. One of our lunch friends brought his whole family. Nobody went home hungry. As usual the local entertainment was the group of ladies and gentlemen playing Mahjong.

Now comes April. Spring may be here and we are looking for good weather. In my copy of the chart we are at the top ***{Editor: our chart is starting from January}***. Our April lunches have some of the most wonderful food. The 1st lunch is on April 14, 2026 at the **Cherry House Cafe** located at 1241 Meadow Bridge Dr., Beavercreek, OH 45434, (937) 320-6200. Sandwiches and soups are so good plus amazing desserts (cookies). The 2nd Lunch on April 26, 2026 is at another winner, **Another Broken Egg Cafe** located at 2453 Esquire Dr., Beavercreek, OH 45431, (937) 912-5074. Their menu is wild. All kind of egg dishes from fried eggs, omelets, and several pancakes.

That's a wrap for this month. Happy eating.

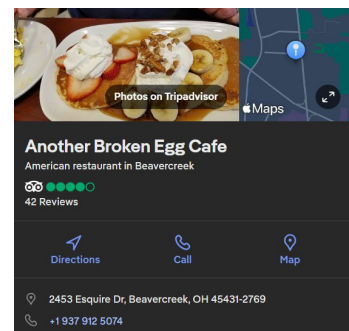
73, Jim, [WA8HUB](#)

[Tuesday, April 14th, 11:15am](#)



Click picture or hyperlink
for more info and maps

[Tuesday, April 28th, 11:15am](#)



(Continued on next page)



Lunch Bunch List

Jim Totten, [WA8HUB](#)

Date	Restaurant	Address	City	Phone Number
01/13/26	Culp's Cafeteria	1000 Carillon Blvd	Dayton, OH 45409	(937) 293-2841
02/10/26	City Barbecue	2001 E. Dorothy Lane	Kettering, OH 45420	(937) 200-1006
02/24/26	Marion's Piazza	1320 N Fairfield Rd.	Beavercreek, OH 45432	(937) 429-3393
03/10/26	Red Robin	2671 Fairfield Commons Blvd.	Beavercreek, OH 45431	(937) 320-9800
03/24/26	Beavercreek Pizza Dive	4021 Dayton-Xenia Rd.	Beavercreek, OH 45432	(937) 431-8669
04/14/26	Cherry House Cafe	1241 Meadow Bridge Dr	Beavercreek, OH 45434	(937) 320-6200
04/28/26	Another Broken Egg Cafe 7:00 am to 2:00 pm	2453 Esquire Dr.	Beavercreek, OH 45431	(937) 912-5074
05/12/26	China Garden Buffet	112 Woodman Dr. Airway Shopping Center	Dayton, OH 45431	(937) 781-9999
05/26/26	First Watch 7:00 am to 2:30 pm	5245 Cornerstone North Blvd	Sugarcreek Twp, OH 45440	(937) 732-9013
06/09/26	Submarine House	3195 Dayton-Xenia Rd.	Beavercreek, OH 45434	(937) 429-8650
06/23/26	Roosters Wings	2430 N. Fairfield <i>The Shoppes at FC</i>	Beavercreek, OH 45431	(937) 702-9500
07/14/26	Butterbee's	217 Progress Dr.	Xenia, OH 45385	(937) 352-6504
07/28/26	Shawarma Grill	2844 Colonel Glenn Hwy	Fairborn, OH 45324	(937) 429-4959
08/11/26	Chic-Fil-A	5301 Cornerstone N Blvd	Sugarcreek Township, OH 45440	(937) 439-1700



POTA Adventures in April

Jim Gifford, [N8KET](#)

Since the first Saturday is the day before Easter, we will hold our POTA adventure on Saturday, April 11th. We plan to meet at 11am at the [McDonalds, 1645 N. Detroit Steet](#) (near Old Town on Rt 68). We will eat there together or we can grab a sandwich to go, if we wish, or just bring a sack lunch. The group will decide which parks each will go to and activate POTA and head out to adventure.

Glenn Rodgers, WI8O prepared the following about parks nearby. Quick lunch and split up to the park of your choice, options include:

Great Council State Park US-11673

1587 US 68 N, Xenia

39.7293, -83.9372 (EM89ar)

Great Council State Park is Ohio's 76th state park, established to honor and preserve the rich history and culture of the Shawnee people and their enduring connection to the land. It is located in western Ohio. POTA options limited to working from vehicle or there are a couple of picnic tables (if not occupied by visitors to the center).

Charles Young Buffalo Soldiers National Monument US-0916

1120 US-42, Wilberforce, OH

39.7073, -83.8902 (EM89bq)

The Charles Young Buffalo Soldiers National Monument, a National Monument of the United States, commemorates the life of Charles Young, an escaped slave who rose to become a Buffalo Soldier in the United States Army and its first African-American colonel. POTA options limited to working from vehicle in parking lot, or setting up small table and chair in the meadow.

John Bryan State Park US-1964

3790 OH-370, Yellow Springs

39.7892, -83.8539 (EM89bs)

John Bryan State Park, in Greene County, Ohio, is a 752-acre state park. It surrounds Clifton Gorge, a deep chasm of the Little Miami River, between Yellow Springs and Clifton. The park contains a campground, and hiking and biking trails. POTA options are mostly unlimited, many parking areas where you can work from your vehicle. Also a gazebo beside the mountain bike trail, as well as picnic tables in many areas of the park.

Clifton Gorge State Nature Preserve US-7848

2381 OH-343, Yellow Springs

39.7993, -83.8337 (EM89bt)

Clifton Gorge State Nature Preserve, in Greene County, Ohio, is located three miles east of Yellow Springs, Ohio, and immediately southwest of Clifton, Ohio. The preserve constitutes 268 acres of gorges along two miles of the Little Miami River. POTA options are primarily from vehicle at the parking lot (address above). It is possible to operate anywhere with the 268 acre preserve if you are prepared for a hike and carrying your radio gear.



April Hamclock Update

Ray Hitt, [N8VMX](#)

The race continues for the Supreme Leader of HamClock replacement backend servers. Just kidding, all the contenders show promise, and you can't go wrong trying out any or all of them. How many Raspberry Pi's do you have lying around to test these all in parallel?

To prove my point, I have three Raspberry Pis at my disposal, plus a couple more if needed. One of them is my WPSD duplex DMR hotspot. I set it up running Open Hamclock Backend (OHB). Here's part of the screen capture I got by typing `http://xx.xx.x.xx:8080/get_sys.txt` (below in red).



```
Version 4.22
BuildSz 1600 x 960
MaxStack 0
Platform HamClock-rpi
BEHost ohb.hamclock.app
BEPort 80
```

You can see the *BEHost* (backend host) is *ohb.hamclock.app* and the *BEPort* (backend port) is *80*. These are the parameters you pass when you run `hamclock -b BEHost:BEPort`.

Alongside this hotspot, I started up HamClock on another WPSD (simplex) hotspot, pointed to the *hamclock.com* backend server. I used the `http://xx.xx.x.yy:8080/get_sys.txt` command to show the parameters for this Raspberry Pi (right in yellow).

```
Version 4.22
BuildSz 1600 x 960
MaxStack 0
Platform HamClock-rpi
BEHost hamclock.com
BEPort 80
```

```
Version 4.22
BuildSz 1600 x 960
MaxStack 0
Platform HamClock-rpi
BEHost clearskyinstitute.com
BEPort 80
```

My third Raspberry Pi is my Pi-5 ham shack desktop (shack-top?) computer. It is running the original HamClock backend server at *clearskyinstitute.com*, which is reported to be going silent on or around 30 June 2026. Here's the parameters I get when typing `http://xx.xx.x.zz:8080/get_sys.txt` (left in green).

I color coded the text boxes for you because in a couple of pages I will show you some nearly simultaneous screen captures sent from these Raspberry Pis. I wanted to show you in nearly real-time what the differences are between these three backend servers. Bear in mind that this is a snapshot in time, that *clearskyinstitute.com* is in declining health while *hamclock.com* and *ohb.hamclock.app* are under active development. **The color codes in these boxes (above) will match the color of the font used for my call sign in the HamClock screens coming up.** I thought this would be an effective way to keep these screens straight while comparing their features.

To get screen grabs, I use the handy commands available at `http://xxx.xxx.xxx.xxx:8080` (where *xxx.xxx.xxx.xxx* is the ip address of your HamClock. When you enter this command as is (when substituting your ip address), you get a help page showing all the commands available for you. They are divided into two groups, *get_yyy*, and *set_zzz*, where the get commands retrieve information from HamClock on that Raspberry Pi and the set commands allow you to change parameters in HamClock. I have used the set commands on my ESP8266 hardware-based HamClock to input the ISS satellite parameters that are no longer being delivered by the failing *clearskyinstitute.com*, and also to set DX locations precisely where I want by lat long and not by trying to click in the right spot on the world map. The commands are on the next page. The screen grab (screen capture) command is: `http://xxx.xxx.xxx.xxx:8080/get_capture.bmp`

(Continued on next page)



April Hamclock Update (continued)

```
HamClock Live is R/W on port 8081
HamClock Live is R/O on port 8082
get_capture.bmp      get live screen shot in bmp format
get_config.txt       get current display settings
get_contests.txt     get current list of contests
get_de.txt           get DE info
get_dx.txt           get DX info
get_dxpeds.txt       get current list of DXpeditions
get_dxspots.txt      get DX spots
get_gpio?            pin=MCP&latched=[true,false]
get_livespots.txt    get live spots list
get_livestats.txt    get live spots statistics
get_ontheair.txt     get POTA/SOTA activators
get_satellite.txt    get current sat info
get_satellites.txt   get list of all sats
get_sensors.txt      get sensor data
get_spacewx.txt      get space weather info
get_sys.txt          get system stats
get_time.txt         get current time
get_voacap.txt       get current band conditions matrix
set_adif?            pane=[0123] (POST)
set_alarm?           state=off|armed&time=HR:MN&utc=yes|no
set_auxtime?         format=[one_from_menu]
set_bmp?             pane=[1,2,3,map]&fit=[resize,crop,fill][&off] (POST)
set_cluster?         host=xxx&port=yyy
set_debug?           name=xxx&level=n
set_defmt?           fmt=[one_from_menu]&atin=RSAtAt|RSInAgo
set_displayOnOff?   on|off
set_displayTimes?   on=HR:MN&off=HR:MN&day=[Sun..Sat]&idle=mins
set_gpio?            pin=MCP&level=[hi,lo]&blink=hz
                     (see error message)
set_livespots?       lng=X
set_mapcenter?       setup=name&color=R,G,B
set_mapcolor?        Style=S&Grid=G&Projection=P&RSS=on|off&Night=on|off
set_mapview?         grid=AB12&lat=X&lng=Y&call=AA0XYZ
set_newde?           grid=AB12&lat=X&lng=Y
set_newdx?           state=off|armed&time=YYYY-MM-DDTHR:MN&tz=DE|UTC
set_once_alarm?     Pane[0123]=X,Y,Z... any from:
set_pane?            VOACAP_DEDX DE_WX DX_Cluster DX_WX Solar_Flux Planetary_K Moon NOAA_SpcWx
                     Sunspot_N X-Ray SDO Solar_Wind DRAP Contests Live_Spots Bz_Bt On_The_Air
                     Aurora DXPeditions Disturbance
set_panzoom?         pan_x=X&pan_y=Y&pan_dx=dX&pan_dy=dY&zoom=Z
set_rotator?         state=[un]stop|[un]auto&az=X&el=X
set_rss?             reset|add=X|network|interval=secs|on|off|file (POST)
set_satname?         abc|none
set_sattle?          name=abc&t1=line1&t2=line2
set_screenlock?     lock=on|off
set_senscorr?        sensor=76|77&dTemp=X&dPres=Y
set_stopwatch?       reset|run|stop|lap|countdown=mins
set_time?            change=delta_seconds
set_time?            ISO=YYYY-MM-DDTHH:MM:SS
set_time?            Now
set_time?            unix=secs_since_1970
set_title?           call|title|onair=[text]&fg=R,G,B&bg=R,G,B|rainbow
set_touch?           x=X&y=Y
set_voacap?          band=X&power=W&tz=DE|UTC&mode=X&map=X&TOA=X
exit                 exit HamClock
postDiags            post diagnostic logs and configuration settings
restart              restart HamClock
updateversion        update to latest version
```

HamClock Version 4.22 Port 8080 Commands

I'll run through these commands in a separate article soon, I don't want to get bogged down with it here. Feel free to send some of these commands to your HamClock following the examples I used earlier.

The next page shows three screen grabs for HamClocks pointed to *ohb.hamclock.com:80*, *hamclock.com:80*, and *clearskyinstitute.com:80*. All three were configured with the same DX location, same VOACAP REL band (30m). I also set the default map center at 80W, close to my location.



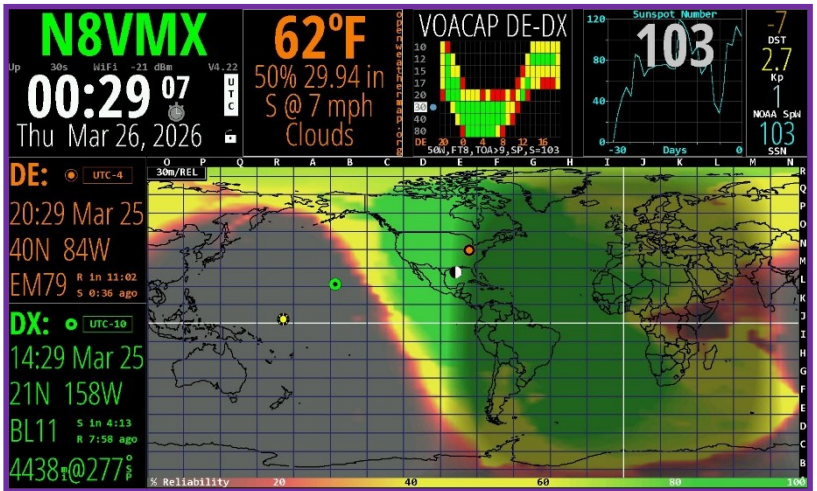
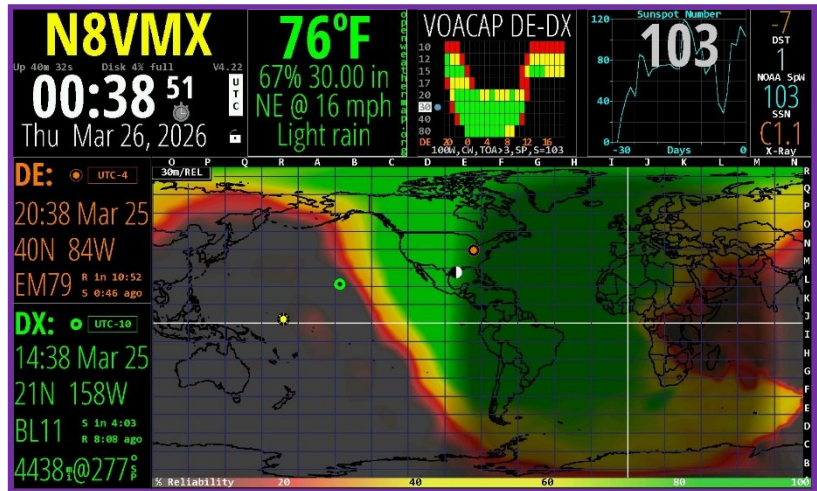
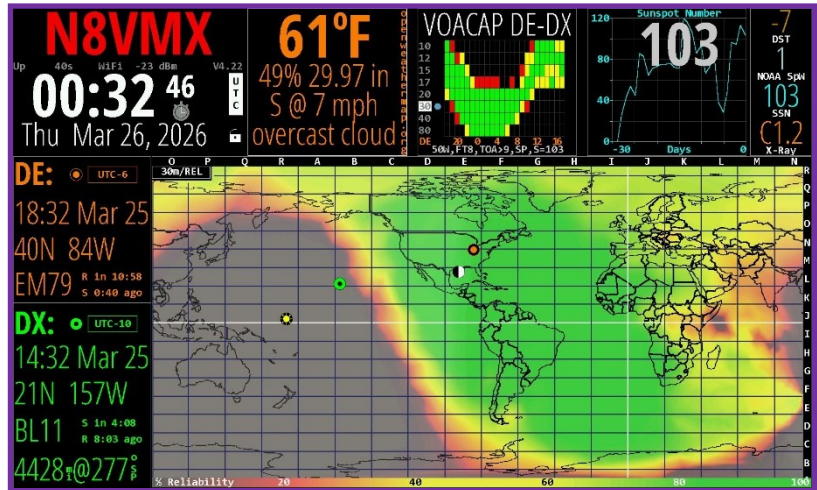
April Hamclock Update (continued)

The three screen captures to the right are from top to bottom: OpenHamClock Backend (red call sign), Hamclock.com (yellow call sign), and the original HamClock at clearskyinstitute.com (green call sign). These can be selected at run time with the following three options:

1. hamclock -b ohb.hamclock.app:80
2. hamclock -b hamclock.com:80
3. hamclock or hamclock -b clearskyinstitute.com

I was surprised when I put these side by side comparisons in this article. Earlier drafts had VOACAP DE-DX and the corresponding worldwide propagation reliability map (30m REL in this case) that didn't resemble each other. Looking here, after just a week, I see nearly total convergence between all three backend servers. The smoothed sunspot numbers match, and the other parameters are very close to each other. Sometimes the source data gets updated and these programs don't simultaneously update, so there may be subtle differences between them that clears up over time. The one disappointment was that the satellite TLEs (two-line elements) are not being updated by clearskyinstitute anymore. Since no one is maintaining that site, the satellite passes can't be shown anymore. You can do a work-around by manually uploading a particular satellite the `set_sattle?` command from the previous page. Or just use a replacement backend.

Other items I looked at that aren't showing up on these example screen grabs are DXClusters, On The Air, weather fore-casts, sunspot numbers,



April Hamclock Update (continued)

etc. I have noticed that each of the three programs slightly disagree on current On The Air (POTA, SO-TA, etc.) spots. This is probably because the spots are based on the last 10, 20, 30, and up to 60 minutes. Each program grabs its data at separate times, so the exact number of spots will disagree. The DXpedition numbers are different too, based on disagreement on expired, current and future DXpedition numbers and what is being displayed. Live Spots (PSK) of EM79 (my grid square) all worked perfectly but had general (but not exact) agreement.

Assessment: *Clearskyinstitute.com*, the original HamClock backend server, is still functional except for satellite updates, making that part of HamClock useless unless you resort to downloading and installing individual satellite TLEs into the HamClock. The differences between all three of these backend servers seem minimal to me, which is astonishing since work has only accelerated in earnest for the past couple of months. Hats off to the programmers doing this work as an act of kindness to the amateur radio community and out of respect for the inventor of HamClock, Elwood Downey WBOEW (sk). Hamclock.com is being developed by Bruce Edrich, W4BAE, while OpenHamClock Backend is being developed by Dave Koberstein (GitHub handle komacke). Both have contributor assistance which I don't have space to adequately address here. If you feel the urge, donate to them, running these servers can be expensive.

Other HamClock Related Developments.

There are some programs popping up that perform most of the functionality of HamClock but depart from adhering to the format of HamClock. View them as functional equivalents, but not exact replacements. These programs may or may not need a backend server, at your discretion. It goes without saying that none of the programs that follow will operate with your existing HamClock software, they are a complete replacement.

OpenHamClock: Not to be confused with the *OpenHamClock Backend* discussed earlier, a different program with a similar name; *OpenHamClock* does not resemble the original HamClock in any way. It is rewritten, uses many of the same data sources, but presents them in a new customizable way. I wrote about it last month, refer back to it for a refresher. *OpenHamClock* is accessible through their website, openhamclock.com or you can compile it and run it on your machine by downloading it from GitHub at this link and setting it up on your Raspberry Pi. In the latter case, your Raspberry Pi would reach out and grab all the data from the sources displayed in *OpenHamClock* rather than going to their webpage which would do the data gathering. They both look identical, but the performance is different.

OpenHamClock is in a *very dynamic* state of development. It has gone from *version 1.0* in early February, to *version 26.1.3* as I write this. A drawback to running all of this on your Raspberry Pi is that you need to update your software quite often. It's easy to do, but daunting for many of us. I relied on Grok a lot for assistance as I set up *openhamclock* for the first time. After that, periodic updates are a lot easier, in fact that option recently appeared on the *openhamclock* live web page itself.

The display on the next page shows *openhamclock.com*. I also have *openhamclock* running on my Raspberry Pi-5 desktop (shack-top?) computer and it looks quite similar. They would be identical except for customizations, of which there are many!



April Hamclock Update (continued)



OpenHamClock Version 26.1.3

Looking at the display, there's a lot going on here, but you can pick and choose what you want to display, so chances are you will end up quite happy with this software after you customize it to your liking. It is very well written, but still under development.

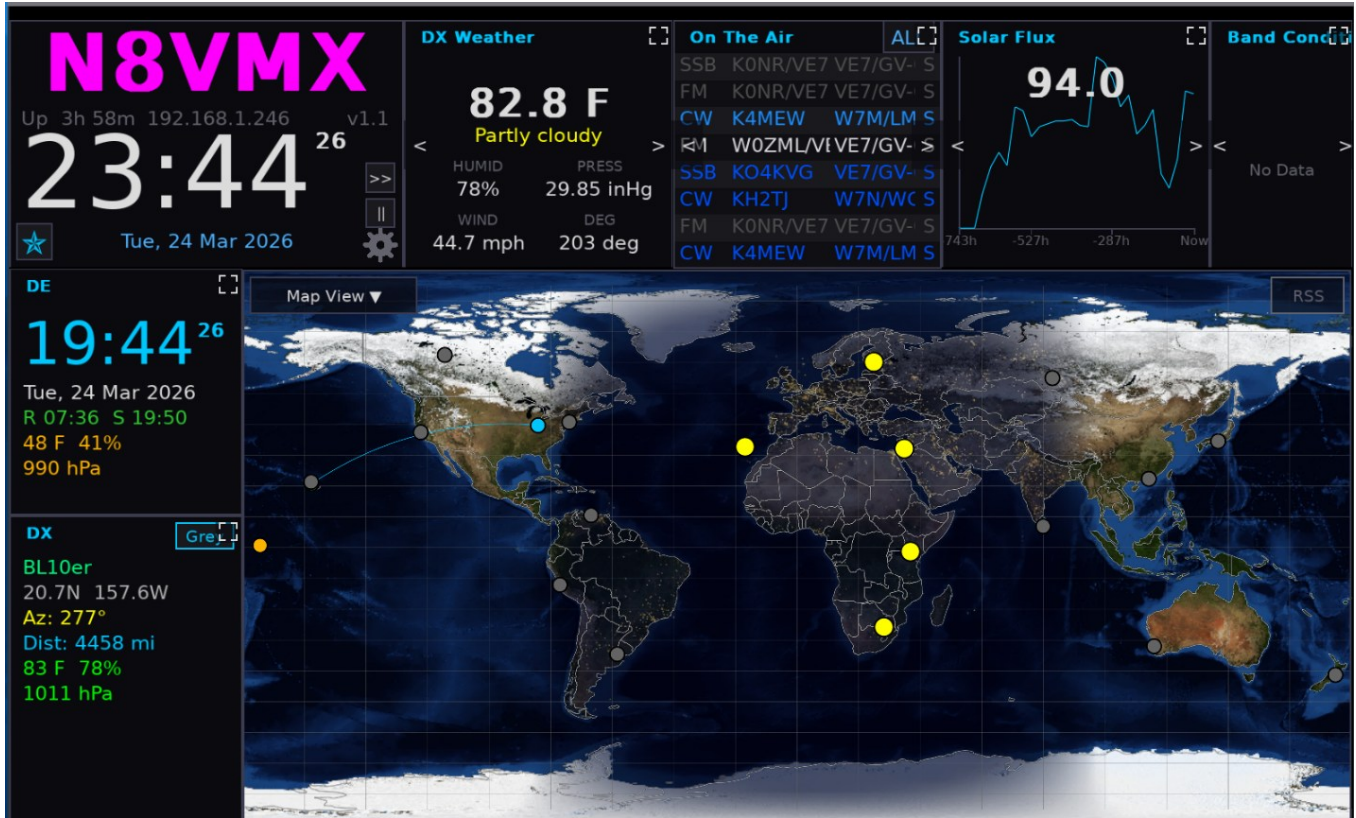
I haven't had time to really dig into this program to assess its fidelity to the information displayed in HamClock. I do notice that VOACAP propagation models are divergent to the original HamClock and VOACAP REL overlaid onto the world map is not viewable at all. VOACAP in general needs a lot of work before it can be useful here.

HamClock-Next: This program is described as a multi-platform complete rewrite of the HamClock app. The rewrite was required because the original HamClock was initially designed to support the ESP8266 embedded microcontroller. Over time, support for Linux was rolled in while retaining the ESP8266 support. After version 3.10, support for the ESP8266 was dropped because of its memory limitations. Because of that lineage, things got a little messy. *HamClock-Next* starts off supporting Linux and other modern OSs and is optimized for those architectures. It's also written nearly 100% by AI (Gemini 3, Claude Code, and Codex) that perform peer reviews of the code to nearly eliminate adverse effects that AI can introduce such as "hallucinations" and highlights strange edge cases for resolution. *HamClock-Next* claims to support 100% of the original HamClock features.

HamClock-Next is available from GitHub [at this link](#). Detailed compilation instructions are available at that link. It's straightforward to compile on a Raspberry Pi. Once compiled, if on a desktop, you can have the screen routed to the desktop, or with a different command, set up a web page server on your network that you can access from any local machine, just like HamClock.



April Hamclock Update (continued)



HamClock-Next Version 1.10 Desktop Display

This is the main page for *HamClock-Next*, after you have filled out a short setup screen with your Call Sign, grid square and a few other details. You can see that the layout is generally the same as HamClock, but it has a fresh new look. Each of the Panes are identified and you can map any of the features to any of the Panes. The small arrows in each Pane allow you to toggle through the other panes underneath the one on display. I really like the look of this program. Not surprisingly, the glaring weak feature is the display of VOACAP REL overlays on the map showing the probability of reception for a given band. The displays are disappointing and I plan on leaving them hidden until they are fixed.

Well, that's a lot to digest, but I hope this gives you a sense of what's going on in the amateur radio community to keep the HamClock alive in the future. I'll keep playing around with these, and maybe other HamClock variations and will report on the progress next month. And I plan on studying the VOACAP tool and see why it is not being implemented well in some of these programs.

73, Ray [N8VMX](#)



Making the Most of the Clubhouse

Geoff Kline, [K15VNB](#)

The recent stretch of bad weather and high winds took a toll on my station—my main antenna, a classic DX Commander multiband vertical, didn't survive the storm. With the weather not cooperating, I haven't had a chance to repair it yet. Unfortunately, this all happened right as the CQ WPX SSB contest rolled around, and I really wanted to get on the air.

I briefly considered operating from the clubhouse using the Icom IC-7300, but I'll admit I haven't spent enough time learning its filtering and advanced features to feel truly competitive in a contest environment. Then I remembered the repair bench has access to the antenna patch panel—and that changed everything.

So I packed up my Yaesu FTDX10 and a laptop and headed over to the clubhouse. I operated Friday night and came back again on Saturday, and it turned out to be a great experience.



While taking a break, I thought about a recent conversation with a fellow club member about encouraging more use of the clubhouse. Sitting there in a quiet, well-equipped radio room, it really hit me how underutilized this resource can be. The noise floor was incredibly low—so much so that if I had brought a speaker, I probably wouldn't have needed my headset at all. There was plenty of room to spread out, and having access to a refrigerator made it easy to keep food and drinks on hand during long operating sessions.



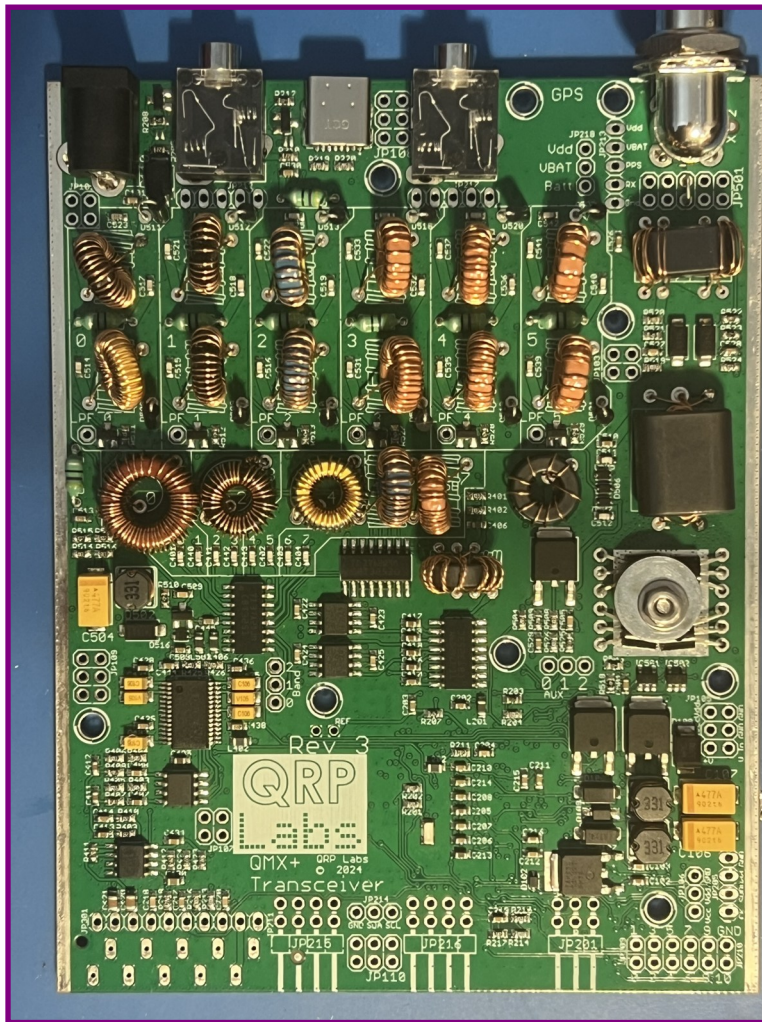
Making the Most of the Clubhouse (continued)

Beyond contesting, the clubhouse has also been a great place for hands-on projects. Over the past few weekends, another club member and I have been meeting there to work on assembling radios from kits we picked up at Hamvention last year. Having access to a proper repair bench makes a big difference. I've even used the space to troubleshoot and diagnose issues with a new radio purchase.

If you haven't taken advantage of the clubhouse yet, I'd strongly encourage you to do so. Whether you're operating, building, experimenting, or just learning, it's a fantastic resource available to all of us.

And if you're not sure how to access the clubhouse or use the equipment, keep an eye out for our upcoming open house. We'll be there to help you get started and answer any questions you might have.

73, Geoff [K15VNB](#)



My Experience With PiAware ADS-B Software

Ray Hitt, [N8VMX](#)

John, W8LRJ gave an excellent February Tech Night presentation on implementing an ADS-B broadcast decoder on a Raspberry Pi. He went further to describe a homemade ¼ wave antenna you could build from a few inches of Nomex electrical wire. I reprinted John's 2024 article in [February 2026's](#) Full Quieting Newsletter. I had extra Raspberry Pis and RTL-SDRs so I set out to build what John described, with some twists and turns.



The first twist was that while I built PiAware *from scratch* on a Raspberry Pi4 using the [PiAware images available online](#), I also wanted to add PiAware to an existing desktop Raspberry Pi5 I am also using for POTA hunting, FT-8, hotspot monitoring, without erasing what's there.

The software available from GitHub can be added to an existing Bookworm (Debian 12) installation by adding a couple of repositories, then updating the system and installing the PiAware software packages like this:

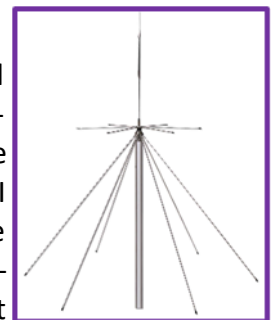
```
# Add the PiAware repositories and update the list
sudo wget -O /etc/apt/sources.list.d/abcd567a.list https://abcd567a.github.io/debian12/abcd567a.list
sudo wget -O /etc/apt/keyrings/abcd567a-key.gpg https://abcd567a.github.io/debian12/KEY2.gpg
sudo apt update

# Perform full upgrade to ensure everything is up to date
sudo apt full-upgrade

# Install the PiAware software packages and restart Pi
sudo apt install dump1090-fa piaware piaware-web
sudo reboot
```

It didn't totally go as smoothly as I thought. For one thing, I mistakenly thought I was running Trixie (Debian 13) on my Raspberry Pi-5, so initially I asked [Grok](#) for instructions on how to install PiAware on that OS. It didn't work, so I told Grok the errors I encountered and Grok informed me I was really using Bookworm (Debian 12)! I ended up having a multi-day conversation with Grok regarding this installation, and I left the Grok conversation pinned so that I could save it and pick up where I left off. Eventually it ended up working perfectly. I had a "fixed base installation" on a Raspberry Pi5 and a "portable" on a Pi-4.

The next twist was that instead of building an ADS-B antenna right away, I wanted to plug into my existing discone, a [Comet DS-150S](#). It can handle the ADS-B frequency (1090 MHz) fine, so I plugged it straight into my SDR plugged into the Raspberry Pi. I was not too impressed with the results, to say the least. Then I remembered that I needed to install a preamp/ADS-B filter inline, which I did. The results were much better, but not nearly what I expected from an antenna mounted near the top of my tower, around 35 feet above the ground. I am using 60 feet of RG-8 coax which was installed in 2000. This cable is probably killing my signal. LMR-400 is preferred at ADS-B frequencies. Also, this is very wideband antenna (25 MHz – 1300 MHz) so noise is going to swamp the relatively narrow 1090 MHz frequency range I need to focus on. This led me to want to try building a ¼ wave antenna optimized for ADS-B and devote my discone to general purposes.



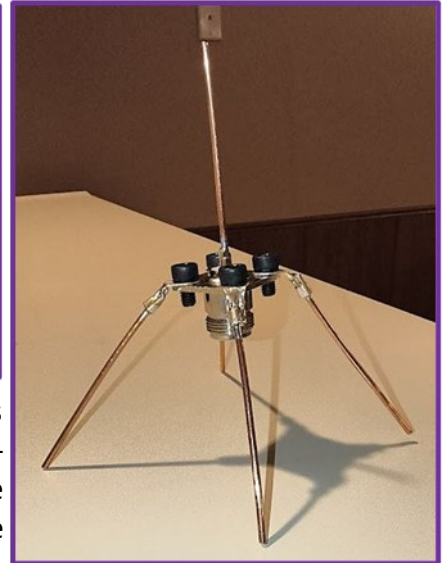
(Continued on next page)



My Experience With PiAware ADS-B Software (continued)

I didn't have any type N bulkhead connectors lying around, so I ordered some sight-unseen from eBay. Type-N connectors are better for the UHF and higher frequencies than the PL-259 "UHF" connectors we use in HF. It took them nearly three weeks to arrive from California, due to the snow-storm we had that crippled shipping for a while.

In the meantime, I stripped off a foot or so of Nomex 3-wire electrical cable, down to the bare wire. For the $\frac{1}{4}$ wave antenna, I need one wire 2.5-3 inches long for the antenna element, and 4 wires roughly the same length for ground radials (I eventually cut them down to 2.58"). I took John's advice and crimped the 4 ground wires onto terminal lugs, then soldered them to the lugs for good measure. To be fancy, I had some M5 (5 mm) bolts from another project, so I drilled and tapped the four holes in the type N bulkhead connector and screwed the 4 radials onto the bulkhead connector rather than soldering them to it. No washers or nuts were required, although I do plan on putting lock washers on once I am done experimenting.



When it came time to solder the element into the pin of the N bulkhead connector, I soldered it fine but didn't notice that the whole pin collapsed into the connector and it wouldn't screw into its mate anymore. Turns out the dielectric was *plastic*, not *Teflon* and it melted. That's what I get for buying things off of eBay. I soldered it into another connector, more quickly, and it turned out fine. My lesson: screw a male N connector onto the Type N female panel mount to keep the pin from moving, and also to limit the amount of heat used.

I liked John's use of PVC tubing to elevate the antenna and pass the short coax down to the RTL-SDR and Raspberry Pi. I screwed my PVC into a piece of scrap composite decking as a base. Here's a picture of how it turned out (right). The antenna coax is fed through the tall PVC pipe, coming out the discharge tube, connected to an inline ADS-B filter/preamp, an RTL-SDR, and the Raspberry Pi-4. I didn't glue any of this together so I can disassemble it if I need to. It feels pretty sturdy. After this, when I was painting BARC's hexbeam fiberglass spreaders, I also took the opportunity to paint this tubing flat black also. It looks like some piece of abstract art now!



(Continued on next page)

[Back to Table of Contents](#)



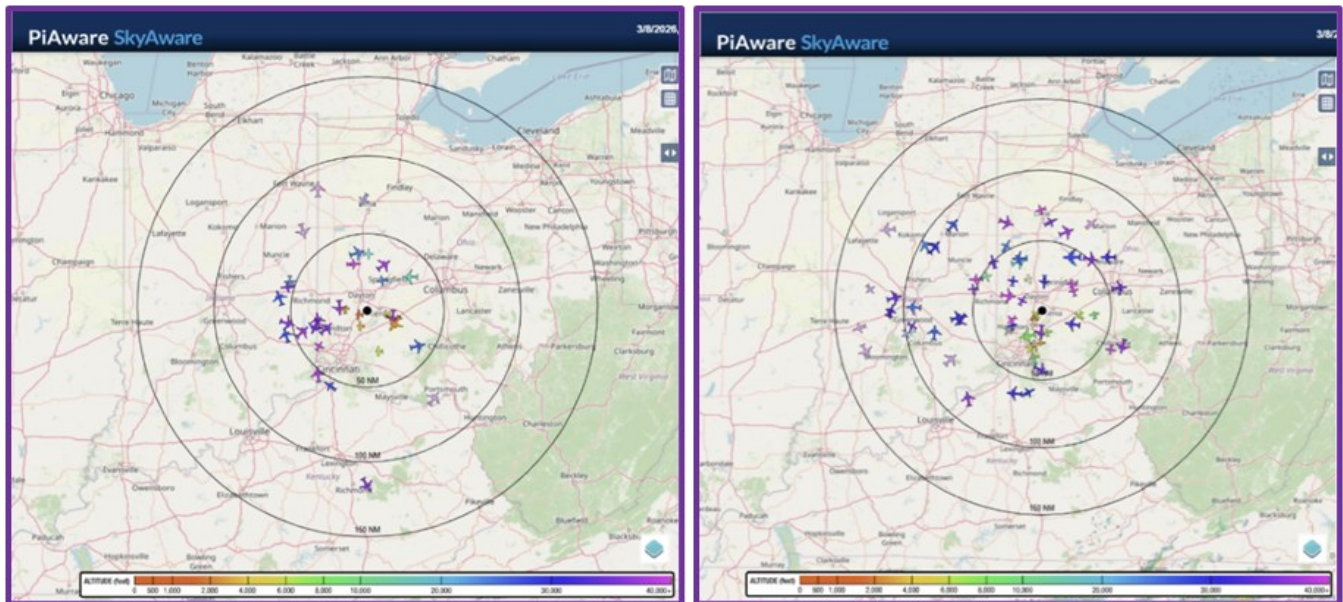
My Experience With PiAware ADS-B Software (continued)

Observations: I was able to track aircraft with the discone antenna mounted 30 feet high. You could tell there was a lot of attenuation, because the RSSI (received signal strength indication) values were very low, they ranged from around -20 to -29 dBfs (db above/below full scale) from the dump1090 program, displayed on the PiAware map and aircraft table. RSSI is an option not shown by default, you need to select it in the menu to see it. It's very useful for antenna testers.

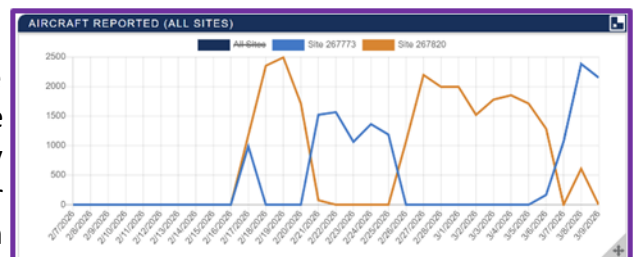
With the indoor antenna located at my ham shack on the first floor, the RSSI values ranged from -2 to -29 dBfs. The cable is only two feet vs 60, so much less loss. However, at 6 feet above ground level, the radio horizon was greatly reduced, and the house attenuated traffic seen from the east.

With the indoor antenna located near my 2nd story window, maybe 20 feet AGL, the RSSI values ranged from -1.4 to -29 dBfs. There were up to 80 aircraft tracked at once, versus up to 60 aircraft at once through the discone antenna.

These two maps show the view from the discone (below left) and the indoor antenna upstairs (below right). The left chart shows only a few aircraft over 100 nm away, while the indoor antenna had several aircraft over 100 nm away and a few over 150 nm. Since the indoor antenna was near a west-facing window, there were very few aircraft over 50 nm away from the east but many from the west.



Another cool graphic is available when you go to your ADS-B statistics page. There I found out that statistics were kept between the two “sites” I created, one attached to the discone, the other attached to the indoor antenna, going back to the first day I set up my account. I found out that I could examine the number of tracks per day for the two sites (and also for them combined which I toggled off). This is what that looks like (right).

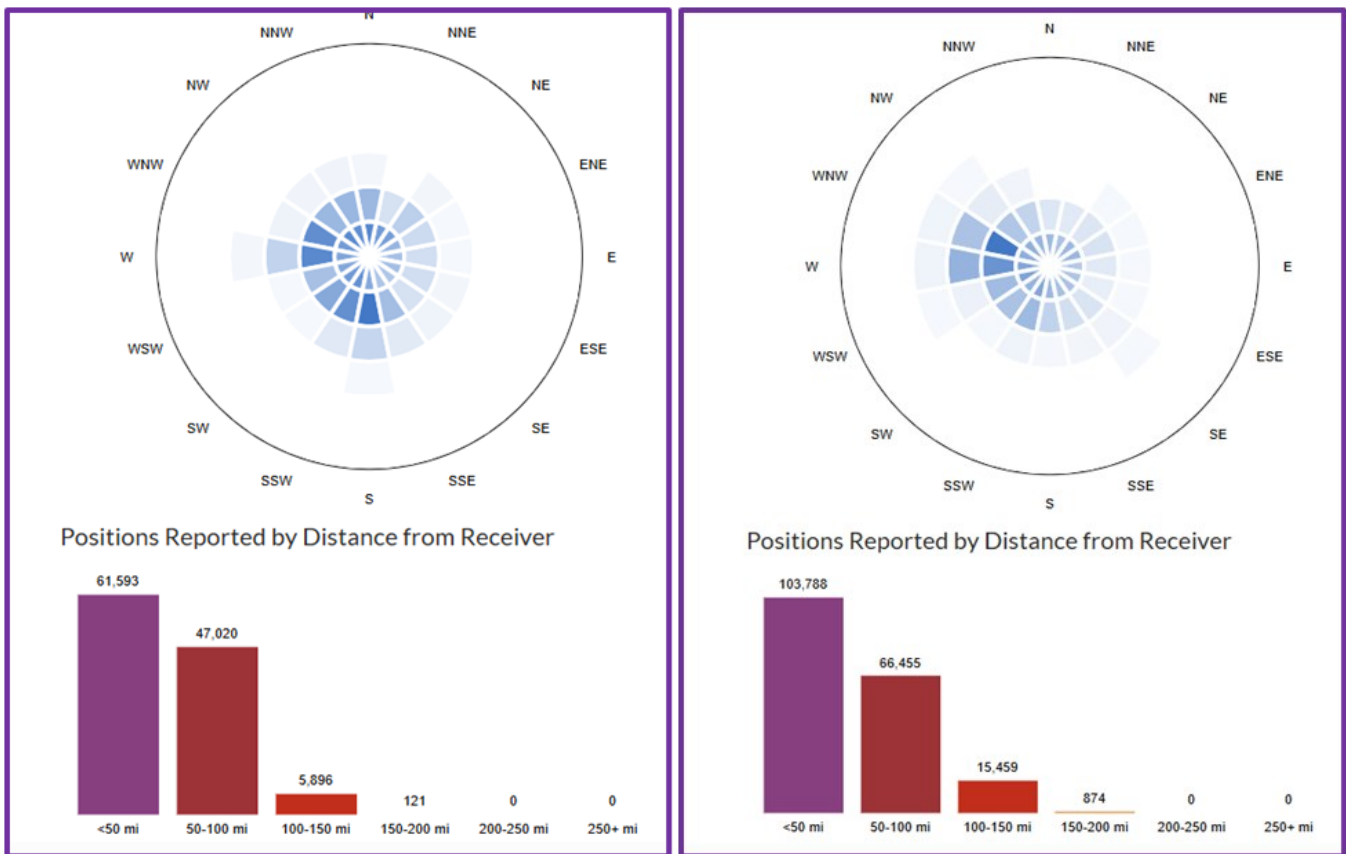


My Experience With PiAware ADS-B Software (continued)

Since I only have one ADS-B preamp/filter at the moment, you can tell that only one of these sites is up at a time. The discone antenna (orange trace) had a maximum number of aircraft per day at just under 2492, while the indoor antenna (blue trace) received a maximum of 1566 aircraft per day downstairs and 2382 aircraft per day upstairs. So, the advantage of having the discone up 30 feet was offset by how much cable loss I incurred. The antenna indoors had a marked difference between upstairs and downstairs.

Another useful graphic was a heatmap showing the azimuth and distance of aircraft reports. The pie wedges are grouped 0-50, 50-100, and 100-150 and 150-200 nm. The deeper the color, the more aircraft reports were received in that sector. Below the heatmap is a histogram of number of reports received in a particular range to your station.

The chart below left is from the discone antenna while the chart below right is the indoor antenna as currently positioned on the second floor with a westward window view.



Looking at the discone chart on the left, you can see that it has a somewhat even distribution across all azimuths in the inner three rings. Compare that to the indoor antenna chart on the right where there is a definite bias to the west, due to the westward facing window.

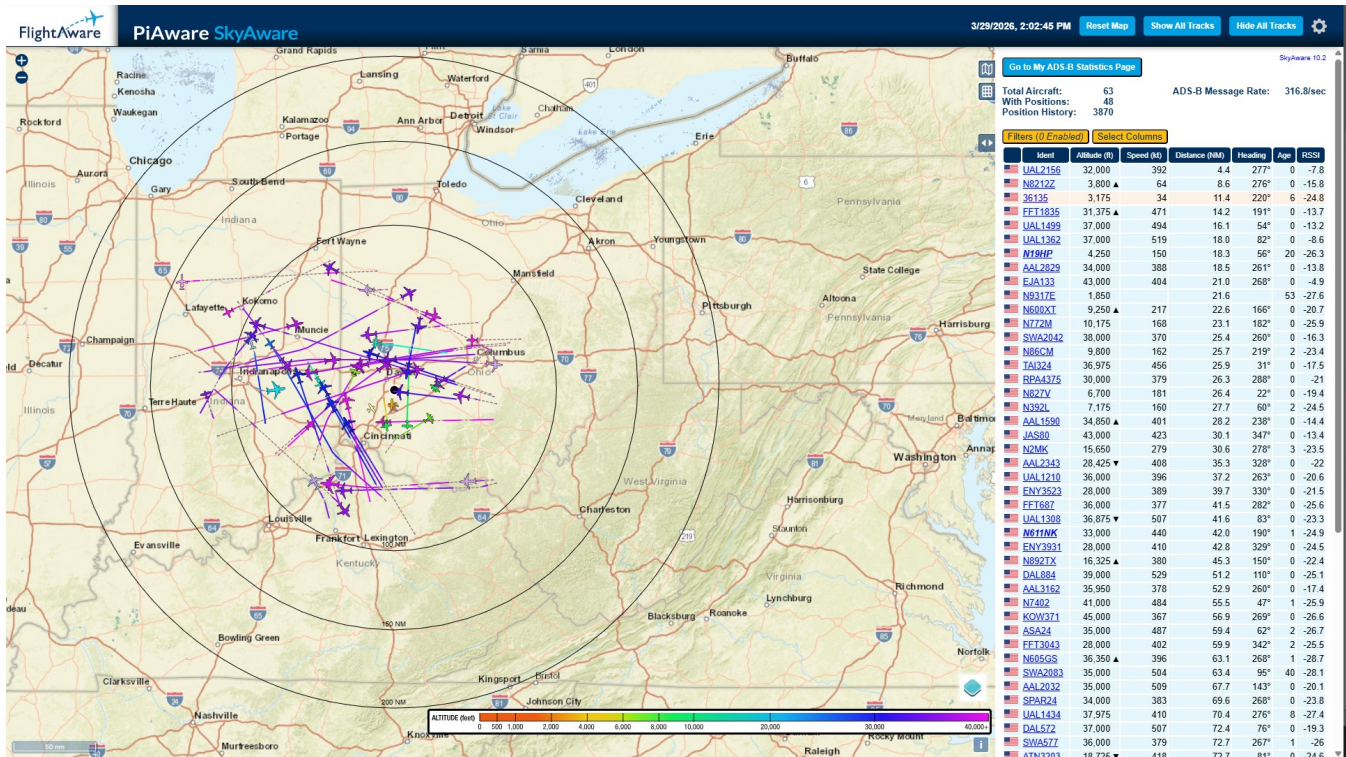


My Experience With PiAware ADS-B Software (continued)

As you get to the longer ranges, the aircraft will be at a nearly zero elevation angle and ground effects (buildings, trees, hills) become a driving factor. I haven't gathered enough data points yet to see what those effects are, but I do have many trees in my neighborhood. I'll give another update once I do part two of this setup, putting the Raspberry Pi up on the tower and power it over Ethernet (PoE). Look to see these numbers jump through the roof when that happens.

I'm also thinking of making a 3-element collinear array based on existing Wi-Fi designs but scaled to the ADS-B frequency. It's based on a single piece of wire with coils formed up the wire at precise distances. I'll keep you posted on this project as these pieces fall into place. I've built it and found it to be a beast to tune, but Grok recommended I encase the antenna in PVC as in the install and trim the element to best match. I'll be doing that this upcoming weekend and maybe report on it next month. I'd like to take more time and compare the colinear with the 1/4 wave vertical side by side.

Thanks to John W8LRJ for the *Full Quieting* article and the Tech Night presentation that got me started on this project. Thanks to Bob AC8ZU for setting up this Tech Night for us.



73, Ray [N8VMX](#)



Repair of Bose Wave Radio

Ray Hitt, [N8VMX](#)

I've had a Bose Wave Radio II for quite a while and really enjoyed it. It's a high-end radio/alarm clock with superb sound. Recently, when turning the radio on, a **"Please Wait"** message would appear and the radio would refuse to turn on. Sometimes unplugging the radio and plugging it back in would restore normal operation. I wanted to continue to use this radio, so I turned to the [Grok](#) AI assistant to help me troubleshoot what was going on.



I asked Grok the following: *"I need detailed service information for a Bose Wave Radio II Model AWR1B1. Is any information available to enable repair of an intermittent power up situation? The Wave Radio II displays the "Please Wait" message on start up, sometimes removing power helps. On occasion there would be a loud audio thump on start up indicating there may be a power supply problem."*

Grok provided a lengthy response, but here's the main point: *"Your symptoms—"Please Wait" displayed on startup (sometimes resolved by unplugging), intermittent power issues, and an occasional loud audio thump—strongly indicate age-related degradation in the power supply and main circuit board components. These radios, now often 15-20+ years old, commonly suffer from failing electrolytic capacitors that cause unstable voltages, boot failures, and audio artifacts like thumps or pops during power-up. The thump is typically from a sudden voltage surge or discharge through the speakers when the system initializes unstably. Less commonly, it could involve a blown internal fuse, damaged power board, or faulty transistors/diodes, but capacitors are the primary culprit based on widespread reports."*

Basic resets (like unplugging overnight) provide temporary relief by discharging residual energy, but the problem recurs as components continue to degrade. Heat tricks (e.g., using a hairdryer on low for 1-2 minutes near the display/front panel) can sometimes kickstart it by temporarily improving capacitor performance, confirming thermal/age issues. If these don't help long-term, internal repairs are needed."

I took a look at the cited references from Grok, some were YouTube videos involving the repair of my exact radio for the same problem I was facing! All of these repairs involved removing and replacing all electrolytic capacitors on the processor board.

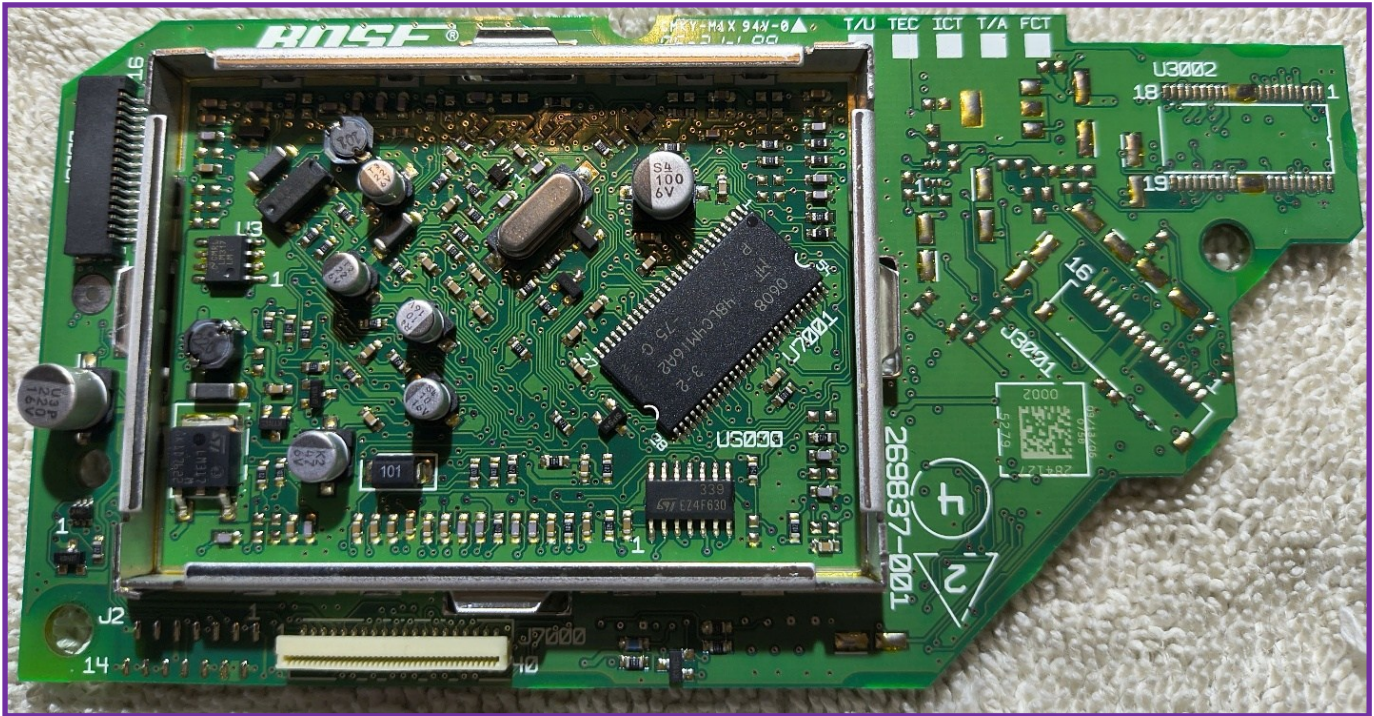
This caught me off guard – I always associated dried up electrolytic capacitors with World War II era vintage ham equipment, many amateurs have "recapped" these old pieces of historic gear to extend their life. But a Bose Wave radio? I got this radio in the early 2000's, I don't recall exactly when. It was one of our trips to the Jeffersonville Outlet Mall, the Bose store, shortly after Jeffersonville opened up. But I guess that's around 25 years ago. Wow, time sneaks up on you.

When I was looking up replacement parts, I saw that electrolytic capacitors have a shelf life that varies between 1-3.5 years when stored at room temperature. After that, they start to become "leaky". I guess those junk box capacitors I've had for up to 50 years are next to worthless!



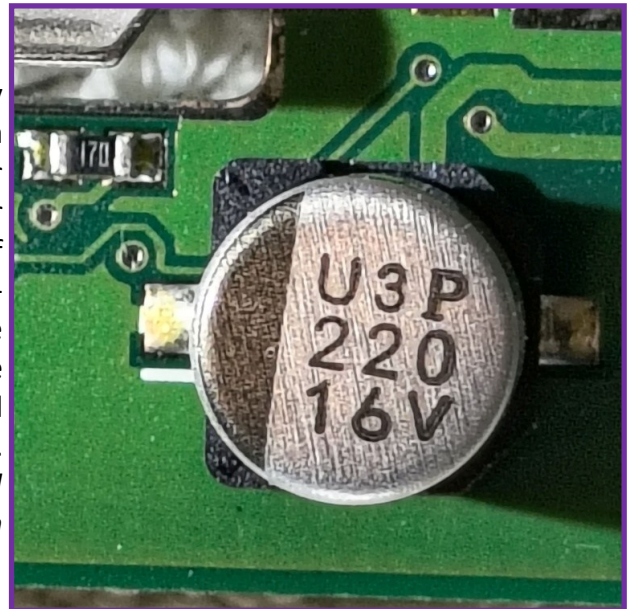
Repair of Bose Wave Radio (continued)

Looking at the great YouTube videos, I saw exactly how to open the radio up, what circuit board contained the problem capacitors, and how to replace them. There are 7 surface mount electrolytic capacitors on the processor board – the board controlling the radio, the display, etc. This was also something that I don't have experience with – surface mount electrolytic capacitors sounded strange to me. Here's a picture of the processor board, showing the 7 electrolytic capacitors. They are the silver cans with black stripes denoting the negative polarity lead. Note: electrolytics are dangerous when connected with the wrong polarity! They can smoke and pop off like a shotgun blast sometimes.



The other picture (right) shows one of them zoomed in.

These capacitors are quite small. I could see why they might be a failure mode, not much electrolyte in a package so small. They are also quite hard to desolder without specialized desoldering equipment. The solder pads are partially covered up by the capacitor itself which has no standoff from the circuit board at all except for a small black plastic insulator. All the YouTube videos recommended twisting these capacitors off the circuit board by force and then desoldering the small pieces of component leads left on the solder pads. When twisting these off, *you need to apply downward force as well as side to side twisting force to keep from pulling the solder pads off the circuit board.*



(Continued on next page)

[Back to Table of Contents](#)

I was nervous doing this but was actually successful in twisting all these surface mount capacitors off the circuit board and desoldering the capacitor lead remnants off the solder pads. I then replaced the surface mount capacitors with radial lead capacitors at the next higher rated voltage to hopefully provide longer life operation.



Here's a radial lead capacitor. Both leads protrude from the bottom of the can. My power supply capacitors and all the capacitors I replaced on the processor board are the radial lead type.



Here's an axial lead electrolytic capacitor. The leads protrude from the top and bottom of the can. I almost ordered these by mistake!

Since I heard thumps once or twice on powerup, I also replaced the two large electrolytic capacitors in the power supply section. They were conventional radial lead capacitors with large leads, not too difficult to work with. I suspect the original capacitors were OK, but I replaced them anyway.



There were many electrolytic capacitors on the main RF board, but I left those alone. None of the YouTube videos attempted to replace the numerous surface mount electrolytic capacitors on the main board. The risk of causing additional problems made me avoid those capacitors.

I reassembled the radio and powered it up. It works perfectly! It's nice to know that these electronics devices can be repaired and also how easy it is to find someone who has had the same exact problem and posted on YouTube. I am concerned about same problem popping up in some of my aging amateur radio transceivers, I might need to recap them too. It's worth looking on YouTube to see if anyone has had that problem on my exact radios.

Here's a photo of the Bose Wave radio in action, it's a nice piece of furniture, it's radio alarm clock is a gentle way to wake up. I hope to use it for many more years.

73, Ray [N8VMX](#)



Special Event Stations for April

Paul Sharp, [WS8R](#)

Here are a 2 links you can follow to find many SES that suit your varied interest. I may repeat and update some of these links as there are only a few sites focused on SES.

http://www.arrl.org/special_events/search/page:2/model:Event.

https://www.qsl.net/va3rj/spevents_dx.html. This link list a lot of SES in Europe and Russia.

Here is my pick of the litter of SES that I think will be of interest to my fellow BARC members. There are SES commemorating: Tater Day (do you want that extra large?), Las Vegas Radio Club (I bet this will pay double), 2 military celebrations, 2 Marconi Day celebrations, just 1 moonshine, Sun and Fun in sunny Florida to help with your ham radio collection, Wilber Wright's birthday, and POTA in the Bahamas (this could be the next location for our Saturday POTA locations!).

04/03/2026 | Tater Day 2026 - Yam It Up. Apr 3-Apr 6, 0000Z-2359Z, KI4HUS, Benton, KY. Marshall County ARA. 3.820 7.250 14.325 28.350. QSL. Steve French KM4JZJ , 3640 Olive Hamlett Rd., Benton, KY 42025.

04/04/2026 | Las Vegas Radio Amateur Club 65th Birthday. Apr 4, 1700Z-2300Z, N7L, Las Vegas, NV. Las Vegas Radio Amateur Club. 14.250. QSL. Paul Talbot, 2201 Barbers Point Place, Las Vegas, NV 89134. lvrac.org

04/10/2026 | The Titanic Memorial. Apr 10-Apr 15, 0000Z-2359Z, EG1912T, Vigo, SPAIN. Union Radi-aficionados de Vigo-Val Miñor. 14025 10105 7025 5355. QSL. Carlos Reboreda, Avenida das Caldas 53, 5-E, Ourense 32001, SPAIN. seccion.vigo@ure.es

04/11/2026 | Atlas Missile Silo, Oplin, TX . Apr 11-Apr 12, 1500Z-0100Z, KC5OLO, Abilene, TX. Key City Amateur Radio Club. 28.400 21.300 14.250. QSL. KCARC Key City Amateur Radio Club, PO. 2722, Abilene, TX 79604. <https://keycityarc.org>

04/11/2026 | Shark's Tooth Festival. Apr 11-Apr 12, 1400Z-2200Z, W4AC, Nokomis, FL. Tamiami Amateur Radio Club. 14.260 14.034 28.460 28.034. QSL. Tamiami ARC, PO Box 976, Nokomis, FL 34274. tamiamiarc.org

04/11/2026 | USS Wisconsin will be on the air celebrating her 82nd Birthday. Apr 11, 1500Z-2130Z, N4WIS, Norfolk, VA. USS Wisconsin Radio Club. 14.264 7.064 21.064 28.364. QSL. Nauticus c/o Battleship Wisconsin Radio Club (N4WIS), One Waterside Drive, Norfolk, VA 23510. n4wis.com

04/14/2026 | Sun & Fun Aerospace Exposition. Apr 14-Apr 19, 0817Z-0817Z, W4S, Lakeland, FL. Lakeland Amateur Radio Club. 14.40 7.40 18.93 28.40. QSL. Lakeland Amateur Radio Club, P.O. Box 90853, Lakeland, FL 33804. info@lakelandarc.com



Special Event Stations for April (continued)

04/15/2026 | Franklin County VA Moonshine Heritage Month. Apr 15-Apr 30, 0000Z-2359Z, W4M, Boones Mill, VA. AA4SS. 7 14. QSL. Timothy Boyd, 150 Forest Hill Ln, Rocky Mount, VA 24151.

04/16/2026 | Louisiana Purchase Special Event. Apr 16-Apr 21, 0600Z-0600Z, N5L, Gonzales, LA. Ascension Amateur Radio. 14.300. Certificate. K5ARC, PO Box 1617, Gonzales, LA 70707. www.k5arc.org

04/16/2026 | Wilbur Wright 159th Birthday Event. Apr 16, 0900Z-1600Z, W9W, New Castle, IN. Henry County (Indiana) Amateur Radio Club. 14.340. QSL. Dave Peters, 3517 Hampton Ct, New Castle, IN 47362. Henry County Amateur Radio Club - W9OB will be operating a special event station using the call W9W to celebrate the 159th birthday of Wilbur Wright. We will be operating from the Wilbur Wright Birthplace Museum in Henry County Indiana. We will also be doing a POTA activation from US-4232, Wilbur Wright State Fish & Wildlife Area. Please send an SASE if you would like a commemorative QSL card. QSL requests should be sent to W3DKP. The address is good in QRZ. W9OB@yahoo.com or <https://w9ob.org>

04/17/2026 | Florida State Parks on the Air Contest . Apr 17-Apr 20, 1200Z-2359Z, W4AC, Nokomis, FL. Tamiami Amateur Radio Club. 14.337. Certificate. Tamiami ARC, PO Box 976, Nokomis, FL 34274. fspota.org

04/25/2026 | Int'l Marconi Day Official Station. Apr 25, 1300Z-2100Z, K3S, Baltimore, MD. NSSARC. 7000. QSL. Ullis Fleming, 980 Patuxent Road, Odenton, MD 21113.

04/25/2026 | Marconi DAY. Apr 25, 1300Z-2000Z, W2GSB, Babylon, NY. GREAT SOUTH BAY AMATEUR RADIO CLUB. 14.245 28.500 21.325 7.275. Certificate. GSBARC MARCONI DAY , 200 East Sunrise Hwy, Lindenhurst, NY 11757. <http://WWW.GSBARC.ORG>

4/26/2026 | POTA in the Bahamas. Apr 26-May 9, 0000Z-2300Z, kc1yl, Seminole, FL. W4PRK. 7.268 14.320 3.905 28.500. QSL. LISA neuscheler, 11282 OAKRIDGE TRAIL, 11282 OAKRIDGE TRAIL, Seminole, FL 33772.



Answers to Amateur Radio Test Questions on pages 32-34

[Technician \(pg. 32\)](#)

T2B05 (C)
T6A01 (B)
T1C02 (D) [97.19]
T8D08 (D)

[General \(pg. 33\)](#)

G1B11 (A) [97.101(a)]
G2D02 (D)
G0A01 (A)
G9B11 (C)

[Amateur Extra \(pg. 34\)](#)

E7F06 (D)
E4D10 (C)
E5B01 (B)
E1D08 (D) [97.207]



Amateur License Test Questions

[Answers are on page 31](#)

Technician

T2B05

What would cause your FM transmission audio to be distorted on voice peaks?

- A. Your repeater offset is inverted
- B. You need to talk louder
- C. You are talking too loudly
- D. Your transmit power is too high

T6A01

What electrical component opposes the flow of current in a DC circuit?

- A. Inductor
- B. Resistor
- C. Inverter
- D. Transformer

T1C02

Who may select a desired call sign under the vanity call sign rules?

- A. Only a licensed amateur with a General or Amateur Extra Class license
- B. Only a licensed amateur with an Amateur Extra Class license
- C. Only a licensed amateur who has been licensed continuously for more than 10 years
- D. Any licensed amateur

T8D08

Which of the following is included in packet radio transmissions?

- A. A check sum that permits error detection
- B. A header that contains the call sign of the station to which the information is being sent
- C. Automatic repeat request in case of error
- D. All these choices are correct



Amateur License Test Questions (continued)

[Answers are on page 31](#)

General

G1B11

Who or what determines “good engineering and good amateur practice,” as applied to the operation of an amateur station in all respects not covered by the Part 97 rules?

- A. The FCC
- B. The control operator
- C. The IEEE
- D. The ITU

G2D02

Which of the following are objectives of the Volunteer Monitor Program?

- A. To conduct efficient and orderly amateur licensing examinations
- B. To provide emergency and public safety communications
- C. To coordinate repeaters for efficient and orderly spectrum usage
- D. To encourage amateur radio operators to self-regulate and comply with the rules

G0A01

What is one way that RF energy can affect human body tissue?

- A. It heats body tissue
- B. It causes radiation poisoning
- C. It causes the blood count to reach a dangerously low level
- D. It cools body tissue

G9B11

What is the approximate length for a 1/2 wave dipole antenna cut for 3.550 MHz?

- A. 42 feet
- B. 84 feet
- C. 132 feet
- D. 263 feet



Amateur License Test Questions (continued)

[Answers are on page 31](#)

Amateur Extra

E7F06

What is the minimum number of bits required to sample a signal with a range of 1 volt at a resolution of 1 millivolt?

- A. 4 bits
- B. 6 bits
- C. 8 bits
- D. 10 bits

E4D10

What does a third-order intercept level of 40 dBm mean with respect to receiver performance?

- A. Signals less than 40 dBm will not generate audible third-order intermodulation products
- B. The receiver can tolerate signals up to 40 dB above the noise floor without producing third-order intermodulation products
- C. A pair of 40 dBm input signals will theoretically generate a third-order intermodulation product that has the same output amplitude as either of the input signals
- D. A pair of 1 mW input signals will produce a third-order intermodulation product that is 40 dB stronger than the input signal

E5B01

What is the term for the time required for the capacitor in an RC circuit to be charged to 63.2% of the applied voltage or to discharge to 36.8% of its initial voltage?

- A. An exponential rate of one
- B. One time constant
- C. One exponential period
- D. A time factor of one

E1D08

Which VHF amateur bands have frequencies authorized for space stations?

- A. 6 meters and 2 meters
- B. 6 meters, 2 meters, and 1.25 meters
- C. 2 meters and 1.25 meters
- D. 2 meters



Editorial Policy and Style Guidelines for *Full Quieting*

Editorial Policy

Full Quieting welcomes articles from BARC members on any ham radio subject that is relevant to BARC. Our focus is our BARC members. We will not reprint items or articles that are easily available by other means (web, magazines, etc.).

Most articles will be “how to” or “what I did” articles that focus on technical or operational subjects such as a construction (antennas, equipment, stations, etc.), the use of hardware or software, operating in unique/challenging circumstances, or a memoir.

Full Quieting will also consider an occasional article on policy issues regarding the various national licensing/regulatory agencies and/or amateur radio associations so long as the article is relevant to BARC members and constructive in tone and recommendations.

Although all *Full Quieting* articles represent the experiences and points-of-view of their authors and not BARC, articles that focus on policy issues will be specifically labeled as a reflection of the author’s opinion.

Regardless of subject, when you submit an article you acknowledge that you are the original author or creator and you grant publication rights to BARC. Anything you submit remains your property and you may have it published elsewhere without the need for permission from *Full Quieting*.

Style Guidelines

Language: English is the official language of *Full Quieting* and all articles should be submitted in English. Don’t be concerned if English is not your first language: just tell your story in your own voice and use translating tools such as Google Translate to help if necessary.

File format: Submit your article as a Word, Word Perfect, OpenOffice or text file attachment to an email. A shared document available for download (such as a Google Doc) is also okay. **Do not submit as an email or PDF file.**

Pictures and other graphics: Do not embed pictures or tables in the article. Please submit as an email attachment or a shared image available for download. Please reduce the file size of the images before you send them to *Full Quieting*. Large files can be attached to a series of emails. Keep file size in mind regarding publication quality: for example, a half page image in the final PDF version of *Full Quieting* should be at least 400 pixels wide. If a photograph or graphic was taken or created by someone else, you should have their permission to use it and the permission of anyone identifiable in the image. **If you capture images from the web, provide a citation (URL) for that source and make sure the source does not prohibit use of the image in *Full Quieting*.**

(Continued on next page)



Editorial Policy and Style Guidelines for *Full Quieting*

(Continued from previous page)

Use these style conventions

- We are hams, not Hams, and our hobby is ham radio This is a change to our original format
- The name of our organization is: Bellbrook Amateur Radio Club or BARC
- The code we use is Morse (capitalize the M)
- We use Yagi antennas (capitalize the Y)
- Q codes should be capitalized: QRM, QSB QSY
- The plural of QSO is QSOs, not QSO's
- Modes should be capitalized: CW, SSB, FT8, RTTY
- Bands are written as 10 m, 15 m etc.
- The abbreviation for a Silent Key is SK.
- You might have had an Elmer, not an elmer

Bruce N7RR has provided a [two-page check list](#) of common International System of Units (SI) formats and abbreviations.

Use these formatting conventions:

- Set all borders to 1 inch. The preferred font is Calibri, 12 point.
- Do not use tabs or spaces at the beginning of a paragraph
- Use only a single paragraph or carriage return at the end of each paragraph
- To enhance readability, use two spaces after the period at the end of a sentence.



Miscellaneous BARC Info

REGULARLY SCHEDULED NETS

Daily (Sunday through Saturday) 1030, 1615 and 1845 Ohio Single Sideband Net (OSSBN) Primary: 3972.5 KHz LSB Alternates: 3968 & 7272 KHz LSB

Weekdays (Mon-Fri) 1130 DMR Net Brandmeister Talk group 310557. Accessible via hotspot, 147.390 (+) CC13 TS2(Dayton East), 444.4375 (+) CC11 TS2 (Dayton West)

Sundays 1900 Newcomers & Elmers Net (Cincinnati) 146.670 (-) (123.0 PL)

Sundays 2000 BARC Weekly Net 147.045 (+) (118.8 PL) [Alt 443.675 (+) (118.8 PL)]

Sundays 2100 Miami Co. Voice & Data Net (Data Net follows Voice Net) 145.230 (-) (no PL)

Winlink Tuesdays GCARES Winlink Net Any time on Tuesdays Eastern Time Send To: W8LRJ, Cc: KE8FMJ W8GCA-10 445.010 (S), W6CDR-10 145.010 (S)

Tuesdays 1900 Dayton Veterans Admin Amateur Radio Club Net (W8DVA) 443.850 + 107.2 pl

Tuesdays 1915 Ohio ARES HF Net W8SGT Net Control at OEMA HQ Primary: 3902 KHz LSB (+/- QRM) Alternate: 7240 KHz LSB (+/- QRM)

Tuesdays 1945 Ohio Digital Emergency Net Primary: 3584.5 KHz USB (1500 WF) Alternate: 7072 KHz USB

Tuesdays 2000 MoCoARES Weekly Net 146.640 (-) (123.0 Hz PL) (Except—No Net on last Tuesday of even months (MoCoARES meeting) (Except—On 2nd Tuesday: Voice and Data Net on 444.250 (+) (123.0 PL)

Tuesdays 2100 GCARES Net (Voice & Data) 146.910 (-)(no PL) [Alt = 442.725]

Ohio Winlink Wednesdays OH ARES Winlink Net Any time on Wednesdays Eastern Time Send To: K8EAF, Cc: W8LRJ, KE8FMJ W8GCA-10 445.010 (S), W6CDR-10 145.010 (S)

Wednesdays 2000 Ohio District 3 ARES Net (West Central Ohio Regional Net) Primary: 145.110 (-) (67.0 PL) Alternate: 146.820 (-) (77.0 PL)

Wednesdays 2000 Beginners Net (Dayton Area) 444.875 (+) (94.8 PL)

ZOOM-Basic Setup & Configuration

Here's a link to the Zoom Video Tutorials: [Zoom how-to video tutorials – Zoom Help Center](#)

Also see: "Join a Meeting" and the "Joining & Configuring Audio & Video" tutorials for new users. Send questions or problems to John, [W8LRJ](#) ASAP but BEFORE the next meeting.

BARC Fundraising Opportunity — Kroger's Rewards Program Please use your Kroger Card when shopping at Kroger's and support BARC. If you haven't signed up and need help, bring your Kroger Card to the next BARC meeting, and we'll help you get registered (contact the [BARC Treasurer](#)).

ARRL Discounted Membership Offer One of the benefits of club membership is the opportunity to become an ARRL member at a discounted price. BARC is an ARRL affiliated club and receives a commission for new first-time ARRL memberships transacted through the club. BARC passes on this commission (discount) as a club membership benefit to promote ARRL membership. BARC members currently receive a \$15 discount on a NEW first year ARRL membership cost when placed through the Club. Please contact the [BARC Treasurer](#) for details.



Directions to BARC Clubhouse and Radio Room

St. Pierre Education Center
3757 Upper Bellbrook Rd
Bellbrook, OH 45305

[Map Link](#)

Park in front of building, enter in front-right door.

Conference room: Take first hallway to the left, conference room is on the right. **Radio Room:** Straight down hallway, left turn into gym. Door on left.

