



# Q-Fiver

***Official Newsletter of the OH-KY-IN Amateur Radio Society***

## In The News

*In Person Meetings,  
Classes, and  
Hamfests remain  
cancelled, but don't  
despair, you can  
always*

**GET ON THE AIR!!**  
**GET ON THE AIR!!**

*(Are YOU(!) ZOOMing  
into online meetings?)*

## In The News

*Justin in the  
Cincy  
Enquirer,  
Justin in QST,  
Justin  
Everywhere!*

**See Page 28**

## In The News

*Find out what's  
going on up there!*

*Check out the monthly  
propagation news!*

[Solar Propagation  
Information](#)

## Calendar of Events for August 2020

Tue	Aug 04	Club Meeting (see announcement <a href="#">page 2</a> )
Wed	Aug 05	TechTalk Bob W8CRO
Sat	Aug 08	Brunch Bunch Cancelled due to State Group Restrictions
Tue	Aug 11	Board of Directors meeting (see announcement <a href="#">page 2</a> )
Wed	Aug 12	TechTalk Mike N8MRS
Wed	Aug 19	TechTalk Dale KC8HQS
Wed	Aug 26	TechTalk George N3VQW

***IMPORTANT AUGUST MEETING NEWS FROM THE PRESIDENT***

Club Members and Friends,

Due to the continuing situation with COVID-19, our club meetings and board meetings will be held online & by phone via Zoom for the foreseeable future. The club meeting is the first Tuesday of each month at 7:30 PM and the board meeting is the second Tuesday of each month at approximately 7:20 or so (due to a schedule challenge). Since there is no readily available means of having an anonymous voting process, we will continue to postpone voting on the bylaws changes until a more appropriate time. You do NOT need to create an account to use Zoom.

Both events (the club meeting and the board meeting) will use the same Zoom meeting code. I hope to have the meetings opened to join at least 5 minutes before the scheduled start time and hopefully earlier. Here are some tips to ensure success for everyone:

- If you are not speaking, please keep your line muted.
- For best results, use a headset or earbuds or something similar. We've seen that iPads and higher end smart phones tend to work fine with just their built-in speakers as have newer computers, but older and/or lower end smart phones have created feedback problems. A headset or earbuds will solve that virtually 100% of the time.
- If possible, join from a computer or smartphone/tablet instead of dialing in by phone. This will allow you to see who has joined as well as view video if people are sharing their video. (For our visually challenged members, phone would be just fine and probably simpler.)
- If you are going to dial in by phone, be sure to use a phone that has free long distance. Otherwise, you will be paying for long distance charges for the duration of the call.
- If you dial in, I may call out the last four digits of your phone number and ask you to identify yourself so that we can change the display from your phone number to your callsign, to help everyone know who's on the call. If you are concerned about your phone number being displayed in the meeting, dial \*67 before dialing the phone number. That will block caller ID from showing your phone number.

If you have any questions, please e-mail me and I will try to answer them.

Here is the meeting info:

If you are using a computer, follow the meeting link below and you will be prompted to install and run the Zoom client. If you are using a smartphone or tablet, install the "Zoom Cloud Meetings" app and then use the meeting ID below to join the meeting. If you are dialing in by phone (use a phone with free long distance to avoid incurring charges), dial one of the phone numbers shown and then when prompted, key in the meeting ID followed by the # sign. When asked to enter your participant code, just hit the # again. There are many, many tutorials online if you need help. Remember that you DO NOT need to create an account to use Zoom.

Here is the meeting link:

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

Meeting ID: 996 062 859

Meeting Password for both club and board meetings: 146670

One tap mobile:

+16465588656,,996062859# US (New York)

+13126266799,,996062859# US (Chicago)

Dial by your location:

+1 646 558 8656 US (New York)

+1 312 626 6799 US (Chicago)

+1 301 715 8592 US

+1 346 248 7799 US (Houston)

+1 669 900 9128 US (San Jose)

+1 253 215 8782 US

Meeting ID: 996 062 859

Password: 146670

Thanks,

Ryan AC8UJ, President

### *IDEAS FOR ELECTING BOARD MEMBERS FOR 2021*

**Please e-mail me** with suggestions for how we should handle the club elections this year given that an in-person meeting may still not be feasible in December.

We have reviewed the constitution and bylaws and found nothing indicating a requirement for an anonymous ballot, thus voting during a Zoom meeting could be possible and permissible.

We could also conduct the election by mail, but that will incur costs. Other ideas are welcome.

Thanks!

Ryan AC8UJ

## ARRL HEADLINE NEWS

### Announcements

- International Lighthouse Lightship Weekend ([ILLW](#)) 2020 will take place over the August 22 - 23 weekend, a week later than usual to avoid conflicting with special events that may be on the air to commemorate the 75th anniversary of the cessation of World War II hostilities in the Pacific.

### ARRL BOARD MEETS IN REMOTE ELECTRONIC MEETING 07/24/2020

Due to travel and gathering restrictions in place because of the coronavirus pandemic, the ARRL Board of Directors met on Friday, July 17, 2020 in a remote session, using the Zoom videoconferencing platform. During this session, the Board took the following actions:

- Accepted the final recommendations of the Band Planning Committee. Committee chair and ARRL First Vice President Mike Raisbeck, K1TWF, introduced the motion to adopt the plan. An earlier draft of the plan was introduced at the Board's in-person January meeting. After the January Board meeting, the Committee received and considered hundreds of comments from interested amateurs. The [final band plan](#) can be viewed on the ARRL website.
- Voted, in anticipation of hiring the new Emergency Management Director, to modify the charter of the search committee to study and, if appropriate, prepare a report on, the implementation of a new Standing Committee of the Board to emphasize emergency communications and provide advice to the CEO in these matters. The report is expected to be delivered to the Board by November 24, 2020.
- Created a Standing Order that gives the Programs and Services Committee authority to approve, by vote, proposed rule changes for contests and awards.
- Accepted the financial reports from the Chief Financial Officer and Treasurer on the finances and investment portfolio of the organization.
- Modified the composition of the ARRL Legal Defense and Assistance Committee and the guidelines for what activities will be funded by ARRL.
- Amended ARRL [By-Law](#) #18 to conform with changes made at the January Board meeting regarding the election period for Division elections.
- Approved the recipients of several awards, including the Hiram Percy Maxim Memorial Award.
- Acknowledged the efforts of ARRL Headquarters staff in dealing with and maintaining operations during the pandemic.
- Discussed personnel matters in a Committee of the Whole.

The meeting ended with the Board recessing until a future, as-yet-undetermined date, when the meeting will be concluded. That is expected to be in 4 to 5 weeks, depending on circumstances and the ability to arrange a suitable meeting site. Minutes will be released once the meeting is concluded.

### *Greetings Great Lakes Division ARRL Members*

After much consideration, I have decided not to run for re-election as Vice Director for the Great Lakes Division. It has been a privilege to serve in this capacity. I remain committed to the ARRL and its goals for amateur radio. Thanks to all who have shown me such support and encouragement over these past six years.

Very 73, Tom Delaney W8WTD

*Tom, I am sure I speak for our whole club in thanking you for all your hard work at the ARRL - I know your presence there will be greatly missed! (ed.)*

### **OH-KY-IN Repeaters**

146.670 (-) Clifton 146.625 \*(-) Edgewood 146.925 \*(-) Delhi

443.7625 \*(+5) Clifton [(\*) Indicates Fusion Repeater]

*A CTCSS (PL) tone of 123.0 Hz is required for access to all OH-KY-IN repeaters.*

*All repeaters also transmit a CTCSS (PL) tone of 123.0 Hz*

APRS on 144.390 MHz K8SCH-10 Edgewood WIDEn

Packet 145.010 MHz K8SCH-7 Digipeater (offline)– ***Looking for a new site – ideas?!***

### **TechTalk is back home and doing well!**

***The TechTalk net has moved back home to the 146.670 (-) PL 123 repeater.***

*Bring your questions of technical, procedural, or operational nature to the net and the net participants will do the best they can to get you an answer. If you have any announcements to share be sure to bring those to TechTalk as well.*

*If you don't have a question for the net be sure to check in anyway, you just might have the answer for someone else's question. After any questions or announcements are made, the Amateur Radio Newsline and Amateur News Weekly amateur radio news reports are played.*

*You do not have to be an OH-KY-IN member to join us on TechTalk, everyone is welcome to participate.*

***The TechTalk net is held every Wednesday evening at 9pm.***

*73, ..... Bruce N8BV TechTalk Net Manager*

## ***Tips and Techniques – from electronics-notes.com***

### QRP OPERATING TECHNIQUES

**Know your station:** One of the first requirements is to know your station. Know how it operates so you understand what you are doing and so you can respond quickly and also use it to its best.

**Optimise the antenna:** It goes without saying, that reducing the power level to the accepted QRP levels will make it harder to be heard. However the antenna is the area where some of this handicap can be reduced. Making sure the antenna is operating to its best will ensure that the most is made of the available power.

**CW or phone:** Although it is possible to use both CW (Morse) and Phone (SSB), I have always found CW to be far more effective. It is possible to gain many more contacts using QRP on CW than SSB.

**Call other stations:** Calling other stations rather than calling CQ works, and is one of the major operating approaches that should virtually always be used.

**Listen:** One of the key concepts in successful QRP operating is to listen. By listening it is possible to select the right station to call and then pick the right moment.

**Select the right moment:** One of the key skills for any QRP operator is to select the right moment to call - being quick to start to transmit, but not calling all the time and causing nuisance.

**Understand radio propagation & current conditions:** When operating QRP, it pays to know the different characteristics of the different bands and also under what conditions contacts are best made.

**Use QRP frequencies:** Special QRP frequencies are allowed on the HF bands for QRP operation for both CW and SSB.

**Practice Morse:** In view of the advantages offered by Morse / CW, it is well worth becoming proficient in the use of CW.

**Knowing the procedures:** It helps to know not only the standard operating procedures that need to be used, but also possibly the way in which a particular station or operating works.

[\(Read the full set of notes here\)](#)

## 2020 Committee Chairs and Appointments

Technical Operations Group

ARPSC Representative

Volunteer Examiners

QCEN Representative

Membership

Fundraising

Education

Repeater Control Ops Mgr.

PIO

Librarian

Digital Group

Q-Fiver Editor

Field Day

Historian

Fox Hunters

Equipment Mgr.

WebMaster

Silent Key

Tech Talk Net Mgr.

K8SCH QSL Mgr.

TV/RFI

HamFest

Gary Coffey KB8MYC

Jerry Shipp W1SCR

Brian DeYoung K4BRI

Pat Maley KD8PAT

Nathan Ciufu KA3MTT

Bruce Vanselow N8BV

Michael Niehaus KD8ZLB

Bruce Vanselow N8BV

(Position Open)

Justin Moore KE8COY

Jerry Shipp W1SCR

Robert Gulley K4PKM

Eric Neiheisel N8YC

Dale Vanselow KC8HQS

Dick Arnett WB4SUV

(position open)

George Gardei N3VQW

Bryan Hoffman KC8EGV

Bruce Vanselow N8BV

Bob Frey WA6EZV

Dick Arnett WB4SUV

Gary Coffey KB8MYC

### TechTalk Operators for August 2020

**1<sup>st</sup> Wednesday**

**Bob W8CRO**

**2<sup>nd</sup> Wednesday**

**Mike N8MRS**

**3<sup>rd</sup> Wednesday**

**Dale KC8HQS**

**4<sup>th</sup> Wednesday**

**George N3VQW**



## TECHNICALLY SPEAKING

**Gary Coffey, KB8MYC**, Technical Committee

Our club repeaters are still functioning well. As reported last month, we are still waiting final clearance for the hardline installation. We expect this very soon and hopefully we will be back to full power! In the meantime, all repeaters are fully functional.

When was the last time you had a good QSO on one of the machines? Throw your call out there or maybe even consider answering when someone else does. Many times we will hear a call of someone we do not know and simply ignore it. That's not what amateur radio is about. It's about communicating and meeting new people. Very often these days we hear "there's never anyone on the repeaters". Maybe there is and no one is answering each other. Give it a shot, you may like it!

If you have any issues regarding our repeaters or the use of them, feel free to reach out to myself or anyone on the tech committee, we're here to help 73!

## OH-KY-IN Licensing Classes

*Please Contact Mike KD8ZLB for future registration and class-specific information as it becomes available: [kd8zlb@gmail.com](mailto:kd8zlb@gmail.com)*

- All Spring Classes and Exams have been Cancelled due to virus concerns
- Keep an eye out for updates through the E-mail Reflector
- Fall Classes will be announced later this summer
- 

## FOR SALE BY TED MORRIS NC8V

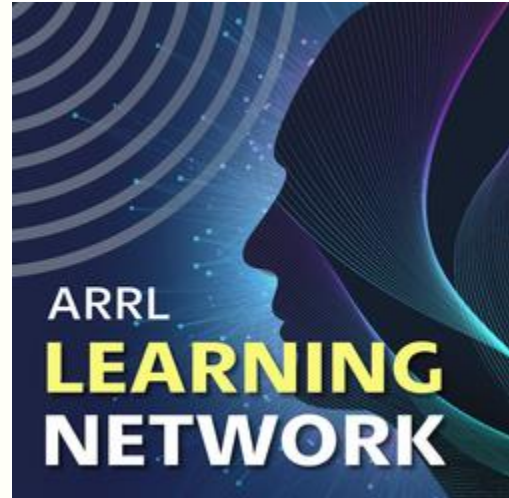
"Weeding 69 year QST collection. Offering 1951-1989, in 1-year lots, no singles. Very few skips; 3 of earliest years are bound. Asking \$3/yr (25c/issue!) + shipping your choice USPS/UPS/cheapest; pickup Cincinnati Eastside ok. Will combine years for better shipping. **\$3 Cost Waived** for legit non-profit recipient! Ted Morris,nc8v@arrl.net, (fife-won-tree) fife-won-niner, fore-ate-seben-seben."



## ARRL Members to Lead New 30-Minute Amateur Radio Webinar Series (with our own Bob Frey, WA6EZV -- way to go Bob!!)

ARRL is launching a new webinar series to help introduce more members to the variety of activities and opportunities that radio amateurs enjoy. The [ARRL Learning Network](#) will offer live presentations by member-volunteers, for members. Like hamfest forums and radio club presentations, the webinars are intended to help participants get more active, involved, and engaged in amateur radio.

Presentations are 30 minutes each, making them easy to fit into a lunch break or as a short evening activity. A 15-minute question-and-answer period follows each presentation for those who can participate longer. The webinars will be hosted initially using *GoToWebinar*. Webinars will be recorded, and some presentations will be available for future viewing by members and ARRL-affiliated radio clubs as part of an ARRL Learning Network library.



A [running list](#) of upcoming live presentations is available. The web page is the place to register to attend each webinar and requires members to log onto the ARRL website. Some presentations:

### Relay Stations and the Art of Traffic Handling

Aaron Hulett, K8AMH, Section Traffic Manager for ARRL North Texas Section

Tuesday, July 28, 2020, 10 AM PDT / 1 PM EDT (1700 UTC)

### Fun with Digital Signal Modes FT4 and FT8

Anthony Luscre, K8ZT

Thursday, July 30, 2020, 12:30 PM PDT / 3:30 PM EDT (1930 UTC)

### HF Wire Antennas

George Cooley, NG7A, ARRL Life Member

Thursday, August 6, 2020, 12:30 PM PDT / 3:30 PM EDT (1930 UTC)

### Introduction to Digital FM Modes

Korey Chandler, Sr., WA5RR

Tuesday, August 11, 2020, 5 PM PDT / 8 PM EDT (0000 UTC on Wednesday, August 12)

### Introduction to Computer Logging

Steven Lott Smith, KG5VK

Thursday, August 13, 2020, 12:30 PM PDT / 3:30 PM EDT (1930 UTC)

### Capture the Magic of 6 Meters

Jim Wilson, K5ND

Tuesday, August 18, 2020, 10 AM PDT / 1 PM EDT (1700 UTC)

### \*\*\* The Sport of Finding Hidden Transmitters on Foot

**Robert Frey, WA6EZV**, ARRL Amateur Radio Direction Finding Committee

Thursday, August 20, 2020, 12:30 PM PDT / 3:30 PM EDT (1930 UTC)

The webinars continue a string of new ARRL benefits introduced in 2020 that has included [On the Air](#) magazine, expanded member access to all ARRL digital [magazines](#), and the new [On the Air](#) and [Eclectic Tech](#) podcasts.

"The ARRL Learning Network puts experienced member-volunteers at the forefront as a regular source of knowledge-sharing in amateur radio," ARRL Lifelong Learning Manager Kris Bickell, K1BIC, said. "We hope members participating in the ARRL Learning Network, including presenters, will find it particularly rewarding to share experiences and learning that will motivate more of our community toward lifelong journeys as radio amateurs."

Members who would like to be considered for future ARRL Learning Network webinars should have experience in delivering presentations, including familiarity with online webinar technology, live video, and screen sharing. Prospective presenters may complete a [Call for Speakers](#) form.

-

(Thanks to Nathan KA3MTT for bringing this to our attention!)

## THE RADIOPHONIC LABORATORY: THE SPHERICAL VORTICES OF DELIA DERBYSHIRE Pt. 2

by Justin Patrick Moore, KE8COY

### Unit Delta Plus, Kaleidophon & White Noise

As Delia's reputation grew, she began work on other projects outside the umbrella of the BBC. She joined forces with her friend and fellow Radiophonic Workshop member Brian Hodgson, along with Peter Zinovieff, the creator and founder of the EMS synthesizer, to establish Unit Delta Plus. The purpose of this organization was to promote and create electronic music. A studio Zinovieff had built in a shed behind his townhouse at 49 Deodar Road in Putney served as their operational headquarters.



Zinovieff had followed the research of Max Mathews and Jean-Claude Risset at Bell Labs. He had also read the David Alan Luce MIT thesis from 1963, "the Physical Correlates of Nonpercussive Musical Instrument Tones." You know, the kind of thing you read on a rainy day. These were some of the influences on his own work. The three were quite the trio.

They participated in a few experimental and electronic music festivals. In 1966 they demonstrated their electronic prowess at The Million Volt Light and Sound Rave. This was the same event where The Beatles had been commissioned to create an avant-garde sound piece. They came up with song *Carnival of Light* in response where it had its only public playing.

Though there were intervening projects, the next major one outside of the BBC was to mark another landmark in the history of electronic music. It all got sparked when Derbyshire and Hodgson met David Vorhaus.

Vorhaus recalls, "I met Brian Hodgson and Delia Derbyshire, who were then in a band called Unit Delta Plus. I was on my way to an orchestral gig when the conductor told me that there was a lecture next door on the subject of electronic music. The lecture was fantastic and we got on like a house on fire, starting the Kaleidophon studio about a week later!"

Vorhaus was a classical musician, trained as a bass player. He also happened to be a physics graduate and electronic engineer. The three were an electrical storm of creative energy. Together they created the Kaleidophon studio at 281-283 Camden High Street, where they made music and sound for a variety of London theatres. They also made library music, contributing many tracks to the Standard Music Library, a firm set up in collaboration with London Weekend Television (ITV) and Bucks Music Group in 1968 to provide the music for hit TV shows. These recordings were done under pseudonyms. Derbyshire's compositions were credited to Li De La Russe, something of an anagram with a reference to her auburn hair to boot.

A number of these songs made it onto the ITV shows *The Tomorrow people* and *Timeslip*, which rivaled *Doctor Who*.

When not working on a commission they worked on their first album as the band *White Noise*, titled *An Electric Storm*.

The album is a masterpiece, spanning genres of giddy electro-pop to the more austere and serious sonorities. It spans a deep emotional gamut and is an excellent and dizzying listen from start to finish. Released on the Island label, it was something of a sleeper album, or what some call a perennial seller. It is one of those albums that didn't do as great when it was first released as it has done over time. Now it is a continual best seller. Considering the difficulties the band had in even getting it onto a label makes their achievement even more remarkable.

Though the name *White Noise* lives on with David Vorhaus, Hodgson and Delia left the project and the studio after the first album.

### MUSIC OF SPHERES AND I.E.E.100

A number of other commissions, recordings and events took place as the last years of the sixties unspooled. She made music for a film by Yoko Ono, contributed to Guy Woolfenden's electronic score for *Macbeth* produced by the Royal Shakespeare Company, and collaborated with Anthony Newley for a demo song called *Moogies Bloogies* that has never seen an official release.

In 1970 Delia worked on an episode for the TV show series *Biography* that detailed the life of Johannes Kepler, the renaissance astronomer who showed that planets orbit the sun in ellipses, not perfect circles. The episode was titled, *I measured the Skies* and was taken from his epitaph which read:

*I measured the skies, now the shadows I measure,  
Sky-bound was the mind, earth-bound the body rests.*

In his book *Harmonices Mundi* from 1619 Kepler explored the relationships between musical harmony and congruence in geometrical forms and physical phenomena and related his third law of planetary motion.

Medieval philosophers had spoken of the music of the spheres as metaphor. Kepler discovered actual physical harmonies in planetary motion, finding harmonic proportions in the differences between the maximum and minimum angular speeds of a planet in its orbit.



A newspaper article by Christine Edge that came out around the time explained, "Kepler had interpreted the sounds made by the planets into scale notes, and Delia subjected them to her own gliding scale of electronic sounds." A few years later she revisited the *Music of the Spheres*,

this time producing a piece for a segment on Kepler in Joseph Bronowski's 1973 TV series *The Ascent of Man*. Her short piece accompanies a simple computer graphic being shown on the screen.

Delia was in her own sphere and orbit, and as her velocity accelerated the people around started to notice its wobble.

In 1971 the International Institute of Electrical Engineers turned 100. The BBC commemorated the anniversary with the Radiophonic Workshop in Concert event on the 19th May. Delia composed the piece I.E.E. 100 for the program, but the tape almost didn't survive. She looked to radio and the history of electrical engineering for inspiration.

She said, "I began by interpreting the actual letters, I.E.E. one hundred, in two different ways. The first one in a morse code version using the morse for I.E.E.100. This I found extremely dull, rhythmically, and so I decided to use the full stops in between the I and the two E's because full stop has a nice sound to it: it goes di-dah di-dah di-dah.

I wanted to have, as well as a rhythmic motive, to have musical motive running throughout the whole piece and so I interpreted the letters again into musical terms. 'I' becomes B, the 'E' remains and 100 I've used in the roman form of C."

Further elements of the piece included many touchstones of the history of telecommunications from, the development of electricity in communication from the earliest telephone to the Americans landing on the moon. She sampled the voice of Mr. Gladstone congratulating Mr. Edison on inventing the phonograph, used the opening and closing down of Savoy Hill, where the BBC had their initial recording studios with the voice of Lord Reith, the first general manager of the BBC, and Neil Armstrong speaking as he stepped onto the surface of the moon.

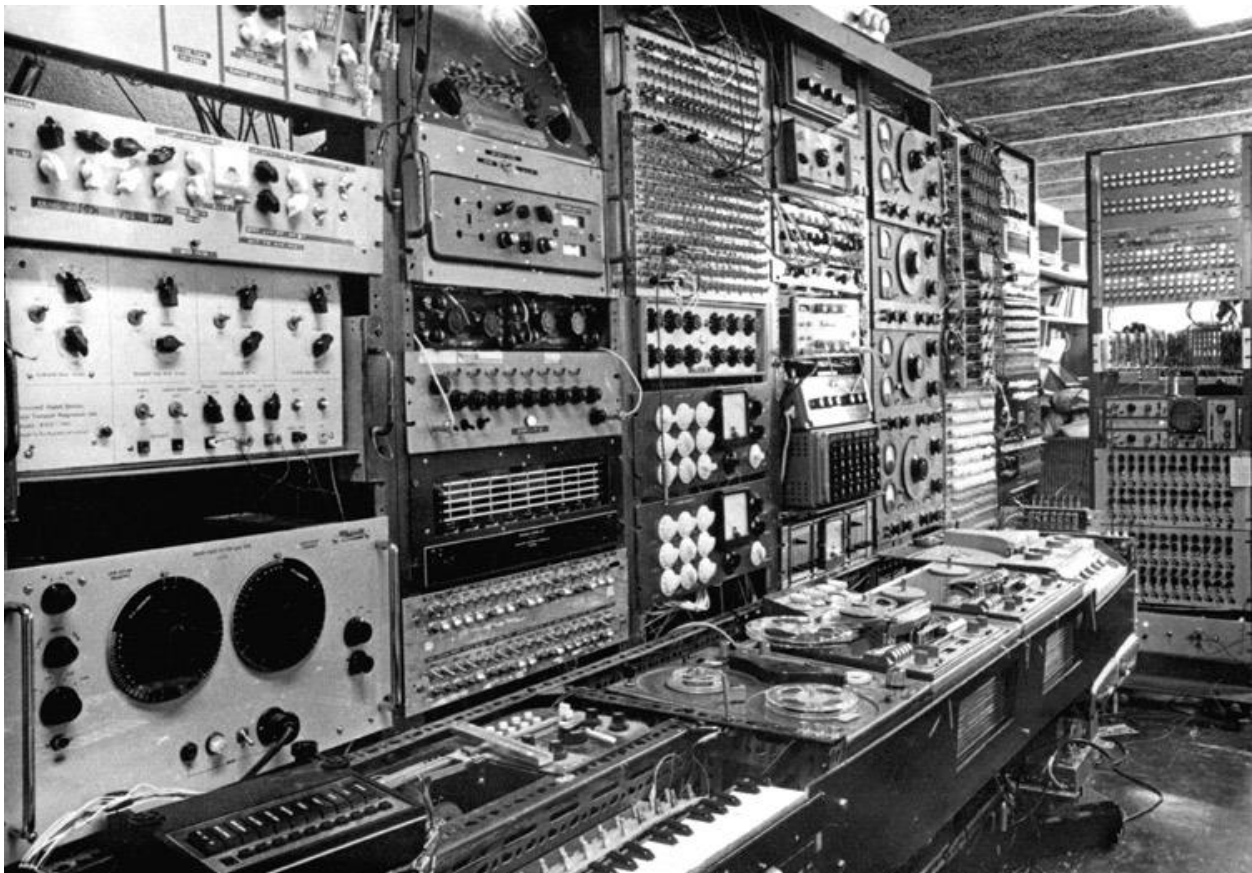
"The powerful punch of Delia's rocket take-off threatened the very fabric of the Festival Hall," Desmond Briscoe wrote.

This was one of the events where Delia's chronic perfectionism began to show itself, having a deleterious effect on her ability to finish work, despite being a professional who had tackled numerous large projects. She was working on the piece up to the last minute the night before the event, making edits, trying to make it live up to the rigorous standards she set for herself. Brian Hodgson was in charge of directing the program, and he was aware that Delia might have a breakdown and do something to the tape, so he called upon one of the Workshops engineers to secretly make a second copy of the final version of the work and to give it to him.

Hodgson's intuition and assessment of the matter was quite correct. He said of the incident, "I said to Richard [the engineer] 'Run another set in Room 12, don't tell Delia you're doing it, and that copy bring to me in the morning, because I have an awful feeling she was going to destroy the tape.' And he did that. And she came in the next morning in tears, around 11 o'clock. And said, 'I've destroyed the tape, what are we going to do?' I don't think she ever forgave me for that."

Two years later she would leave the BBC, fed up. In an interview on Radio Scotland she said, "Something serious happened around '72, '73, '74: the world went out of tune with itself and the BBC went out of tune with itself... I think, probably, when they had an accountant as director general. I didn't like the music business."

She spent a brief time working at Brian Hodgson's Electrophon Studio, before quitting that too. It was hard for her to quit radio though, as it is for many who've been hooked and tried to give it up. She got a gig working as a radio operator. She says of the time, "Crazy, crazy, crazy! I was the best radio operator Laing Pipelines ever had! I answered a job in the paper for a French speaking radio operator. I just had to sleep - everything was out of tune, so I went to the north of Cumbria. It was twelve miles south of the border. I had a lovely house built from stones from Hadrian's Wall. I was in charge of three transmitters in a disused quarry. I did not want to get involved in a big organisation again. I'd fled the BBC and I thought - oh, Laing's... a local family firm! Then I found this huge consortium between Laing's and these two French companies."



By 1975 she'd stopped producing music for public consumption. According to Clive Blackburn, "in private, she never stopped writing music either. She simply refused to compromise her integrity in any way. And ultimately, she couldn't cope. She just burnt herself out. An obsessive need for perfection destroyed her."

Yet in the 1990's she started seeing the electronic music she had championed starting to come into its own. Pete Kember, a member of the psychedelic noise rock band Spacemen 3 sought Delia out and befriended her. Kember had amassed a collection of synthesizers and electronic music gear as part of his musical research and interest. He was embarking on a new project called Spectrum making the kind of music she had been at the forefront of in previous decades.

Delia's life had become chaotic though. The ravages of alcohol abuse were catching up with her body. Just as she started to work on public music again with Peter in 2001, she died of renal failure. A short 55-second collaboration they had made, called Synchrodipidity Machine (Taken from an Unfinished Dream) was released after she had departed and was dedicated to her memory. Kember credited her with "liquid paper sounds generated using fourier synthesis of sound based on photo/pixel info (B2wav - bitmap to sound programme)."

After she died 267 reel-to-reel tapes and a box of a thousand papers were found in her attic. These were entrusted to Mark Ayres of the BBC and in 2007 were given on permanent loan to the University of Manchester. Almost all the tapes were digitized in 2007 by Louis Niebur and David Butler, but none of the music has been published due to copyright complications.

Her life was an unfinished dream, and it is a shame she did not stick around long enough to see the credit that was later bestowed on her for her generous contributions to electronic music.

### **Sources:**

The BBC Radiophonic Workshop: The First 25 Years by Desmond Briscoe

Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop by Louis Niebur, Oxford, 2010

<https://www.bbc.com/historyofthebbc/100-voices/pioneering-women/women-of-the-workshop/delia-derbyshire>

<http://www.delia-derbyshire.org/>

<https://www.bbc.co.uk/programmes/profiles/51LC2shThjnCNR8dd4z2SRQ/delia-derbyshire>

<https://wikidelia.net/>

[https://wikidelia.net/wiki/Morse\\_code\\_musician](https://wikidelia.net/wiki/Morse_code_musician)

# DX & Special Events August 2020 de KA3MTT

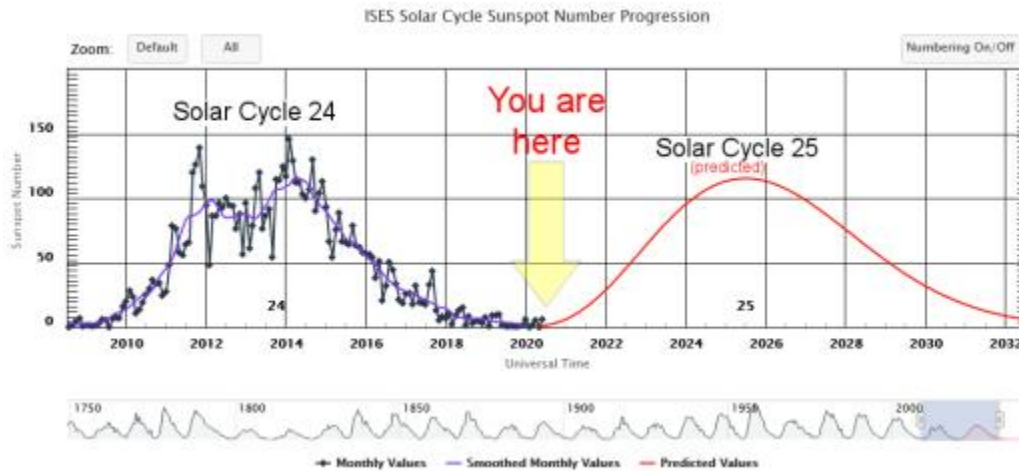
Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>Sheboygan Brat Days Jul 31-Aug 2, 1700Z-0100Z, W9B, Sheboygan, WI. Sheboygan County Amateur Radio Club. 14.240 7.240</p>					<p>YI - Iraq - thru 8-31</p> 	<p>1 W5G : OK Green Corn Rebellion 103rd Anniversary Aug 1-Aug 14, 0000Z-2359Z, W5G, Edmond, OK. KG5JST. 14.074 7.078 7.074</p>
<p>2 P4 - Aruba thru 8-8</p> 	<p>3 National Order of the Arrow Conference Aug 3-Aug 8, 1300Z-2300Z, KZBSA/Various, Various cities. Boy Scouts of America Order of the Arrow. 21.360 14.290 14.065 7.190</p>	<p>4 US Coast Guard 230th Birthday Aug 4-Aug 5, 1400Z-0400Z, K1CG, Port Angeles, WA. CG CW Operators Association. 21.052 14.052 7.052 3.552</p>	5	6	7	<p>8 9G5GS - Ghana Thru 9-15</p> 
9	10	<p>11 Navajo Code Talkers S/E Aug 11-Aug 15, 0000Z-0000Z, N7C, Window Rock, AZ. Herbert Goodluck, N7HG. 18.133 14.265 7.265.</p>	<p>12 2020 IL State Fair Aug 12-Aug 24, 0000Z-0000Z, W9I, Springfield, IL. Sangamon Valley Radio Club. 14.250 7.150</p>	13	14	<p>15 Appalachian Trail Anniversary Aug 15, 1400Z-2100Z, N4F, Franklin, NC. Franklin Amateur Radio Club, Franklin, N.C. 7.265 SSB 14.265 SSB 7.045 CW 14.045</p>
16	17	18	19	20	21	<p>22 V47JA - St Kitts &amp; Nevis thru 9-5</p> 
23	24	25	26	<p>27 XR0YHM - Easter I thru 9-7</p> 	<p>28 15th Anniversary of Hurricanes Katrina &amp; Rita Aug 28-Aug 30, 2300Z-2359Z, K5R</p>	<p>29 Buhl Day 105th Anniversary of Buhl Farm Park Aug 29-Sep 7, 0000Z-2359Z, W3B, Sharon, PA. Mercer County Amateur Radio Club. 14.5.350 14.240 7.185 DSTAR Reflector 63C</p>
30	31					

*Thanks Nathan, for all the hard work!*



## SOLAR WEATHER AND PROPAGATION NEWS

**SOLAR CYCLE UPDATE:** NOAA has released a new [interactive tool](#) to explore the solar cycle. It lets you scroll back through time, comparing sunspot counts now to peaks and valleys of the past. One thing is clear. Solar Minimum is here, and it's one of the deepest in a century.



[Click to explore almost 300 years of sunspot counts](#)

*Solar Minimum is a natural part of the solar cycle. Every ~11 years, the sun transitions from high to low activity and back again. Solar Maximum. Solar Minimum. Repeat.*

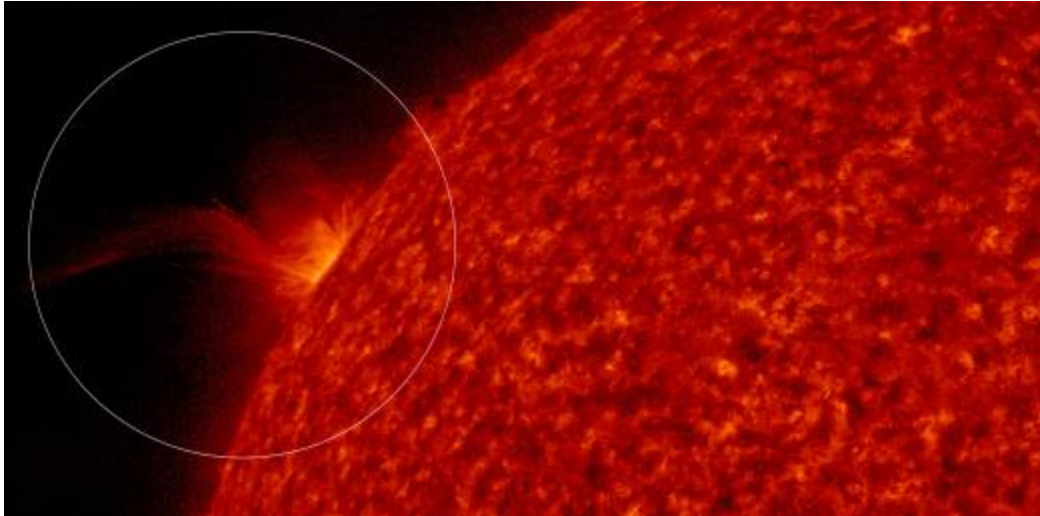
*The cycle was discovered in 1843 by Samuel Heinrich Schwabe, who noticed the pattern after counting sunspots for 17 years. We are now exiting Solar Cycle 24 and entering Solar Cycle 25.*

*During Solar Minimum, the sun is usually blank—that is, without sunspots. The solar disk often looks like a big orange billiard ball*

*In 2019, the sun went 281 days without sunspots, and 2020 is producing spotless suns at about the same rate. To find a year with fewer sunspots, you have to go all the way back to 1913, which had 311 spotless days. This makes 2019-2020 a century-class Solar Minimum; solar flares are rare, geomagnetic storms are almost non-existent, and Earth's upper atmosphere is [cooling](#).*

*Some people worry that the sun could "get stuck" in Solar Minimum, producing a mini-Ice Age caused by low solar activity. There is no evidence this is happening. On the contrary, the next solar cycle (Solar Cycle 25) is showing unmistakable signs of life.*

*On May 29th, the sun unleashed the strongest solar flare in years—an M1-class eruption that just missed Earth. The blast came from an active region belonging to Solar Cycle 25.*



*An M1-class solar flare on May 29, 2020—the strongest flare in three years. Credit: NASA/SDO*

*Observers are also seeing a growing number of Solar Cycle 25 sunspots. So far in 2020, the sun has produced a dozen sunspots. Nine of them (75%) have the magnetic polarity of Solar Cycle 25. This compares to only 17% in 2019 and 0% in 2018. The sun is clearly [tipping](#) from one solar cycle to the next.*

*A NOAA-led panel of experts actually [predicted this behaviour](#). Last year they said that Solar Minimum would hit rock bottom sometime in late 2019-early 2020. Activity would then quicken in 2021-22, ramping up to a new Solar Maximum in 2023-26.*

*So far, so good.*

(Published July 15, 2020 on Spaceweather.com)

## **New Hope For Cycle 25?**

*A group of scientists is challenging the current consensus among solar researchers that Sunspot Cycle 25 will similar to the now-ending Cycle 24, and predicting a cycle "of major proportions."*

*According to the ARRL Letter, the scientists, associated with a variety of institutions in the U.S. and the U.K., including NASA's Goddard Space*

---

*Flight Center, the National Center for Atmospheric Research, and the University of Maryland, say their calculations, using a mathematical technique known as a Hilbert transform to analyze 270 years of monthly sunspot numbers, suggest "that Sunspot Cycle 25 will have a magnitude that rivals the top few since records began."*

*The group's paper, posted online on Cornell University's arxiv.org website, says their best estimate for Cycle 25 is a maximum level of 233 sunspots, predicting "with 95% confidence that the Cycle 25 amplitude will fall between 153 and 305 spots." The consensus prediction of a NOAA/NASA-led panel of experts is for a relatively weak cycle, with a peak between 95 and 130 sunspots.*

*This group is basing its far sunnier prediction on the expectation that 2020 will see an end to both sunspot and magnetic cycles on the sun, as well as evidence from the latitude of early Cycle 25 spots (higher than usual) that suggests a very active solar cycle. However, they conclude, "only time will tell."*

### *DEVELOPING A SUN CLOCK TO PREDICT SOLAR STORMS*

*Some of the same researchers who are predicting a higher-than-average Sunspot Cycle 25 have also developed a "sun clock" to help predict periods of high solar activity, including solar flares and other events that can impact communications here on Earth.*

*The ARRL Letter reports that the group, led by Professor Sandra Chapman of the Centre for Fusion, Space and Astrophysics at the University of Warwick in England, used the Hilbert transform to create a standardized map of a solar cycle.*

*Their research, according to a paper published in Geophysical Research Letters, determined that transitions between quiet and active periods on the sun tend to be quite sharp, and their "sun clock" can provide information on when an active period may "switch on" or off.*

(Thanks to Steve, AA8SW for these [CQ Newsroom](#) Posts!)

*SPACE WEATHER PREDICTION CENTER  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION*

*Solar Cycle Progression Interactive Map:  
(Thanks, Jim WB4CTX)*

<https://www.swpc.noaa.gov/products/solar-cycle-progression>

**GEOMAGNETIC UNREST IS HAPPENING:**

Earth's polar magnetic field is [quivering](#) on July 24th as our planet enters an unsettled stream of solar wind. The stream *\*might\** contain the remains of a slow-moving CME that left the sun on July 19th--or the CME might arrive later.

Either way, high-latitude sky watchers should be alert for [auroras](#) and [STEVE](#).

**THANKS TO ANDREW, KE8LYJ FOR THIS HEADS-UP ON  
POSSIBLE ISS SSTV ACTIVITY!**

From M5AKA - ESA Education has released tutorial videos explaining how to make use of various computers and mobile devices to receive the International Space Station SSTV transmissions on 145.800 MHz FM that are expected for the 45th anniversary of the [Apollo-Soyuz](#) mission.

Apollo-Soyuz was the first international space mission, carried out jointly by the United States and the Soviet Union in mid-July 1975 and ESA Education [say](#) the anniversary will be marked by SSTV transmissions from the ISS.

See the collection of Tutorials videos on how to receive SSTV pictures from the International Space Station for specific operating systems such as Windows 10, Apple iOS & Mac OSX, Android, Raspberry Pi, etc at [https://www.esa.int/ESA\\_Multimedia/Sets/Radio\\_ISS/\(result\\_type\)/videos](https://www.esa.int/ESA_Multimedia/Sets/Radio_ISS/(result_type)/videos)

*YouTube Tutorials Playlist*

<https://www.youtube.com/watch?v=HtC-BPcMruA&list=PLbyvawxScNbt5Mjfty4Ik-Tt6du-6N5jD>

*ESA*

*Education* [https://twitter.com/ESA\\_Education/status/1281140713237946370](https://twitter.com/ESA_Education/status/1281140713237946370)

*Wiki Apollo-Soyuz* <https://en.wikipedia.org/wiki/Apollo%E2%80%93Soyuz>

*Read the Raspberry Pi article Pictures from space via ham radio*

<https://www.raspberrypi.org/magpi/pictures-from-space-via-ham-radio/>

*ISS SSTV info and links* <https://amsat-uk.org/beginners/iss-sstv/>

*What is Amateur Radio?* <http://www.essexham.co.uk/what-is-amateur-radio>

*Free UK amateur radio online training course* <https://www.essexham.co.uk/train/foundation-online/>

## MILFORD HAMFEST CANCELLATION

**From Ron Brooks, AC8MA**

*Hello,*

*We had remained very hopeful our event would be held as planned. Unfortunately the COVID-19 numbers are going in the wrong direction.*

*In the interest of safety, the club has decided to CANCEL this year's event.*

*We plan to return better than ever in 2021. Please bookmark [CincinnatiHamfest.org](http://CincinnatiHamfest.org) for details on our event in 2021.*

*We look forward to seeing everyone for our planned event in 2021. Until then we wish everyone the best. Hopefully band conditions will continue to improve so everyone can make an elusive contact in the log.*

*Thank you,  
Ron*

# Countdown to W4DXCC

Hello from **W4DXCC 16 DX and Contest Convention**. I am sorry to report, we have **Cancelled the 2020 convention**, Please read below.

The W4DXCC team has decided that we will postpone the 2020 W4DXCC 16 convention until 2021.

How this is going to work.

1. If you made hotel reservations, they will be cancelled, and the hotel will contact you directly.
2. We have moved the convention dates to September 24th and 25th, 2021
3. You should make new hotel reservations for 2021
4. Any Online reservations placed will be Refunded.

This is something beyond our control and want to thank everyone for attempting to attend this year. We look forward to seeing each of you next year. Take care and be safe.

Check out the Website and learn about the W4DXCC DX and Contest Convention. Go Here [W4DXCC Convention](#)

Best 73

**Convention leader Dave Anderson, K4SV**

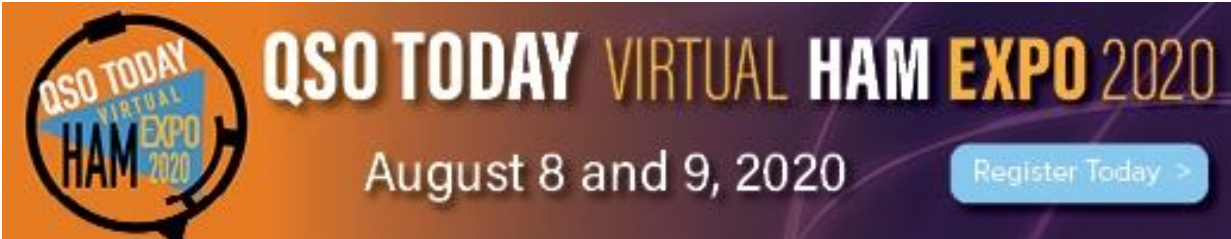
[Dave@w4dxcc.com](mailto:Dave@w4dxcc.com)



*AN EXCELLENT RESOURCE FOR VHF PROPAGATION*

**Make More Miles on VHF**

<https://www.mmmonvhf.de/index.php>



We are reaching out to let you know that despite the closure of many ham radio events, there is a great opportunity to join your fellow hams and us at the first–ev

### **QSO Today Virtual Ham Expo**

on Saturday and Sunday, August 8 – 9, 2020.

**Attendance is free and registration is now open**  
at <https://www.qsotodayhamexpo.com>

**with early bird prize incentives for registering by July 24, 2020.**

Built on a live, virtual platform used by Fortune 500 companies and major universities, this **ARRL–sanctioned** hamfest will let you:

- Learn from a packed line-up of 70+ world renowned ham radio speakers such as **Ward Silver, N0AX**, on Grounding and Bonding; **Glen Johnson, W0GJ**, DXpeditions, and **John Portune, W6NBC**, on building slot antennas for HO/
- See demos of the latest ham radio equipment from the world's top equipment companies. You can ask questions and engage with Exhibitors through video audio, or chat.
- Share ideas and network with your fellow ham radio operators throughout the Expo.

And if you've never been to a Hamfest or Expo, you can participate from the convenience of your home or office without spending a dime on travel!

This platform simulates a full convention experience with an exhibit hall and exhibit booths staffed by live attendants, speaker auditorium, lobby, and lounges.

Go to <https://www.qsotodayhamexpo.com/> to learn more!  
**Don't forget to get registered by July 24th!**

We look forward to having you join us at Expo for an amazing and engaging experience.

(Thanks Nathan, KA3MTT for this info!)

*WHAT IS FM LIGHTNING SCATTER DX? BY BRUCE ATCHISON (VE6XTC)*

Believe it or not, it's possible to receive distant FM stations during a thunder storm. While lightning makes it difficult to hear AM and shortwave broadcasts, its crackles aren't as evident on the 88 MHz to 108 MHz band.

When lightning strikes, it temporarily ionizes the air around it. Radio signals are reflected by the charged gasses and come back down to earth.

From my experience with this kind of DX, the signal became noticeably stronger during lightning strikes. This effect lasted for a second, then the signal level dropped to its former strength.

While a thunderstorm raged overhead on July 7th, I used my CC Skywave SSB radio to check out the FM band. Instead of hearing E-skip as I had hoped, I found that tropo-like conditions reflected stations down to my home. I heard signals from a hundred miles away or further.

As just one example, I found a low-power station with the call letters CKSS on 88.1MHz. They call themselves 88.1 The One. Find out more about this station at the <http://www.881theone.ca/> link. It's located in the town of Stony Plain, Alberta. This station plays country music and airs local news events.

At a guess, I'd say the transmitter is about 120 miles from my QTH in Radway. It normally doesn't come in at all. The signal strength varied too, showing that it wasn't a local.

In my instance of catching CKSS's signal, a form of tropo ducting was also present. Rain can produce reflections of signals but it's much more pronounced in the UHF and microwave bands.

When a thunderstorm is ruining AM and shortwave reception, try DXing the FM band. You'll be surprised at what occasionally comes in.

*For further information on weather-related DX, [check William R. Hepburn's article](#).*

*For a video of FM scatter and/or a sound file of FM Lightning Scatter, [go here](#).*

*(Thanks to [swling.com/blog](http://swling.com/blog) for sharing this post)*



## THE DIGITAL GROUP - ON HIATUS!

*Hang in there, we'll be back . . . someday! Like everything else, this meeting is in limbo until the all-clear is given by city officials to allow in-person meetings. Keep an eye on the E-mail subscriber list for more information! Fortunately, practice makes perfect, so send some messages, or ask for help on the OHKYIN Groups.IO list!*

## AUGUST 2020 BRUNCH BUNCH – PARTY OF ?? TO B SEATED?!

***Due to the current restrictions associated with the coronavirus (COVID-19) the Brunch Bunch is suspended until further notice.  
73, Bruce N8BV***

## ***Dogs may use Earth's magnetic field to take shortcuts***

By [Erik Stokstad](#) ([Sciencemag.org](#))

*(Not Strictly Radio Related!)*



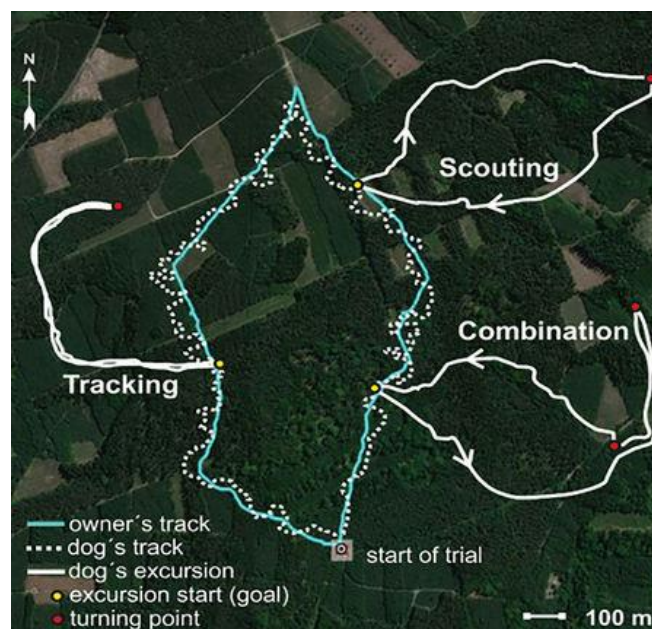
*Dogs are renowned for their world-class noses, but a new study suggests they may have an additional—albeit hidden—sensory talent: a magnetic compass. The sense appears to allow them to use Earth's magnetic field to calculate shortcuts in unfamiliar terrain.*

*The finding is a first in dogs, says Catherine Lohmann, a biologist at the University of North Carolina, Chapel Hill, who studies "magnetoreception" and*

navigation in turtles. She notes that dogs' navigational abilities have been studied much less compared with migratory animals such as birds. "It's an insight into how [dogs] build up their picture of space," adds Richard Holland, a biologist at Bangor University who studies bird navigation.

There were already hints that dogs—like many animals, and maybe even humans—can perceive Earth's magnetic field. In 2013, Hýnek Burda, a sensory ecologist at the Czech University of Life Sciences Prague who has worked on magnetic reception for 3 decades, and colleagues showed dogs tend to orient themselves north-south while urinating or defecating. Because this behavior is involved in marking and recognizing territory, Burda reasoned the alignment helps dogs figure out the location relative to other spots. But stationary alignment isn't the same thing as navigation.

In the new study, Burda's graduate student, Kateřina Benediktová, initially put video cameras and GPS trackers on four dogs and took them on trips into the forest. The dogs would scamper off to chase the scent of an animal for 400 meters on average. The GPS tracks showed two types of behavior during their return trips to their owner (see map, below). In one, dubbed tracking, a dog would retrace its original route, presumably following the same scent. In the other behavior, called scouting, the dog would return along a completely new route, bushwhacking without any backtracking.



Benediktová et al., eLife (2020) 10.7554 ([CC BY](#))

When Benediktová showed the data to Burda, her Ph.D. adviser, he noticed a curious feature: In the middle of a scouting run, the dog would stop and run for about 20 meters along a north-south axis before it began to navigate back. Those

*short runs looked like an alignment along the magnetic field, but Benediktová didn't have enough data to be sure.*

*So Benediktová and Burda scaled up the project, setting loose 27 dogs on several hundred trips over 3 years. Colleagues in the department of game management and wildlife biology, where almost everyone has a hunting dog, pitched in.*

*The researchers took a close look at 223 scouting run cases, in which the dogs roamed an average of 1.1 kilometers on their return. In 170 of these trips, the dogs stopped before they turned back and ran for about 20 meters along a north-south axis. When the animals did this, they tended to get back to the owner via a more direct route than when they didn't, the authors report in eLife. "I'm really quite impressed with the data," Lohmann says.*

*During the walks in the forest, the team tried to avoid giving the dog other navigational clues. Whenever possible, a dog was taken to a part of a forest it had never been to, so that it couldn't rely on familiar landmarks. A dog also couldn't navigate back by looking for its owner, who hid after the dog first headed off to roam. Scent didn't seem to play a role either, because the wind was rarely blowing from the owner toward the dog when it was coming back.*

*Burda thinks the dogs run along a north-south axis to figure out which way they are. "It's the most plausible explanation," he says. Lohmann says the implication is that dogs can remember their previous heading and use the reference to the magnetic compass to figure out the most direct route home. "I'm intrigued," she says.*

*Adam Miklósi, who specializes in dog behavior at Eötvös Loránd University, says designing magnetoreception experiments is complicated because it is hard to make an animal rely only on that sense. "The problem is that in order to 100% prove the magnetic sense, or any sense, you have to exclude all the others."*

*Burda and Benediktová are taking a different approach. In one new experiment, they will put magnets on the dogs' collars to disturb the local magnetic field and see whether it hinders their ability to navigate. The idea harkens back to a controversial experiment published in 1980 in Science, in which magnets stuck in blindfolds seemed to disrupt an intuitive magnetic homing sense in humans.*

*Miklósi says it would not be surprising to find that dogs can use the magnetic field to navigate—it seems to be an ancient ability—and it might be present in any mammal that traverses large territories. Lohmann agrees. "You would expect this to be something that a lot of animals can do to return home after hunting," she says, "and it's neat to see it in a dog."*

**RADIO OPERATORS ASSIST AT COVID-19 TEST SITES**

Justin Patrick Moore, KE8COY

Cincinnati, OH – Area communications operators lend support at Covid-19 testing sites. Ham radio operators from the Hamilton County Amateur Radio Emergency Service (ARES) are working with Hamilton County Public Health (HCPH) to monitor the weather at outdoor testing sites. They are also there to provide an extra communications link for the people on the ground back to HCPH, where there is a dedicated ham radio station.

ARES members who are trained SkyWARN Spotters are monitoring the local weather for potential impacts that could affect the safety of the participants at the COVID-19 testing sites. These Hams will be on site during the next several weeks, sharing weather information with HCPH administration. This allows the admin team to focus on the operations of the site while knowing that someone is keeping a watchful eye on the weather conditions, ready to relay and alert as necessary.

One such incident occurred on Tuesday, June 30. At approximately 3:30 pm HCPH administration and local officials decided to pause testing due to lightning detected in the area. Based on additional information provided by Ham operators, health officials continued the pause until the local area was clear of threatening weather. This ‘real time’ weather information is critical and adds an extra layer of support and safety to workers and visitors. All in all ARES is projecting to put in hundreds of volunteer hours assisting the HCPH during this pandemic crisis.

In anticipation of the further use of their volunteer services ARES has begun conducting exercises in the event they are needed for communications should a vaccine for Covid-19 be developed. In this potential situation radio operators would be located at the Public Health PODs (Point of Dispense) to again serve as a backup link between the staff at the site and a communicator at the Public Health station. To prepare they have started by running a tabletop exercise over Zoom to assess their equipment needs and discuss any challenges that may be involved for radio communication between sites. This is to be followed by actual testing of radio capabilities between sites in the field to ensure they will be ready to serve their community in time of need. Justin Patrick Moore, PIO HamCo ARES

(This PIO Notice was picked up by the **Cincinnati Enquirer Online Edition** – great job, Justin! ed.)

**And in Related News**, Justin's ARES piece for last year's SET Exercise was published in the July 2020 QST, congrats, Justin!!

**SET Shows Anderson, Ohio, is Prepared***Justin Patrick Moore, KE8COY*

Hamilton County (Ohio) ARES members participated in a Simulated Emergency Test of communications across Anderson Township on Saturday, October 5<sup>th</sup>.

The Anderson Emergency Operations Center (EOC) was ground zero for county radio amateurs during this exercise, and Marty Newhall, KE8CEI, worked with the Anderson Fire Department to establish an amateur radio station at the EOC as an auxiliary and backup communications system. Groundwork for this station was established by former Fire Department Chief Mark Ober, with continued support from current Chief Richard Martin and Assistant Chief Bob Heriinger.

The station was capable of city, region, state, and nationwide communication. All radios and antennas were tested. Using portable and mobile radio equipment, other ARES members fanned out to several different locations throughout Anderson and surrounding areas to exchange messages from their field locations to the EOC and pinpoint locations where radio signals might have trouble getting through.

### *IN THE NEWS FROM QRZ.COM*

#### **Radio amateurs help air-ambulance**

Peru's Radio Club Peruano (RCP) reports that Guillermo OA4DTU and the Peruvian Relief Chain on 7.100 MHz assisted an aircraft enroute to Easter Island after its satellite communication equipment failed

A translation reads:

On Thursday, July 9 an aircraft departing Santiago de Chile carrying out an air ambulance service to pick up a patient on Easter Island, lost communication more than 1,000 nautical miles from the continent with its control tower, so the pilot turned to the frequency of the Peruvian Relief Chain on 7100 kHz.

While the exercise of the Peruvian Relief Chain had ended a few minutes before, colleagues Guillermo OA4DTU, who was operating the Chain, and Giancarlo OA4DSN, were left in wheel, so the aircraft pilot was able to contact Guillermo. In this way communication was established with the aircraft, who detailed its delicate situation, given an apparent failure in its satellite communication equipment, so requested support to communicate via telephone with Ocean Air Control, service of the Directorate General of Aeronautics of Chile that watches over that 32 million square kilometres airspace in the Pacific Ocean off the coast of Chile.

This is how Oceanic Control takes the call of Guillermo, pointing out his surprise and relief for communication, since they were indeed in an alert situation due to the loss of contact with the aircraft and that the remote team HF of the Island Tower Easter was inoperative at the time, so communication was not possible for them.

About 10 phone calls were made with this service, pointing out the different positions and schedules of its route, plus some indications for pilots and air control respectively.

In this way communication was established with the aircraft, who detailed its delicate situation, given an apparent failure in its satellite communication equipment, so requested support to communicate via telephone with Ocean Air Control, service of the Directorate General of Aeronautics of Chile that watches over that 32 million square kilometres airspace in the Pacific Ocean off the coast of Chile.

This is how Oceanic Control takes the call of Guillermo, pointing out his surprise and relief for communication, since they were indeed in an alert situation due to the loss of contact with the aircraft and that the remote team HF of the Island Tower Easter was inoperative at the time, so communication was not possible for them.

About 10 phone calls were made with this service, pointing out the different positions and schedules of its route, plus some indications for pilots and air control respectively. Other OA colleagues were attentive and ready to take action if necessary, accompanying Guillermo in contact and the aircraft until he knew it would reach its destination.

At approximately 23:30 (04:30 GMT), the aircraft reports that it has managed to make contact via VHF with the Easter Island control tower, confirming the descent and landing instructions on the island!!!

The joy and satisfaction of all who were in frequency was absolute even more since minutes after losing contact by HF the pilot communicated with Guillermo sending his greetings, thanks and a photograph of the aircraft perched on the Mataverí track, in where the minute it was raining and waiting for a patient to be moved to Santiago de Chile.

Finally, the accompaniment to the aircraft lasted nearly 3 hours, which was permanent from the first contact until its arrival at destination, with the thanks also from the Ocean Air Control Service to Guillermo and the Peruvian Socorro Chain. This action reaffirms the role played by Radio amateurs in risk or emergency situations.

Congratulations Guillermo! OA4O - RADIO CLUB PERUANO

■ Source RCP Facebook post at

[https://www.facebook.com/permalink.php?story\\_fbid=4314923508548316&id=108632835844092](https://www.facebook.com/permalink.php?story_fbid=4314923508548316&id=108632835844092)

Cadena Peruana de Socorro (Peruvian Relief Chain)

<https://www.facebook.com/AsocCPS>

Radio Club Peruano <https://tinyurl.com/Peru-RCP>

<http://www.southgatearc.org/news/2020/july/radio-amateurs-help-air-ambulance.htm>

---

### *A Good Series of Questions and Useful Responses*

This is a repost of several emails back and forth on the OHKYIN Groups.io list concerning upgrading one's Technician License to General.

Hello OHKYIN Group:

I am a recent Technician who wants to upgrade to General.

1. You Generals and Extras, what are the best resources and ways to upgrade?
2. Is it best to take classes or study on your own?
3. Would you recommend staying at Technician for a period of time or until certain things are achieved?

Thanks for your help, suggestions, corrections and support,  
Sumner "Sonny" Saeks KE8OSC [based in Blue Ash, Ohio]

#### **Responses:**

I recommend that you upgrade as soon as possible because what you have already learned is still fresh and applicable for the next exam and you can build on what you already learned.

Here is my pro tip for General studying. There is a very nice app in the app store for iPhone called "HRE-GENERAL" by Roy Watson N1ZTL. Has the entire question pool and is a perfect simulation for the General Exam. I think it is great and you can study from your phone at any time. 73 de KB9SOG

Sonny,

I second what BJ, KB9SOG, has said: upgrade as soon as you are able.

In some ways, I have seen the amateur radio license as a learner's permit. All of us are continuously learning. So, my suggestion is to upgrade, get on HF, enjoy, and keep learning. Have fun!

Bob, W8CRO

Hi Sonny.

With all the social distancing going on, one good option (if you don't mind learning online) is HamTestOnline @ hamtestonline.com

I used their service to upgrade to Extra years ago and it really helped me.

Also, I would upgrade when you are ready. Some are fine with a Technician or General class so don't feel like you have to. I was a General for years and decided to move up to Extra for the extra privileges. 73 and good luck! Dale KC8HQS

I upgraded to General a few months after getting my Technician license. I agree with the others that it is best to upgrade from Technician quickly while you are still in the ham radio learning "groove." I used a combination of in-person classes sponsored by OH-KY-IN and HAMTESTONLINE an internet resource. With the OH-KY-IN training, I learned the theory

associated with the General license, and with HAMTESTONLINE I got practice with the actual test questions. With the Covid 19 restrictions it's not certain when local, in-person training will be available so you might wish to look for online training that combines both General Theory and practice with the test questions.

Mike H. KD8ZDC

---

Hi Sonny,

Well, there are multiple answers to each of your questions, so I'll toss in a few ideas, as hopefully will others.

Best resources: that depends on how you best learn - visually, reading, hands-on, etc. Traditionally many folks have used the resources from the ARRL or from Gordon West. These are study manuals and/or question answer explanations.

On our OHKYIN website we have the whole General question pool uploaded with answers, along with hints/explanations for some of the questions, along with advice for how to take the test, etc. This was prepared by one of our members, Steve, AA8SW.

The link is here: <http://ohkyin.org/wp/club-activities/the-exam-corner/>

There are also numerous YouTube videos, podcasts etc. available online which may help, again, depending on how you best learn.

This rolls into your second question - it depends on how you like to learn. Classes are great (Steve and I teach the General Class typically twice a year when there is no virus present!) because you get to ask questions, hear examples of practical applications, etc. Also having several others in the class helps because each person has questions others may not have thought to ask. But some people do better with self-study - that depends on you. The General class is usually 5 weeks, so that takes some time commitment (one day a week for 5 weeks), and people taking the class are encouraged\expected to keep up with the reading material and to take practice exams on their own to reinforce the material presented.

Your third question is perhaps the most interesting. There are advantages to both paths. Staying a Tech for a time can be useful IF your goal is to explore and learn as much as you can at the Tech level - there is much you can do as a Tech, like chase satellites, explore emergency operations, amateur radio direction finding. learn good repeater etiquette, overcome microphone shyness, and more. Learning about basic antennas for VHF/UHF can be invaluable for when you become a General - principles learned here can be learned with inexpensive or easy to build antennas, saving you time, money and frustration at the HF level. As 10 meters is opening up just a bit, you may have the opportunity to explore a little of HF operation in the 10-meter portion of the band available to Techs.

And of course, while you are exploring all the fun things you can do as a Tech, you can monitor HF bands for nets, conversations, and contests to learn how these function in preparation for becoming a licensed General Class operator.



On the flip side, some people prefer to move through the various levels of licensing to keep the momentum going. I took my Tech and General within a few weeks of each other, and within a few months (after a little mental break!) took the Amateur Extra. I wanted to maintain the momentum of study while the previous two levels were relatively fresh in my head. Also my main interest in getting into amateur radio was to talk around the world with other hams, hence the quick move to the General. As for going for the Extra license, I quickly realized as a General I didn't like have areas of the bands where I was not allowed <grin>!

The bottom line is that Amateur Radio can grow as quickly or as slowly as you need - the main thing is to realize you will NEVER exhaust all the possibilities with Amateur Radio. If you decide to stay a Tech and explore it more fully, there is great benefit to that approach as I have noted. If you decide to go on with the General right away, that does not mean you cannot explore all the privileges afforded the Tech while being a General! And the same for the Amateur Extra.

My suggestion is to take some time and evaluate where you want to go in the hobby, how you learn best (that may combine several methods, of course), and determine which direction will help you maintain the most interest in the hobby. Please just don't be one of those folks who quickly sample a little bit of everything, racing through a checklist of activities, and then determine you are bored with the hobby. Amateur Radio has become a life-long hobby for thousands upon thousands of folks because there is always something new to learn, and always the opportunity to go back and further explore things you did in the past.

Hope these thoughts are of some usefulness to you, and best of luck whichever way you decide to move forward! Cheers, Robert K4PKM

---

## ***TOKYO HAMFAIR CANCELLED DUE TO COVID-19 CONCERNS***

STEPHEN/ANCHOR: We begin this week with the latest and most likely the biggest cancellation of an amateur radio event this year. The Tokyo Hamfair, scheduled to open on the 31st of October, has been cancelled by the Japan Amateur Radio League which cited precautions due to the coronavirus pandemic.

Crowds at this major international event have run as high in some years as 60,000 attendees from around the world, topping Friedrichshafen in Germany and Dayton Hamvention in Ohio. The Tokyo Ham Fair has been an annual event since its first staging in 1977.

Here's looking forward to Tokyo Hamfair 2021. *(reported by Amateur Newsline Report)*

***PROPOSED BYLAWS CHANGES/AMENDMENTS***

At a future meeting of the OH-KY-IN membership, we will be holding a vote to approve replacing both our existing Constitution and our existing Bylaws with the following proposed single document (henceforth to be known as our Bylaws).

We have learned that Ohio corporations should only have Articles of Incorporation and Bylaws, thus we are retiring our constitution to bring us in line with common practice and merging the two documents into a single document while incorporating some updates at the same time.

There are no changes being proposed to our Articles of Incorporation at this time. They remain as filed and previously amended with the state of Ohio. The current Constitution and Bylaws are available on the club website under "About OH-KY-IN" and then "Constitution and By-laws" if you wish to compare the old with the proposed.

**OH-KY-IN AMATEUR RADIO SOCIETY, INC. (the “Society”)  
CODE OF REGULATIONS (also referred to as BYLAWS)**

As amended at the \_\_\_\_\_, 2020 meeting of members.

**ARTICLE I. MEMBERSHIP**

- A. Any person interested in Amateur Radio and who is in sympathy with the purposes of this Society may become a member upon completing an application for membership and payment of any applicable dues; however, an application for membership may be rejected, or the membership of any individual may be terminated, by the Board of Directors if in the opinion of the Board the prospective or continued membership of that individual is not in the best interests of the Society due to prior or continuing violation of F.C.C. rules, disruptive behavior, or other reasonable cause as determined by the Board, whose decisions shall be final.

B. The dues (which may vary depending on categories set by the Board) shall be determined by the Board of Directors from time to time, and shall be payable to the Treasurer during the month of January or at such other time as the Board of Directors may approve. Dues unpaid three months after the due date shall result in automatic termination of membership.

C. Any members qualifying for free membership under categories that may be established by the Board, shall have no voting rights.

**ARTICLE II. BOARD OF DIRECTORS**

A. Except where authority is otherwise designated under the law, the Articles of Incorporation or these Bylaws, authority over the affairs of this Society shall be exercised by or under the direction of the Board of Directors, which shall consist of three elected Directors serving staggered three-year terms, with one Director being elected each year; together with the four elected officers specified below and the immediate Past President of the Society who serve ex officio with vote. However, all members of the Board of Directors must be current members of the Society. The annual election of one Director shall be conducted along with the election of officers as provided below.

B. If any Board member dies, resigns, is removed, or becomes unable to serve, the vacancy for the unexpired term shall be filled by appointment of the remaining Board of Directors, even if the number remaining is less than otherwise required for a quorum.

C. Any Board member may be removed from office by majority vote of those members present at a regular or special meeting of the members, provided that notice of the proposed action has been given to the members as provided in Article V.D.

D. The Board shall schedule regular meetings to occur at least bi-monthly. The President, or in the absence of the President the Vice-President, may cancel a meeting if there is no business to conduct. Special meetings may be called by the President or by any three Board members with notice to the Board as provided in Article II.E. Four Board members shall form a quorum for any regular or special meeting of the Board of Directors, and the majority vote of Board members present shall be the action of the Board unless otherwise required by law or these Bylaws. Board members may not vote by proxy but may attend a meeting by telephone conference call, video call or other electronic means which allow all participating Board members to hear each other. The Board may also act by unanimous written consent, and email or other electronic communications may be accepted for that purpose.

E. Notice of regular or special Board meetings (other than regularly-scheduled meetings as established at the beginning of each year) shall be sent to each Board member not less than five days prior to such meeting either (1) by first class mail to his or her residence or place of business as listed in the Society's records or (2) by electronic mail to his or her e-mail address, if one has been furnished for that purpose to the Society. Such notice shall set forth the time and place of such meeting and shall be valid if sent as stated in the preceding sentence, whether or not actually received. Business to be transacted at any regular meeting of the Board shall not be limited to those matters set forth in the notice of meeting. Notice of any meeting of the Board may be waived by the execution of a written waiver of such notice, either before or after the holding of such meeting by any Board member. The attendance of any Board member at any meeting without protest at the commencement of the meeting shall be deemed to be a waiver of notice of the meeting.

F. Board meetings are open to members, so the date and location of Board meetings (other than confidential meetings as provided below) must be distributed to the membership in advance of each meeting. However, the Board may conduct a confidential special meeting or executive session at a regular meeting to discuss sensitive topics such as actual or potential litigation, contract negotiations, and other legal or personnel matters.

G. Board members (including current and former officers serving ex-officio) shall not receive any compensation for their service but shall be entitled to reimbursement of authorized expenditures made on behalf of the Society. The Society may purchase directors liability insurance or other reasonable and customary coverages for the benefit of the Directors.

### **ARTICLE III. OFFICERS AND COMMITTEES**

A. The elective officers of this Society shall be a President, Vice President, Treasurer, and Secretary. These officers shall be elected annually at the December meeting by majority vote of the members present and voting. All of the elected officers must be Amateur Radio operators licensed by the Federal Communications Commission.

B. Elected officers of the Society shall serve one year terms (calendar year) and until their successors are elected and take office.

C. The President shall appoint a three-member Nominating Committee and the Nominating Committee shall submit, at the November meeting, names of proposed candidates for each of the four officers and one elected Director. Additional nominations may be made by members from the floor at this meeting.

D. Election of officers from the candidates identified at the November meeting (as the list of candidates may be supplemented by write-in vote at the December meeting) shall take place at the December meeting and shall be by majority vote of the members present.

E. The Board may appoint one or more Assistant Vice-Presidents, Assistant Secretaries or Assistant Treasurers or such other officers, having such duties and responsibilities as the Board shall deem advisable. Such non-elected officers need not be Board members and shall serve at the pleasure of the Board.

F. The President may establish or discontinue committees from time to time in his or her discretion, except as specified in this subsection. A financial review committee of three members shall be appointed by the President at the January meeting each year. The records of deposits and expenditures from the Society's bank accounts shall be reviewed, and a report submitted at the March general membership meeting. A three-person property review committee shall be appointed by the President in January of even-numbered years to review the physical property owned by the Society and present a report no later than the November general membership meeting of the same year. It is recognized that the members of these committees are not professional auditors and they shall not be personally liable for any failure to detect any irregularity that may have occurred.

G. The President shall appoint chairpersons for all committees. Terms for the chairpersons of all committees shall be one year and shall run concurrently with the elected officers, but the President may remove and replace any such chairperson at any time.

### **ARTICLE IV. DUTIES OF OFFICERS**

A. The President shall preside at all meetings of the Society, shall be a member ex-officio of all committees, and shall have all other powers and perform all other duties usually pertaining to the office. The President shall make or cause to be made reports concerning the activities of the

Society to the members and to any other relevant recipients such as the American Radio Relay League.

B. The Vice President shall preside in the absence of the President and shall act as aide to the President.

C. The Secretary shall keep an accurate record of all meetings of the Society, and keep a roster of members. The Secretary shall conduct the official correspondence of the Society and be responsible for acquiring information, and maintaining records.

D. The Treasurer shall be custodian of all the funds of the Society, and shall be responsible for the proper deposit of such funds in an FDIC-insured bank or other investment authorized by the Board. The Treasurer shall keep an accurate itemized account of all receipts and expenditures and pay bills as authorized by the Board of Directors. The Treasurer shall render a report at each meeting of the Society. The Treasurer shall be responsible for filing all necessary reports to the State of Ohio and the United States Internal Revenue Service. Such reports shall be filed at such time as stipulated by the various agencies of the above so as not to incur any penalties for late filing.

E. Officers shall not receive any compensation for their service but shall be entitled to reimbursement of authorized expenditures made on behalf of the Society. The Society may purchase officers liability insurance or other reasonable and customary coverages for the benefit of the officers.

F. Expenditures of more than \$1,000 must be approved by a majority of the membership present and voting at a regular or special membership meeting prior to committing to the expenditure.

#### **ARTICLE V. MEMBERSHIP MEETINGS**

A. Regular monthly or bi-monthly meetings of the membership shall be held from January through December. The date of regular meetings for the following calendar year shall be selected by the Board of Directors at its November meeting and published in the Society's official publication, but such scheduled meeting dates may be changed subsequently by the Board upon giving further notice to the members as provided in Article V.D. The meetings of this Society shall be open to interested persons, but the privilege of making motions, debating or voting shall be limited to dues-paid members of the Society, and the presiding officer may exclude any person who is disruptive or whose presence is otherwise determined to be not in the best interests of the Society. Business to be transacted at any regular meeting of the membership shall not be limited to those matters set forth in the notice of meeting, but shall not include amendment of these Bylaws or removal of any Board member unless the proposed actions were set forth in the notice. Members may vote by proxy if a proper written proxy is provided to the Secretary at the meeting.

B. A special membership meeting may be called by the President, or by the Vice President in the President's absence, at a reasonable time and place, with notice as provided in Article V.D. The notice must state the business to be conducted at the special meeting, and only that business may be conducted at that special meeting.

C. 20% of the Society's membership may call a special meeting of the membership at a reasonable time and place. The petition calling such a meeting shall be presented to the

President, or to the Vice-President in the President's absence. The petition must state the business to be conducted at the special meeting, and only that business may be conducted at that special meeting. Upon receipt of any such proper petition, notice of the special meeting must be given by the Society to the membership as provided in Article V.D.

D. Notice of regular meetings of members is deemed given when published in the Society's official publication at least ten days prior to such meeting (and may be published up to a year in advance). Notice of a special meeting of members shall be deemed given if it is announced at a regular meeting of the members at least ten days prior to such special meeting, is published in the Society's official publication, or is sent by electronic mail to all members who have furnished such an address to the Society (through subscription to the Society's public email reflector or otherwise), in each case at least ten days prior to such special meeting. Such notice of a special meeting shall set forth the time and place of such meeting and shall be valid if given as stated in the preceding sentence, whether or not actually received. The attendance of any member at any meeting without protest at the commencement of the meeting shall be deemed to be a waiver of notice of the meeting.

E. The rules in ROBERT'S RULES OF ORDER, REVISED, shall govern the Society's meetings in all cases to which they are applicable unless inconsistent with other provisions of these Bylaws.

#### **ARTICLE VI. OFFICIAL PUBLICATION**

A. The official publication of the Society will be called the Q-FIVER, unless a different name is approved by the Board of Directors. It shall be published monthly (with any exceptions approved by the Board of Directors) and distributed to all members in good standing who have furnished an electronic mail address for that purpose.

The Editor shall be appointed by the President. It is the responsibility of the Editor to maintain the editorial policy of the publication consistent with the policies and practices of the Society.

#### **ARTICLE VII. AMENDMENTS**

A. These Bylaws may be amended at any regular or special meeting by a two-thirds (2/3) vote of the members present and voting.

B. No Bylaw amendment shall be put to a vote at a membership meeting unless notice of the meeting has been given as provided in Article V.D together with the text of the proposed changes in these Bylaws.

**Volunteer Monitor (VM)** program coordinator Riley Hollingsworth, K4ZDH, reported that monitoring hours increased significantly from the first quarter to the second quarter of the year. VMs logged first-quarter HF hours at 3,533, and VHF/UHF/Other hours at 2,258. They logged second-quarter HF hours at 5,930, and VHF/UHF/Other at 7,478.

*JULY 2020 ONLINE OFFICIAL MEETING*

# OH-KY-IN General Meeting Minutes

*July 7, 2020*

The meeting was called to order at 7:32 PM by Ryan AC8UJ with the Pledge of Allegiance, which was recited by a guest reciter, John Wayne!

Guests: none

New Licenses or Upgrades: none

Attendance: 26

Health and Welfare:

- Mike Niehaus KD8ZLB got a new knee today!
- John Phelps N8JTP was made a Kentucky Colonel by Kentucky Governor Andy Beshear!

Presentation: Nathan KA3MTT presented on club membership and the transition of the club's email reflector to groups.io

- Contact him with any membership questions - ka3mtt at yahoo.com or ka3mtt at arrl.net
- Member spotlight currently on life members, soon regular members
- OHKYIN vs OHKYINPublic, paid versus non-paid
- Membership roster in OHKYIN - Excel spreadsheet & PDF
- Explore and play around, lots of features

Brag Sessions:

- Cesi KDOOB finally had a clean sweep (plus the WM3PEN bonus station) of the 13 Colonies annual event after five previous attempts, all at 5 watts QRP phone

Prior Meeting Minutes: None submitted by secretary

- Ryan's minutes as published in the Q-Fiver were accepted by the board as the official minutes for June 2020
- There were no corrections
- Club voted to accept the minutes as they stood

Membership: Nathan reports 153 members

Treasurer: Brian K4BRI reported

- June had receipt of dues, a donation and Kroger rewards
- June also had some expenditures including mule tape and rope, hardline and hardware for the 67 repeater

- Reported and accepted for audit.

Silent Keys: Not present, nothing reported

Tech Operations: Not present, Bruce N8BV reported

- 67's controller was damaged and has the UHF controller currently, but no realtime clock, will swap out clock board from the damaged controller
- Gary KB8MYC is working on fixing the damaged controller
- Ryan also reported that the new hardline and hardware for 67 is at the site, but the installation is waiting for WLWT to finish painting the tower

Classes/Exams: Mike KD8ZLB reported

- Nothing at this time as we can't get into the Red Cross building
- New extra manual has been released

Fox Hunts and ARDF: Brian reported

- Nothing held or scheduled at this time due to conflicts with orienteering

Library: Not present

Nets: Bruce reported

- Back on 67! 25 to 30 check-ins with lots of questions and answers. Keep it up!

WinLink: Not present, reach out to Ed K8EAF with questions

Digital Group: Jerry W1SCR reported

- Canceled until further notice
- St. Bernard has not started taking reservations for halls for 2021, so probably no physical meetings there for the remainder of 2020

Website: Rocky KE8DZS reported

- Nothing new, but perhaps some new groups stuff

QCEN: Pat KD8PAT reported

- Supposed to be picnic month, but currently nothing is known
- Perhaps check into the QCEN net after this meeting for an updated

ARES: Not present

- Ryan reported: stuff from COVID testing sites



- Mike reported: asked to monitor the weather for COVID testing sites due to being outdoors/under tents; received glowing reviews from the health department

Brunch Bunch: Bruce reported still on hold

Events: Ryan reported

- Milford Hamfest seems to still be on for August 29th

Old Business

- By-laws updates are still on hold, waiting until we can all be together to vote
- Field Day: it happened
  - Bruce - so many people, massive pileups
- The club scoring page was fun and acted as both a motivator and a demotivator!

New Business

- Christmas party
  - Can we have an in-person meeting?
  - How about elections?
  - Three questions:
    - Can we?
    - If so, how are we going to pay?
    - If not, how are we going to have club elections? Need to be vetted against the by-laws.
  - Usually about \$400 for prizes & \$100 for pizza, all from split-the-pot
  - Also consider what to do with the \$157.50 currently in the fund
  - Think about it. Send thoughts and opinions to Ryan.
- Cystic Fibrosis Ride
  - Ryan: Silence to date; clinging on to a small shred of hope to have the event, but probably will be canceled

Upcoming Programs:

- August: Scott Yonally N8SY will report on the state of the Ohio Section
- September: Joe Carcia NJ1Q, station manager for W1AW will give a virtual tour of W1AW
- October: Cesi KD8OOB will present a demo on the newest version of MMSSTV, Yoniq
- November: Traditionally show-and-tell - can we still do it?
- December: Christmas Party (?)

The meeting was adjourned at 8:45 PM

Respectfully submitted, Cesi DiBenedetto KD8OOB, Vice President

---

### *ON THE TRAIL OF 'PARASITE ANTENNAS'*

*STEPHEN/ANCHOR: If you think antenna or tower work can be dangerous sometimes, consider a different kind of risk some tower workers in Mexico have been taking, according to one news agency's report. Kent Peterson KC0DGY has the details.*

*KENT: They're called "parasite antennas" and they're part of a far-reaching network in Mexico that authorities say uses cellular sites and other towers to support illegal drug trafficking. According to a recent report by Reuters, drug cartels often install their antennas on towers amid those of legitimate cellular carriers, making use of the space to enable drug traffickers' two-way radio communications.*

*The Reuters report noted that use of the towers is actually more advantageous to the traffickers when it comes to avoiding detection: in rural areas without the towers, the cartels are compelled instead to install standalone antennas which are more easily detected than those piggybacked amongst the telecom users.*

*The Reuters report noted that the existence of these antennas puts many of the telecom workers at risk when they are doing repair work at such a tower and many fear for their lives. The same report noted, however, that federal authorities are provided security from the Defense Ministry of Mexico when they seek to dismantle the cartels' equipment.*

*When Reuters contacted Mexico's telecom and broadcast regulator, the Federal Telecommunications Institute, the agency replied that none of the companies under its jurisdiction have filed reports about the existence of any such parasitic antennas.*

*For Amateur Radio Newslines I'm Kent Peterson KC0DGY.*

---

### AM RADIO ASTRONAUTS TAKE 300th U.S. SPACEWALK

STEPHEN/ANCHOR: Congratulations to Chris Cassidy KF5KDR and Robert Behnken KE5GGX, the NASA astronauts who completed the 300th spacewalk by U.S. astronauts on Tuesday July 21st, working outside the International Space Station on a station system upgrade.

The five-and-a-half-hour task involved various upgrades to the space station's power system.

### A Touch of Ham Humor!

Copyright © 1998 by Greg Trook



"Mr. Nelson...I'm afraid you will have to leave the air for a while during this procedure."

**Q-FIVER EDITOR: ROBERT GULLEY (K4PKM) E-MAIL: AK3Q@AK3Q.COM**

For questions/comments/suggestions, or article submissions, send me an E-mail!



OH-KY-IN Amateur Radio Society is one of the leading amateur radio organizations in the Cincinnati, Ohio area and has been for most of its 50-plus year history. 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*.