



Q-FIVER

THE OFFICIAL NEWSLETTER OF THE OH-KY-IN AMATEUR RADIO SOCIETY
CINCINNATI, OHIO — WWW.OHKYIN.ORG
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In this issue:

- Model Rockets & Radios
- November meeting info
- Holiday Party Invitation
- Much more!

November Meeting Location Change

Due to election day, the **November** meeting will be held at Lockland Church of the Nazarene, our former meeting location, at 335 W. Wyoming Ave., Cincinnati, Ohio 45215.

A Note from Our Membership Chair

Well, here we are — November already! I hope everyone who celebrated had a great fall, and we are staring at Thanksgiving right around the corner. It seems as if we just completed Field Day! I don't know about everyone else, but it seems the older I get, the faster time flies.

With the new year, comes the time for all of us to renew our membership for the year 2026, if you have not already done so. I have already received many renewals — thank you!

Joining and/or renewing is quite simple.

The easiest way to send payment is by using ANY major credit/debit card or PayPal using this link:

<http://renew.ohkyin.org/>

You can also choose to mail your payment with a printable form at the following address:

<http://www.ohkyin.org/docs/Applications/Membership%20App.pdf>

As always, if anyone has any questions on joining or renewing your membership, please contact me at KA3MTT@YAHOO.COM. You can also call or text me at the following number: 859.760.9262

73,

Nathan Ciufo, KA3MTT

OH-KY-IN ARS Membership Chairman



Brunch Bunch

by George Gardei, N3VQW

The November Brunch Bunch will be held at Bob Evans at 5245 N. Bend Rd., Cincinnati, Ohio 45247, right off of I-74 on Saturday, November 8th at 1:00 PM.

<https://www.bobevans.com/menu>

Remember that the Brunch Bunch always meets the second Saturday of every month at 1pm at a location to be announced each month. If you can't join us this month, maybe you'll be available to join us in the months ahead. If you have any suggestions on what restaurant you think might be a good place for the Brunch Bunch to visit in the future, please let me know.

George N3VQW



*You are
cordially invited to the*

OH-KY-IN

Holiday Party!

Tuesday, December 2

7:30 PM

Arlington Heights Town Hall

Combining Amateur Radio with Model Rocketry (Part 3)

by George Gardei, N3VQW

In the previous two articles, I covered building a 433 MHz telemetry system using commercially available parts. The first flight of the “Green Eggs and Ham” rocket successfully transmitted altitude and temperature data; however, I missed some data when I was unable to track the rocket. I wanted to know if a ground-based non-directional antenna could capture data from the rocket, and which antenna polarization would work best. There was only one way to find out: test them both head-to-head.

Continuing Evolution: Flights 2 and 3

On September 14th I went to the Wright Stuff Rocketeers launch up in Huber Heights, Ohio for what would become the Green Eggs and Ham Flights 2 and 3. The first flight used the same D22-4 motor I used on Flight 1. Everything performed beautifully — the rocket flew great and landed safely and the telemetry system transmitted flawlessly, and I successfully tracked it with the Yagi antenna throughout most of the flight. There was just one small problem: I forgot to configure the serial terminal software on the laptop to capture the data to a file. All that perfect telemetry I received vanished into the digital void.

After flying the other rockets I brought, I had time to fly the Green Eggs and Ham for a second flight. However, I'd run out of D22-4 composite motors. I had some D22-7s available, but that seven-second ejection delay would have deployed the parachute while the rocket was descending at nearly 50 feet per second. This could damage the airframe or rip the shroud lines out of the parachute. Instead, I opted to use a black powder D12-3 motor. With less total impulse than the D22, the flight topped out around 500 feet and the rocket landed at between 13-14 feet per second.

The September flights confirmed that enlarging the vent holes in the white cardboard payload tube fixed the altitude anomaly I noticed in the data from the first flight. The barometric sensor now tracks changes accurately, and temperature readings are reliable without the greenhouse effect from using the clear payload tube.

Transmitter Upgrades

Before the September flight, I integrated an Adafruit BNO085 9-axis absolute orientation sensor to the radio module by utilizing the I2C interface on the BMP390 sensor. The I2C (Inter-Integrated Circuit) interface is a simple two-wire connection that allows multiple sensors to communicate with the microcontroller. The I2C interface also allows me to daisy chain multiple sensors to each other. The BNO085 provides detailed accelerometer and gyroscope data about the rocket's motion and orientation during flight. It also has its own microprocessor to handle the math, which means the Feather Board's microcontroller only needs to read the results from the BNO085.

To properly mount the BNO085 horizontally (necessary for correct axis alignment), I replaced the hand-cut balsa wood frame (which didn't survive Flight 1 anyway) with a custom 3D printed design. The new frame not only provides precise sensor mounting but also offers better structural support and more flexibility for future modifications. The frame was printed in PETG+ for its heat resistance, which required me to finally upgrade my 3D printer from my old Ender 3 Pro to a Flashforge AD5X which is better suited for printing at higher temperatures.

After the September launch, I added an Adafruit Featherwing Adalogger board to the module, which plugs directly into the General-Purpose IO pins on the Feather board. The Adalogger adds both SD card storage and a real-time clock. This would allow the transmitter module to record all sensor data locally while simultaneously transmitting critical parameters via the packet radio.

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However, writing to SD cards introduces significant latency. My initial implementation caused the transmission rate to drop noticeably. The solution was implementing a buffering system that accumulates data and only writes to the card every 10 loop iterations, keeping the transmission rate acceptable while still capturing everything to permanent storage. The real-time clock allowed me to add a time and date stamp to the file created on the SD Card.

I also added an I2C GPS module. Finding space for the GPS module presented an interesting challenge — the only available location was inside the bottom bulkhead of the payload bay, which meant mounting the GPS unit upside down during ascent. I designed and 3D printed a custom mount for this unusual orientation. Interestingly, when the rocket descends under a parachute, the upside-down GPS is right-side up!

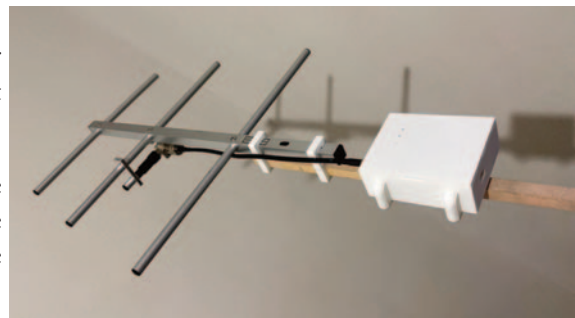
Adding GPS introduced another constraint: the radio module's packet size is limited to 60 bytes. With all these sensors generating data, I couldn't transmit everything in real-time. I prioritized the most critical parameters for radio transmission: millisecond timestamp, battery voltage, altitude, latitude, and longitude. All other sensor data — including the temperature, pressure, and accelerometer and gyroscope readings — are saved exclusively to the SD card for post-flight analysis.

Building Better Receivers

The September flights highlighted a weakness in my ground station setup: relying on a laptop connected to the receiver created opportunities for operator error (like forgetting to start the capture). I needed standalone receivers that could capture data independently.

The solution was to add SD card capability directly to the receiver module connected to the Yagi. To do this, I built a custom receive board using the Feather M0 board and a 3.3V SD card breakout board. I also added three status LEDs and three 220 ohm current limiting resistors. The LEDs are:

- Red: Fault detected
- Yellow: SD card detected
- Green (flashing): Actively receiving data



The receiver code automatically increments the log filenames (RxLog_1.csv, RxLog_2.csv, etc.) to prevent accidentally overwriting previous data files. The receiver board does not have a real-time clock so there are no date stamps on the file. With the design finalized, I designed a 3D printed enclosure to protect the components.

Antenna Development

For the fourth flight of the Green Eggs and Ham, I wanted to test vertically and horizontally polarized antennas. For the vertically polarized antenna, I purchased a commercial 433 MHz vertical antenna, and I built a half-wave dipole from scratch for the horizontally polarized antenna. I built identical receivers for each antenna, using the same design as the Yagi receiver.

A half-wave dipole at 433 MHz requires elements roughly 34 cm long each. The brass tubes I purchased for this project were only 30 cm long, so I used a telescoping design where smaller diameter tubes slide inside larger diameter tubes to extend each element to the proper length. This has the added benefit of making the antenna tunable. To prevent any sharp brass edges from causing injury at the crowded launch site, I 3D printed end caps for each element. For the center insulator and mounting point, I designed and printed a custom part that securely holds both elements while maintaining proper electrical isolation.

The plan was to test all three antenna configurations simultaneously: the Yagi-on-a-stick for mobile tracking,

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and the vertical and dipole antennas mounted on a single mast in a T-configuration, separated by about 5-6 feet on opposite ends of the T to prevent interaction. Combined with the onboard SD card data from the transmitter, I would have four independent datasets to compare and analyze.

Flight Day: October 25, 2025

The Wright Stuff Rocketeers launch at their Cedarville, Ohio site operates under a 17,000-foot FAA waiver, but access is seasonal — only available after harvest when the field is clear of crops. October 25th turned out to be a busy launch day with over 30 cars lined up along the drive and hundreds of attendees, including college students from Toledo flying high-power rockets and various youth programs. The weather was ideal: starting at 38°F in the morning and warming to 57°F by afternoon, with light 2-7 mph winds and cloudy skies.

I set up my ground station with the T-mast holding both the vertical and dipole antennas and had the Yagi receiver ready for mobile tracking. However, after turning on the Yagi receiver, the red LED lit indicating there was a fault. Despite troubleshooting, I couldn't resolve the fault. I would have to proceed hoping the data would be recorded on the SD

Card, but if it doesn't, I will just need to rely on the vertical and dipole ground stations to receive the data.

Unfortunately, I could not purchase a D22-4 composite motor, so once again I had to use a D12-3 motor. After prepping the motor, prepping the parachute, and setting the Jolly Logic chute release to 300 feet, the Green Eggs and Ham was ready for another flight. I powered up the transmitter and confirmed all three receivers were receiving data. I walked over to the Range Safety Officer, turned in my paperwork, setup the rocket on the pad, and walked to a position away from the crowd where I could better track the rocket.

“Now on pad A4, George's Green Eggs and Ham, going in 5... 4... 3... 2... 1...”

The rocket leapt off the pad with that distinctive grayish smoke trail of the black powder propellant. I tracked it visually through ascent, this time I was able to track the rocket through apogee.

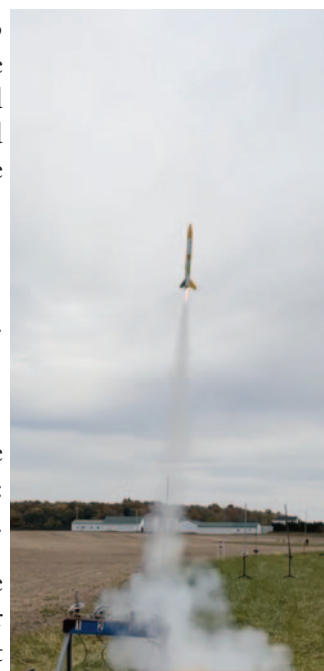
The Data Tells the Story

After retrieving the rocket and powering down the transmitter, I checked the SD cards on all three receivers. The Yagi receiver had failed to write to the SD card. Even so, I had three datasets to analyze: the onboard SD card from the transmitter, and the receiver logs from the vertical and dipole antennas.

The first thing I noticed in the data was despite maintaining lock on 11-17 satellites throughout the flight, the GPS's position coordinates didn't update for nearly 70 seconds after launch. The transmitter recorded the launch pad coordinates, then continued sending those same coordinates throughout the entire flight. Only well after landing did the GPS finally update to show the landing position.

This suggests either a configuration issue with the GPS module's update rate or possibly a movement threshold setting that prevented position updates during the rapid motion of flight. This will require investigation and verbose logging on the next flight to determine the root cause.

The telemetry data revealed that the Green Eggs and Ham reached a maximum altitude of 464 feet during the seventh second of flight — 132 feet short of the OpenRocket simulation's prediction of approximately 596 feet. This variance is typical and expected when accounting for real-world factors that simulations don't capture such as motor performance variation, atmospheric conditions, and the accumulated effect of repairs and reinforcements. The Green Eggs had some repairs, and the parachute was upgraded from the thin plastic parachute to a heavier, 18" nylon parachute. Model rocket motors can vary ± 5 -10% in total impulse even from

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the same manufacturing lot, and every piece of tape and drop of glue adds weight that wasn't in the simulation.

The descent data was equally interesting. From the peak altitude of 464 feet, the rocket descended over 25 seconds. The telemetry data clearly shows the Jolly Logic chute release activating at second 13 between 300 and 270 feet. The descent rate dropped from 47 fps during free fall to 21 fps as the parachute opened, finally stabilizing at 13.6 fps once fully inflated—right in the ideal range for safe landings. The new 18-inch nylon parachute was perfectly sized for Green Eggs and Ham's weight with the full telemetry payload. This is a dramatic improvement over Flight 1's 53 fps impact that damaged the fin and the payload bay and balsa frame. The total flight time was 32 seconds.

Antenna Performance Comparison

The real treasure in the dataset was the comparative antenna performance data. Throughout the 32-second flight, the transmitter sent approximately 60-70 packets per second — over 2,100 total packets from liftoff to landing. Both the vertical and dipole antennas received telemetry throughout the entire flight, but the performance difference was striking.

The vertical antenna maintained signal strength between -43 and -66 dBm (decibels relative to one milliwatt where more negative values indicate weaker signals) throughout the flight, with the strongest signals (-43 to -48 dBm) occurring during the descent phase. At apogee, when the rocket was nearly overhead at 464 feet, the vertical antenna recorded -65 dBm — still a strong, reliable signal.

The dipole antenna told a different story. Throughout the flight, it maintained signal strength between -78 and -92 dBm — consistently 25-35 dB weaker than the vertical antenna. At the critical apogee point, the dipole recorded -89 dBm, a 24 dB difference from the vertical antenna at the same moment. While both antennas successfully received packets throughout the flight, the vertical antenna's superior signal margin meant more reliable reception with fewer missed packets.

During the 32-second flight, the transmitter sent 2,189 total packets. The vertical antenna successfully received 2,141 packets (97.8%), missing only 48 packets throughout the entire flight. The dipole antenna received 1,975 packets (90.2%), missing 214 packets. While both achieved over 90% reception — more than adequate for flight tracking — the vertical antenna's superior signal strength translated to noticeably more reliable data capture.

The most dramatic difference appeared when the rocket was on the pad and after landing. When the rocket was on the ground, the vertical antenna maintained a steady -59 dBm signal (-65 dBm on the pad) — strong and stable. The dipole antenna, however, was completely silent both on the pad before launch and after landing. Out of thousands of packets transmitted while the rocket sat on the ground, the dipole receiver captured exactly one packet: during second 50 (about 18 seconds after landing), a single packet registered at -102 dBm — barely above the receiver's sensitivity threshold and 43 dB weaker than the vertical antenna's signal at the same time.

This dramatic difference after landing was initially puzzling. The rocket was lying horizontally on the ground, which should have favored the horizontally polarized dipole antenna. However, two factors conspired against the dipole: it was mounted only about 10 feet high on the T-mast and was surrounded by parked cars. At ground level, those vehicles created an effective RF shield, blocking line-of-sight and creating reflections that interfered with reception. The vertical antenna, despite being mounted even lower than the dipole, maintained reception—likely due to its omnidirectional radiation pattern and how ground reflections interact with vertically-polarized signals.

Lessons Learned

This flight provided several valuable insights beyond just “vertical antennas work better.” First, antenna placement matters enormously. Even small differences in height and surrounding obstacles can mean the difference between

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reliable reception and complete signal loss. The dipole worked well during flight when it had clear line-of-sight to the rocket but failed completely when ground-level obstacles came into play.

Second, real-world RF propagation is complex. The vertical antenna's 25-35 dB advantage during flight and 43 dB advantage on the ground wasn't just about polarization matching—it was about radiation patterns, ground reflections, and how omnidirectional coverage overcomes the challenges of a rapidly moving target with changing orientation.

Third, redundancy proved its value. Having both the ground-based receivers and onboard SD card logging meant that even when the Yagi receiver failed, I still captured complete datasets from two independent antennas plus the authoritative onboard log. This redundancy not only ensured mission success but provided the comparative data that made this analysis possible.

Fourth, GPS integration still needs work. Getting satellite lock is one thing; getting timely position updates is another. The next test flight will include verbose GPS logging to diagnose why position updates lagged so far behind the actual movement.

Looking Ahead

The antenna comparison data has answered the primary question: for this application, a vertical omnidirectional antenna significantly outperforms a horizontal dipole. The ~30 dB signal advantage throughout flight and the ability to maintain ground contact after landing make the vertical antenna the clear choice for the primary ground station.

The failed Yagi receiver will be troubleshoot and repaired — having a high-gain directional antenna for long-range tracking remains valuable, especially as I move toward higher altitude flights.

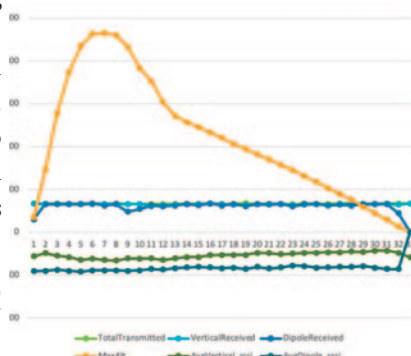
The next major hardware project is adding a display to the Yagi receiver. I've already purchased a 20x4 character LCD and an I2C backpack to interface it with the receiver's 3.3V circuit. This will provide real-time altitude and GPS coordinates without needing to retrieve the SD card — invaluable for knowing where a high-altitude flight has landed.

Flight 4 of Green Eggs and Ham successfully revealed clear performance differences between antenna types and provided insights into the challenges of ground-level RF reception. The vertical antenna's superior performance throughout all phases of flight, combined with its ability to maintain contact after landing, makes it the primary choice for future ground stations. Most importantly, this project continues to demonstrate that amateur radio and model rocketry are natural complements. Both hobbies value technical experimentation, systematic problem-solving, and the satisfaction of making things work despite Murphy's Law. Whether it's tracking a rocket with a Yagi antenna, analyzing RF signal propagation, or just walking across a harvested field to retrieve a rocket that drifted further than expected, every flight brings new challenges and new opportunities to learn.

Until the next flight, 73 and safe landings! N3VQW clear.

All photos by the author

Telemetry Data & Antenna Performance



	Total Second Transmitted	Vertical Received	Dipole Received	Min Alt	Max Alt	Avg Alt	Avg Vertical RSSI	Avg Dipole RSSI	Ascent Descent Rate
1	67	67	30	3	34	11	-56	-91	
2	66	65	66	34	146	86	-49	-90	75
3	67	65	65	146	278	215	-55	-88	129
4	66	65	66	281	374	331	-58	-90	116
5	66	65	65	377	435	409	-65	-92	78
6	67	66	67	436	463	454	-62	-89	45
7	66	66	62	458	464	462	-65	-89	8
8	67	66	65	428	460	440	-66	-89	-22
9	66	65	48	374	433	399	-61	-90	-41
10	66	66	54	352	382	367	-62	-89	-31
11	66	61	63	289	352	330	-61	-86	-37
12	66	63	60	272	303	283	-65	-87	-47
13	66	64	62	256	272	263	-61	-84	-21
14	66	65	66	246	257	252	-58	-82	-11
15	66	65	63	233	246	239	-58	-81	-13
16	67	67	67	220	233	227	-54	-82	-12
17	65	65	62	206	220	213	-53	-84	-14
18	66	64	66	194	206	199	-53	-83	-14
19	68	63	61	182	194	188	-53	-86	-11
20	66	65	65	170	182	176	-48	-81	-12
21	66	64	65	158	170	164	-49	-85	-13
22	66	66	66	145	157	151	-51	-82	-12
23	65	63	60	131	145	138	-50	-78	-13
24	67	64	65	118	131	125	-48	-79	-14
25	66	66	66	104	117	110	-48	-83	-15
26	66	62	63	90	103	96	-47	-82	-14
27	67	65	64	75	89	82	-47	-81	-14
28	67	66	62	60	75	68	-45	-81	-15
29	66	65	66	45	60	52	-46	-79	-15
30	66	65	65	29	44	37	-43	-83	-15
31	67	66	66	13	29	21	-43	-86	-16
32	67	64	44	0	13	6	-48	-86	-16
33	67	67	0	0	0	0	-99	0	0
Totals	2189	2141	1975						

October, 2025 Meeting Minutes

OH-KY-IN Amateur Radio Society

Minutes of October 7th, 2025, Member Meeting

The meeting was called to order at 7:30 PM by Ryan AC8UJ with the Pledge of Allegiance. The club meeting was held in person and via Zoom.

Guests: Matthew Robbins AA9YH, Mark

New Licenses or Upgrades: N/A

Attendance: 19 in person; 11 via Zoom

Health and Welfare: N3VQW's niece is home from hospital; Cesi KD8OOB cleared from shoulder repair

Awards & Achievements: N/A

Prior Meeting Minutes: George N3VQW made the motion, and Stephen KE8TEY seconded accepting the meeting minutes for September 2025 as published in the Q-Fiver. Motion passed.

Membership: Not present. 131 have renewed for the year out of 157 from last year. Please renew at <http://renew.ohkyin.org/>.

Treasurer: Kevin W8SM, Treasurer's report read and filed for audit.

Silent Key: N/A

Tech Committee: N/A

Classes and Exams: 8 Students in the Tech class. Gary KB8MYC still needs VE's to register.

Fox Hunts: Bob WA6EZV. N/A

Library: Contact Justin KE8COY if you would like to check out items from the library.

Nets: The SSTV net is suspended due to lack of participation.

Website: Still looking into changing the format of the website. Also still looking for someone to help with the website. George N3VQW offered to assist Rocky.

QCEN: Meetings are held the 2nd Thursday of the month at 7:30PM at the Red Cross building.

ARES: Meetings are held the 3rd Tuesday of the month at the ROC at 7PM.

Brunch Bunch: On October 11th at 1:00PM at Price Hill Chili.

Events:

- 11/15-11/16 November Phone Sweeps @ N8YC
- 1/24-1/25 Winter Field Day @ Harvest Home Park Barn

Old Business:

- Cesi KD8OOB: Satellite station grant update. No updates.

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- Ryan AC8UJ: Remote participation in split-the-pot. N/A.
- Rocky KE8DZS Harvest Home Recap

New Business:

- Nominating Committee Andy K3CAQ. The club will select two board members to fill the two open seats.

Announcements: N/A

Program: Karin KD4DXX From RT Systems

Split the Pot: \$82.00 Split will be \$41.00 to Mark

Motion to adjourn made by Trent KE8ZLM, seconded by Drew KE8JTL. Meeting adjourned at 9:12PM

Respectfully submitted, Steve Crase N8PUP, Secretary

Club Elections

The November meeting is here, which means it is time to nominate candidates for 2026 officer positions. As always, we have five positions up for election including President, Vice President, Treasurer, Secretary and one Director position. The Director position is a three year term. All others are one year terms. If you wish to nominate someone or run for a position yourself, you may contact Drew KE8JTL (macdrew.1@pm.me), Andy K3CAQ (andy.moorwood@moorcom.com) or Stephen KE8TEY (ke8tey@qcen.org) or make your nomination during the November meeting. Elections will be held at the December meeting.

Please consider stepping up to a leadership role within the club. OH-KY-IN is only as good as its members make it and serving in a leadership position is a great way to drive the club to a bright future.



Photo by Mark Duffel on Unsplash

DX Spots - November 2025

DE KA3MTT

Sun	Mon	Tue	Wed	Thu	Fri	Sat
CT9 - Madeira thru 11-1 	XF4B - Revilla Gigedo thru 10-31 	J88PI - St Vincent Thru 11-5 	9U1RU - Burundi Thru 11-20 ----- 5R8TT - Madagascar thru 11-12	9L8MD - Sierra Leone thru 11-10 	CP7DX - Bolivia Thru 11-10 	1 T88HR - Palau Thru 11-6 ----- VP8THW - Falkland Is thru 11-22
2	3 ZC4RH - Cyprus SBA thru 11-7 ----- ZL7 - Chatham I Thru 11-20 ----- 7P8EA - Lesotho Thru 11-27	4	5	6	7	8
9	10	11	12	13	14	15 T2JK - Tuvalu Thru 11-21 
16	17 V47JA - St Kitts & Nevis thru 11-23 	18	19	20 5J0EA - San Andres Is thru 11-30 ----- PJ4KV - Bonaire Thru 12-3 ----- V51WH - Namibia Thru 12-31	21	22 YJ0GC - Vanuatu Thru 12-5 
23	24 VP9 - Bermuda Thru 12-4 	25 XU7RRC - Cambodia thru 12-3 ----- A52AA - Bhutan Thru 12-5	26	27 	28	29
30 TO9W - St Martin Thru 12-12 						

Prepared by Nathan Ciufu, KA3MTT

Calendar of Upcoming Events

Tuesday	November 4 @ 7:30 PM	Club Meeting (Zoom & Lockland Church of the Nazarene)
Wednesday	November 5 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Tuesday	November 11 @ 7:30 PM	Board of Directors Meeting (same Zoom info as club meeting)
Wednesday	November 12 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Sat & Sun	November 15 & 16	November Phone Sweeps @ TBD?
Wednesday	November 19 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Wednesday	November 26 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Tuesday	December 2 @ 7:30 PM	Club Meeting (Zoom & Arlington Heights Town Hall)
Wednesday	December 3 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Tuesday	December 9 @ 7:30 PM	Board of Directors Meeting (same Zoom info as club meeting)
Wednesday	December 10 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Wednesday	December 17 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Wednesday	December 24 @ 9:00 PM	Tech Talk Net (146.670 Repeater)
Wednesday	December 31 @ 9:00 PM	Tech Talk Net (146.670 Repeater)

Meeting Information

Our monthly club meetings are typically held at the Village of Arlington Heights Town Hall (601 Elliott Avenue, Cincinnati, Ohio 45215). Enter using the exterior elevator to the second floor at the rear of the building. We typically also offer Zoom video conferencing as an option. Please join us at 7:30 PM Eastern time each first Tuesday of the month. The Zoom call will open at about 7:20 PM for you to join. The passcode is 146670. **NOTE: Location for November will be Lockland Church of the Nazarene!**

<https://zoom.us/j/996062859>

If you are unable to join online, you may join by telephone at (301) 715-8592 with a meeting code of 996 062 859 and passcode of 146670. Long distance rates will apply.

OH-KY-IN Repeaters

146.670 (-) Clifton

146.625 (-) Edgewood (Fusion & analog WIRES-X)

146.925 (-) Delhi (Fusion & digital WIRES-X)

All repeaters require a 123.0 Hz CTCSS (PL) tone.

Life Members

John Phelps	N8JTP
Kenneth E Wolf	N8WYC
John W Hughes	AI4DA
Karl R Kaucher	KK4KRK
Fred Schneider	K9OHE
Dan Curtin	KF4AV
Steve Weeks	AA8SW
Kelly Hoffman	K8KAH
Mick Cook	KD8IOQ
Steve Crase	N8PUP
Joe Felix	K8NW

Support OH-KY-IN by Shopping

Of course we appreciate your membership dues and all of the ways you give time and energy to the club, but did you know you can also support OH-KY-IN just by doing things you already do?

Kroger Community Rewards is a great source of income for the club and requires no effort! Visit <http://www.krogercommunityrewards.com/> and set us as your charity. We are organization **QY352**.

Contact Bruce N8BV for details about the program.



PANDA/stock.adobe.com

Newsletter Submissions

Please send any submissions you would like included in upcoming newsletters to Ryan, AC8UJ. All content is welcome! You can e-mail content to him at his callsign at arrrl.net. Please send all content either as plain e-mail text (attach any photos or graphics) or as a PDF file. Depending on the spacing needs of the particular issue, Ryan may reformat your content and adjust the layout. Because of this, if you send a PDF, please also include any graphics used as attachments.

Do you have a photo you think would look good on the cover? Send it! Cover photos must comply with a few requirements. Most importantly, like all content included in this publication, we must be able to clearly determine that we are allowed to reprint it. This can be proven in one of two ways. Method one is if it is original artwork you personally created and you can attest to it being your property, created by you. Method two is for you to provide clear evidence of where you obtained the artwork along with a reference showing that we are free to reproduce it (e.g. a link to the license terms for the artwork, written permission from the creator, etc.). Cover photos/art must also be composed in such a way that the masthead at the top of the cover page will not cover the main subject of the photo/art and space exists for the "In this issue" box. Images that relate in some way to radio are preferred but other pieces will be considered as well.

Please renew your membership, if you haven't already

Committee Chairs & Appointments

Technical Operations Gary Coffey KB8MYC
 ARPSA Representative (open)
 Volunteer Examiners Gary Coffey KB8MYC
 QCEN Representative Tom Delaney W8WTD
 Membership Nathan Ciufo KA3MTT
 Fundraising Bruce Vanselow N8BV
 Education Tom Delaney W8WTD
 Repeater Control Ops Mgr. . . Bruce Vanselow N8BV
 PIO Steve Crase N8PUP
 SSTV Net Mgr Steve Crase N8PUP
 Librarian Justin Moore KE8COY
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Did you know that OH-KY-IN ARS has been recognized by the Internal Revenue Service as a 501(c)(3) charitable organization? That means anyone who itemizes on their Federal return can take a charitable deduction for a contribution to OH-KY-IN, as long as it qualifies under the general rules applicable to all other charitable contributions (for example, the contribution must be in cash, or other property which the organization has agreed to accept; the value of volunteered services is not deductible). Membership dues, such as the cost of a life membership, may even be deductible; consult your own tax advisor for details if considering that. Posthumous donations by Will or by naming the organization as beneficiary of a financial account are also welcome.

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Please remember to **renew** your membership!

We need all of you to keep OH-KY-IN going strong!



OH-KY-IN Amateur Radio Society has been a leading amateur radio organization in the Cincinnati, Ohio area for more than 60 years. We are a 501(c)(3) nonprofit organization dedicated to the advancement of all things radio. No matter the amateur radio interest, OH-KY-IN members are involved.