



# The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works

~ Official Newsletter of the Portage County Amateur Radio Service, Inc. ~

*PCARS - the 2018 Hamvention® Club of The Year*

*February 2022 - Volume 17 Number 2*

## **Wonderful February in Ohio**



### **PCARS K8BF**

*The Club that puts the FUN in Ham Radio!*





Feature Articles	
<b>Neil Gerren, N8IL - SK</b>	
From the PCARS President	4
From the PCARS Vice President	4
From the Great Lake Division Director	6
From the Great Lake Division Vice Director	8
From the Ohio Section Manager	9
What is a Valid QSO?	12
Magnetic Loop Project	16
Tonga Volcano Update	17
POTA Adventures 2022	18
Young Ham Lends a Hand Contest - 2022	19
Bouvet Island DXpedition News	23
EZNEC is now FREE	24
News from the ARRL	25
Solar Storm and the Solar Cycle	35
Net Burn Out	37
Dayton Hamvention 2022 Update	39
Contest University Dayton & Orlando	39
TopBand & Contest Dinners - Dayton 2022	40
FT8 QSL	42
<b>DX Engineering is Hiring</b>	43

Regular Departments	
PCARS Patches & Stickers	15
Happy Birthday PCARS Members	15
PCARS Coffee Cup - Limited Edition	24
Swap-N-Shop	20
SIG - Digital	28
SIG - Portable Operations	28
SIG - DX & Contest	28
Charlie the Tuner's HF High-Lites	30
PCARS IO Group	34
Paper Chase	41
Member Ham License Plates Wanted	43
PCARS on YouTube	43
Photos from the last PCARS Meeting	45

Finals	
Just For Fun	48
Thanks & 73	49
Fine Print	50

Mark Your Calendar	
Schedule of Events	5
VE Test Information & News	10
Hamfest Calendar	21
Net Info & NCS Schedule	22
Flex Net	22
Meetings, PCARS	44
FYAO- Feb 22 - Cancelled	46
Open Stub Antenna Build	47



Portage County Amateur Radio Service



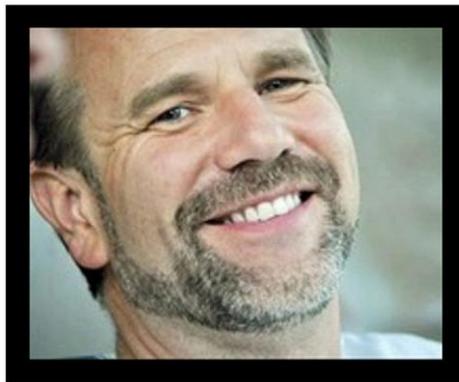
2018 Hamvention® Club of the Year



A massive solar flare (or coronal mass ejection) erupts out of the sun in 2017. (image credit: NASA)

## Neil Gerren, N8IL - SK

PCARS member # 425, Neil Gerren, N8IL is a SK. Neil had contributed articles for The RADIOGRAM. He had a very nice set up at his home QTH and enjoyed getting on the air and working CW and SSB contests as well as chasing DXCC entities on all the HF bands. One of his most memorable contacts was with Monk Apollo on Mount Athos - Neil had made two contacts with him. Neil received the QSL card and was thrilled to have made that QSO. He completed 9-B-DXCC in June of 2019 with a few new confirmations on 160. Neil worked 310 and confirmed 307 DXCC entities and confirmed 1,700+ DXCC Challenge band slots.



Published in Canton  
Repository:

Neil Gerren passed away at home in the early morning of December 8, 2021 after a valiant 17 month battle with brain cancer. Neil held an impressive lifelong career in technology Dell being his last efforts while supporting and treasuring his family. His many passions included HAM radio, which allowed him to chat with remote islands that his family had to Google; playing his

beloved jazz music on a stunning collection of bass guitars; and driving a well-loved RV across the country after painting the exterior in his front driveway. With his wife Lisa of 33 years, he traveled to such frontiers as Budapest, Dublin, Munich, Istanbul, and the Panama Canal. He did his best to live by the wise words of Bill and Ted: "Be excellent to one another."

Neil will be dearly missed by his wife, Lisa; children, Emily and Samuel; father, Harold, and brothers, David and Paul.

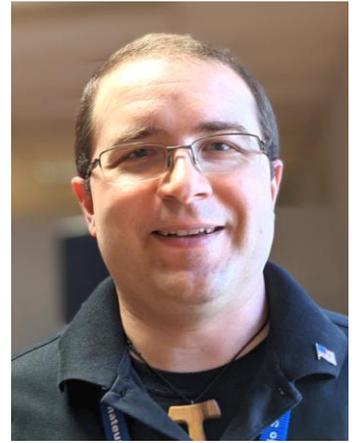
A memorial service was held December 16 at the Chapel at Tinkers Creek The family requests donations to the American Brain Tumor Association, [abta.org](http://abta.org) or Hospice of the Western Reserve, [hospicewr.org](http://hospicewr.org).

Posted online on December 15, 2021

## From the President



**Nick, AC8QG**  
PCARS President



### Well... That didn't go as planned.

I didn't expect to catch COVID. I didn't expect everything to go virtual-only to start the year. And I didn't expect to be canceling and rescheduling events already.

It's not exactly how I envisioned this year kicking off, but sometimes you just need to roll with the punches, I guess. At least we're all a bit more experienced with Zoom this time around. Fortunately, it looks like we may have turned a corner in Northeast Ohio, so it seems like in-person events should be back soon.

Despite the slow start, we're still looking to put some fun activities on the schedule. Mike and I are always open to suggestions, so if there's an amateur radio topic or project you'd like to see covered, and you know of someone who would be a good resource, let us know.

The January SIGs were an excellent reminder to me of the fun we can have with amateur radio. Each Tuesday, we didn't only discuss the weekly topic but also went deeper into what people were enjoying and why they were enjoying it. Sure, there was some friendly banter about the merits of SteppIRs and whether or not FT-8 should be used in contests, but the common thread that pulled everyone together was enjoying radio. That's as it should be, of course. We are a radio club, after all.

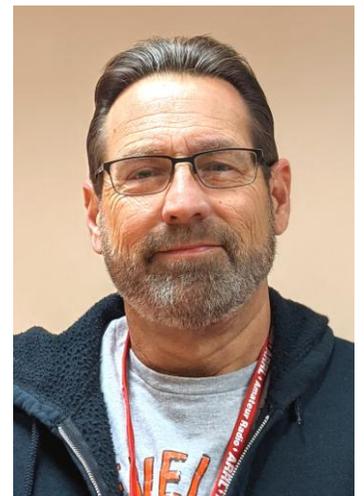
There's still a lot of 2022 left in the tank, and we have a lot that we want to do this year. Omicron may have delayed a few things, but it won't hold us back. Keep your eyes and ears open for announcements here in this newsletter, in QST emails, and on our weekly 2-Meter nets.

Stay safe and healthy, and always remember to make time for some Big Fun!

## From the Vice President



**Mike N8WCP**  
PCARS Vice President



### Brr.. It's cold!

The weather has been a hot topic lately. A tip of the beanie to the hams who worked Winter Field Day. I'm not a cold weather person and I'm looking forward to retiring to a warmer climate but that's a ways off.

What's not a ways off is our next club meeting and Hamvention. Michael Kalter, W8CI will join us on the 14th to give an update on Hamvention 2022 which is being held May 20, 21 and 22, 2022 at the Greene County

Fairgrounds and Expo Center.

Is your 2m/70cm signal in need of a boost? John-WG8X has assembled (14) dual band open stub antenna kits for members to build at the clubhouse on Saturday February 26th at 10:00AM. To reserve a kit, click the link on the PCARS website. The cost of the kit is only \$30 and needs to be prepaid by February 25th.

Do you have a suggestion for a build project or maybe you'd like to present to our members about your latest project? Send me an email at [vicepresident@portcars.org](mailto:vicepresident@portcars.org) and let's get it scheduled.

Now that Winter Field Day is in the books, we can look forward to ARRL Field Day. This year's event will be held the weekend of June 25th & 26th. It's a ways off but we need to start planning now. If you're interested in working one of the stations or helping with setup/teardown, keep an eye out for a QST. I'll be the 20M station captain, if you're interested in operating the 20M station drop me an email at [vicepresident@portcars.org](mailto:vicepresident@portcars.org).

## Schedule of Events



*We plan to add to the schedule as we bring back more in-person events. Look for announcements in QST emails, on the website, on our weekly net, and in future newsletters.*

*If you're not feeling well, please stay home and join us by Zoom if instead. We'll continue to offer Zoom as an option wherever it makes sense to do so.*

**February 5<sup>th</sup> - VE Testing at the PCARS club site - 10 am**

**February 7<sup>th</sup> - PCARS Board Meeting at the club site & Zoom - 7 pm**

**February 12<sup>th</sup> - 17<sup>th</sup> annual FYAO - Fred Fuller Park - CANCELLED**

**February 14<sup>th</sup> - PCARS Meeting - Kent American Legion & Zoom - 7 pm**

**March 5<sup>th</sup> - PCARS Board Meeting at the club site & Zoom - 7 pm**

**March 14<sup>th</sup> - PCARS Meeting - Kent American Legion & Zoom - 7 pm**

First Tuesday - **Digital** - Moderator: Rick, K8CAV - **On Zoom Only** -

Second Tuesday - **Portable Ops** - Moderator: John, WG8X

Third Tuesday - **Antenna** - Moderator: Tony, WA8AR

Fourth Tuesday - **DX & Contest** - Moderator: Chuck, W8PT

**Fourth Thursday - Net Night at the Club Site - 6:30 pm - Moderator: Tom, WB8LCD**



It's  
Summer  
in this  
rare DX  
entity !



## From the Great Lakes Division Director



**Dale, WA8EFK**  
ARRL Great Lakes Division Director



Greetings, welcome to "Dale's Tales" for February 2022

**SOME RECENT UPDATES.** When I took up the role as Great Lakes Division Director, I renewed all of the Division appointments that had been made by my predecessors. Everyone is truly dedicated and working well as a team. There were a large number of Assistant Directors (AD) in the pool of volunteers and it was the policy to appoint as Assistant Directors, people who had served in various leadership positions. This was becoming difficult to manage. A couple of individuals had even moved from the division. I attempted to create special duties for each AD and yet looking at regular appointees to various ARRL committees like DXAC, CAC, EMCOMM and the like, much of the duties were duplicated.

Scott N8SY and I discussed it and we also spoke about these challenges with some of the appointees. Everyone we spoke with was of the opinion that these AD appointments, while perhaps rewarding to the office holders, were redundant and difficult to manage while truly offering little to benefit our fellow Radio Amateurs. Effective in early January, with thanks to all participants, we closed the position. I received notes from several former ADs suggesting it was the right decision. (Whew!) My personal thanks to all who served and further thanks to all who agreed to be readily available if their talents are ever needed in the future. I really appreciate how well everyone in the Great Lakes Division works together; it is something of which to be proud.

**THE ARRL BOARD OF DIRECTORS MEETING** has been completed, so over the next couple of weeks, you will see reports of what took place during this session. In brief, we have elected some new officers, Rick Roderick K5UR continues as President while Mike Raisebeck K1TWF remains as 1st VP and Bob Vallio W6RGG continues as 2nd VP and Rod Stafford W6ROD remains as International VP and Dave Minster as CEO and Secretary. We elected Rick Niswander K7GM to continue as Treasurer until May 1 to work with positioning our new Financial Management firm and then our newly elected treasurer John Sager WJ7S will take the helm.

**NEW 2022 ARRL BOARD COMMITTEE APPOINTMENTS** are as follows:

**Executive Committee:** Director Abernethy, Director McIntyre, Director Lippert, Director Strattonm, Director Williams, President Roderick, First Vice President Raisbeck, CEO Minster

**Administration and Finance:** Director Ryan (Chair), Director Baker, Director Jairam, Director Kemmerer, Director Norton, Vice Director Marcin, Vice Director Nelson, First Vice President Raisbeck, Treasurer Niswander, CFO Middleton (Staff Liaison)

**Programs and Services:** Director Ritz (Chair), Director Lippert, Director Luetzelschwab, Director McIntyre, Director Zygielbaum, Vice Director Grady, Vice Director Propper, Second Vice President Vallio, Mr. Bob Naumann (Staff Liaison)

**Emergency Communications & Field Services Committee:** Director Williams (Chair), Director Abernethy, Director Bohner, Director Norris, Director Stratton, Vice Director Cooper, Vice Director Schilling, Vice Director Tharp, Vice Director Yonally, Josh Johnston (Staff Liaison), Mike Walters (Staff Liaison)

**ARDF:** Jerry Boyd WB8WFK (Co-coordinator), Charles Scharlau NZ0I (Co-coordinator), Richard Arnett, WB4SUV, Ruth Bromer, WB4QZG, Joseph Burkhead, KE8MKR, Thomas Chen, Brian DeYoung K4BRI, Robert Frey, WA6EZV, Ken Harker, WM5R, Lori Huberman, Joseph Huberman, K5JGH, Donald Pitchford, W9EBK, Nadia Scharlau, KO4ADV

**ARISS Committee:** Vice Director Tharp (Chair), Vice Director Schilling, Vice Director Nelson, Vice Director Temples, Vice Director Walls, Bob Inderbitzen (Staff Liaison), Other consultants as needed (i.e. Rosalie White, K1STO)

**CAC:** Mr. Craig Thompson K9CT (Chair), Director Lippert (Board Liaison), All Division Field Appointees remain

**DXAC:** Mr. Chris Shalvoy K2CS (Chair), Director Luetzelschwab (Board Liaison), All Division Field Appointees remain

**Electromagnetic Compatibility (EMC):** Director Luetzelschwab (Chair), Director McIntyre, Vice Director Hudgens, Vice Director Stearns, Ed Hare (Staff Liaison), Paul Cianciolo W1VLF (Lab Staff), Mike Gruber (ARRL Volunteer), Kermit Carlson, W9XA, Brian Cramer, W9RFI, Richard Dubroff, W9XW, Ron Hranac, N0IVN, Riley Hollingsworth, K4ZDH, Greg Lapin, N9GL, Ghery Pettit, N6TPT, Jerry Ramie, KI6LGY, James Roop, K9SE

**Ethics and Elections:** Director Zygielbaum (Chair), Director Norris, Director Lippert

**HF Band Planning:** First Vice President Raisbeck (Chair), Director Jairam, Director Ritz, Vice Director Hudgens, Vice Director Sterns, Vice Director Temples, Others as tasking requires

**Historical:** Vice Director Propper (Chair), Director Luetzelschwab, Director Norton, Vice Director Nelson, Ed Hare (Staff Liaison), Bob Naumann (Staff Liaison), Rod Blocksome, K0DAS, Bill Hudzik, W2UDT, Peter Turbide, W1PT, Ray Thornton, W1YFF

**Legal Defense and Assistance:** International Affairs Vice President Stafford (Chair), First Vice President Raisbeck, Vice Director Famiglio, Counsel Siddall, Fred Hopengarten, K1VR, Michael Lazaroff, K3AIR, Legal Counsel as needed

**Legal Structure Review Committee:** Director Stratton (Chair), President Roderick, CEO Minster, International Affairs Vice President Stafford, Vice Director Famiglio

**Legislative Advocacy Committee:** Director Stratton (Chair), Director Abernethy, Vice Director Cooper, President Roderick, Fred Hopengarten, K1VR, Legal Counsel as needed. Others as tasking requires.

**Logbook of The World Committee:** Greg Widin K0GW (Chair), Director Baker (Board Liaison), Director McIntyre, Vice Director Marcin, Treasurer Niswander, Bob Naumann (Staff Liaison), Rick Murphy, K1MU

**Permanent Investment Management Committee (effective May 1, 2022):** Vice Director Morine, Others to be determined

**Public Relations:** Mr. Bob Inderbitzen (Chair), Vice Director Scott Yonally (Board Liaison), John Bloodgood, KD0SFY, Ed Efchak, WX2R, Andy Milluzzi, KK4LWR, Gordon Mooneyhan, W4EGM Kevin O'Dell, N0IRW, Scott Roberts, KK4ECR, Angel Santana, WP3GW, Alan Griffith (RAC Representative)

**RF Safety:** Dr. Gregory Lapin N9GL (Chair), Vice Director Propper K2DP (Board Liaison), Ed Hare (Staff Liaison), Jerry Bushberg, KJ6HDL, Matt Butcher, KC3WD, Brian Daly, WB7OML, Robert Gold, MD, W0KIZ, William Kaune, W7IEQ, James Ross, MD, W4GHL, Kai Siwiak, KE4PT, Bruce Small, MD, KM2L, Richard Tell, K5UJU, Guy "Bud" Tribble, MD N6SN, Gerald Griffin, MD, K6MD Emeritus), William Raskoff, MD, K6SQL (Emeritus).



**PCARS K8BF**  
*The Club that puts the FUN in Ham Radio!*



## From the Great Lakes Division Vice Director



**Scott, N8SY**  
ARRL Great Lakes Division Vice Director



### Scott's Notes for January 2022

What a wild week that Dale and I had in Newington at the annual Board of Directors meeting recently! We both were on the go attending the various committee meetings as well as the Board meeting itself. Things started bright and early on Wednesday morning and finally coming to an end late Saturday afternoon. It was a very long week, but it was worth it for sure. You'll be hearing more about the outcomes of those meetings very soon.

I'm assuming that you are reading this column on Tuesday, February 1st, and as such, I just want to say that tomorrow is Groundhog Day! Yes, the day we all get up before the crack of dawn and grab a little varmint that does nothing but make a mess out of our garbage cans and we celebrate whether he can see his shadow when the sun rises. Here in Ohio, we have Buckeye Chuck doing the forecasting. He's been right only slightly more than wrong, but hey, it's fun just to see if that little critter really does predict it accurately or not. Personally, I think he's no better than a coin toss, but what the heck, it's something fun to do. February is also known as the month for lovers, as that it's Valentine's Day on Monday, February 14th. Now, I don't know about you, but I've found the best way to keep my YL happy is to take her out for that special dinner, if not on Valentine's Day, somewhere close to it, especially if you want to drop the bomb that you've just purchased a new very expensive transceiver. So, do yourself a favor, make dinner plans now for that special day!

**Switching gears for a bit...** We have a couple of great ARRL contests coming up this month, School Roundup on February 14th - 18th, and International DX - CW contest on February 19th - 20th. Hey if you're not a contester I get it, but you still can have some fun and make a kids' eyes light up if you do decide to participate in the School Roundup.

**Switching gears again...** If you haven't gotten your NIMS training completed yet, this will be a great time to get that training in before the weather starts turning nice again. With winter now deeply embedded here, you'll want to stay indoors. Trust me on this, there's really nothing good on TV to watch anyway so why not take advantage of the spare time and get that all important training in now. All the classes that are suggested in the ARES Plan - including ICS-300 and 400 are available on-line. You may have to look around a bit to find an open on-line class for ICS-300 and 400, but they are out there and just ready for you to get started on!

Oh, and don't forget your first aid, CPR and AED as well as those all-important "Stop the Bleed" classes too. They are sometimes the ones that we forget about the easiest and become the most important classes we could ever do. Don't be one of those folks that say, "I don't need this training because nothing ever happens here!" It does - and will! The better that we are prepared, the better we will be at assisting our served agencies and even possibly our own families when that time comes, and like I said, it will!

Clubs, are you still meeting via Zoom or similar methods, or maybe you're one of the lucky clubs that have been meeting hybrid so that everyone gets to partake? Have you been searching for a good program to present to your club? You might consider one of the great recorded webinars that are listed in the ARRL Learning Center or even a live presentation from one of the ARRL staff. I've sat in on several live presentations from the staff and they are the best. It's really fantastic to be a part of a live presentation from ARRL Headquarters while being able to sit in your comfy easy chair at home! What better way to see just what some of your dues go to! They have many great recorded webinars that are really good and informative. Most of these are around 40 minutes or so long. Just the right amount of time to be informative, yet not so long that they get overly boring.

That is going to do it from here this month. Stay safe and **"Catch Me On The Air"!!!**

## From the ARRL Ohio Section Manager



**Tom, WB8LCD**  
ARRL Ohio Section Manger



Despite everything going on around us, as humans we learn to cope with our circumstances and always have the desire to make it better.

This year started out with a HAMFEST! (Ooops, not the one in the picture) I'm glad I was able to make it there and back home without incident. I had a really good time, met some really nice people, some old friends, and had the chance to talk with everyone who wanted to. Knowing that this year the Sunday Creek Amateur Radio Federation was at a new location, I can report that it was a success and will be able to grow and get better as we move into the future. Put it on your list for 2023 and get the year started out right. I live in NE Ohio and Shade is in SE Ohio. Who would have thought that my GPS would have taken me through West Virginia to get there? Turns out that's the best way to go. I like to get off the beaten track, so on the way home I took a route that took me through some of the more rural areas of Athens County. I was on a gravel road when I crossed the covered bridge in my opening picture. Ohio is truly a state with diverse terrain.



At the fest I had a good chance to talk with Kirk Groeneveld, KC8JRV. We talked a lot about "Fox-Hunting". As a subset of Amateur Radio activities, fox-hunting has a lot to offer. It's easy and simple to get involved with and be successful. If you're interested in an activity that kids can get involved in – fox-hunting is a perfect fit. You don't even need a license to hunt the fox! Equipment is simple and inexpensive – much can be home-brewed or built as a club project. If your club has never participated in a hunt, set one up, or visit with a club that has one. It's an activity, and it's fun.

You know that there are a lot of folks in the Ohio Section working to make your ham radio experience a good one. To be successful as a ham, as a club or even as an institution, there are two things we have to accomplish: 1) we need to provide a service to our communities, and 2) we need to enjoy what we are doing (have fun). I appreciate everyone who makes the effort to support that. And a lot of you do. **Thank you.**

I know a lot of you who are involved with Parks on the Air. That's a fantastic way to get out there and be a Ham and enjoy the OH parks all in one operation. Are any of you guys involved with County Hunting? Sounds pretty easy, but it's a much bigger challenge than you might think. There are 3077 US Counties that have to be contacted. Some are pretty easy, some are a lot tougher. Here's a challenge for you – Start out with OHIO. There are 88 counties in Ohio. The basic award is issued for contacting 22 of the 88, one of which *must* be Montgomery County. Endorsements are issued at 44, 66 and all 88. All bands and modes OK, except no use of repeaters or digipeaters. Cards must be in your possession and available on request. Award is FREE, send a 9"x12" SASE with GCR list to: Ohio County Award, Dayton Amateur Radio Association - PO Box 44 - Dayton, OH 45401-0044. There are a couple of counties in OH that are much rarer than the rest. Plan a DXpedition to one of those counties to make yourself the rare DX (Don't forget to promote your operation with the County Hunters so they know you're out there. Especially foreign Hunters will search you out.

So, now it comes down to this. I'm looking for some "experts". If you have an area of expertise and would like to write about it, I will use it in PostScript and/or the Ohio Section Journal. No subject is taboo. (I didn't really mean that literally – subject must be Amateur Radio related and appropriate). How about an article(s) on Foxhunting, County Hunting, Parks on the Air, Working the Satellites, Improving your Field Day Score, restoring old radio. There is no end to the subject matter. The important thing here is that Hams want to know what other hams are doing and how they can do it too! Ham Radio history is also an interesting topic. An article with a couple of photos. As usual, PLEASE, articles should be submitted as .docx using New Times Roman 12 font. Photos should be .jpeg. (That's just to make it easier on me!) You too can be a celebrated author in your field.

# PCARS VE Testing Information & News

**Tom, KB8UUZ**  
PCARS VE Team Liaison



**GOOD NEWS** – Due to the COVID 19 concerns, PCARS has shut down in-person VE testing to ensure the safety of our VE team members and the applicants that wanted to take a test for their new amateur radio license or to upgrade.

**Check the website for the latest information.**

If you have any questions, don't hesitate to contact me at [KB8UUZ@gmail.com](mailto:KB8UUZ@gmail.com) On behalf of the VE team at PCARS, we all look forward to seeing you at the PCARS club site in Ravenna so you can take your license test. Face masks are not State/County mandated at this time, but you are always welcome to wear one.

PCARS VE sessions are scheduled for **10:00 am** on the first Saturday of every even numbered month at the PCARS club site in Ravenna.

**April 2<sup>nd</sup>, June 4<sup>th</sup>, August 6<sup>th</sup>, October 1<sup>st</sup>, December 3<sup>rd</sup>**

WALK-INS will be accepted.

- **You must have your FRN prior to taking an exam** - No SSNs will be used on the Form 605 anymore.
- If you are sick, have a cough, a high temperature or have been exposed to COVID-19 or someone that has been infected - please, *do not* come to the club site. Use of masks is still encouraged.
- No food or snacks allowed.
- \$15.00 Fee Payment will only be by check or exact change. We cannot make change
- If paying by check, make check out to: "ARRL-VEC" The VE Fee is \$15.00
- Ensure you have the following:
  - A picture ID such as a valid Driver's License, State ID, School ID, or US Passport.
  - If you are under 16 years of age, a parent or guardian must be able to vouch for you and you need a copy of your birth certificate (you do not have to give us a copy, we just have to see and verify).
  - **FCC is requiring you have your e-mail address on the Form 605.**
  - **If you are taking a Technician test you must have your FRN number** (you can apply for an FRN on the FCC website). For hams having a license, your FRN is printed on your license.
  - **If you are upgrading to General or Extra - You MUST bring your original valid amateur radio license and a copy of your valid amateur radio license to turn in with your Form 605.**
  - Bring your own pencils and pens.
  - Calculators are okay to use (if you need one) as long as the memories are cleared.
  - NO cell Phones allowed



Any questions? Contact [KB8UUZ@gmail.com](mailto:KB8UUZ@gmail.com)

## Additional Information - What to Bring to the Testing Session

- If you've already passed a test: The original (and one copy) of any document that you will use to prove you've already passed a test element.

These documents may include:

- An unexpired Certificate of Successful Completion of Exam (CSCE) indicating the credit(s) earned.
- Original and copy of a pre-March 21, 1987 Technician license (this provides credit for the Element 3 [General] exam) - you **must** be currently licensed to get this credit.

Expired License? **Original** and a copy of your expired Amateur Radio License - you must take and pass Element number 2 to reinstate your license.

## ARE YOU GOING FOR YOUR TECHNICIAN LICENSE? READ THIS IMPORTANT INFORMATION

### First-Time Exam Applicants **MUST** Obtain FCC Registration Number **BEFORE** Taking Exam

As of **May 20, 2021**, all amateur examination applicants are **required** to provide an FCC Registration Number (FRN) to the Volunteer Examiners (VEs) **BEFORE** taking an amateur exam. This is necessary due to changes the FCC has made to its licensing system. Applicants will create an FCC username and account, respond to the verification email from FCC, and then register for the FRN. Register on the FCC's Commission Registration System (CORES): <https://apps.fcc.gov/cores/>

### Social Security Numbers are **NO LONGER ACCEPTED** at Exam Sessions

Amateur candidates who already have an FCC license, whether for amateur radio or in another service, already have an FRN and can use the same number - it is printed on your current license. All prospective new FCC licensees, however, will be required to obtain an FRN *before* the examination and provide that number to the volunteer examiners on the Form 605 license application. An FCC instructional video (<https://www.fcc.gov/rofrn>) provides step-by-step instructions on how to obtain an FRN through the FCC's CORES system. The FRN is required for all new applicants to take an amateur exam and is used afterward by the applicant to download the license document from the FCC Universal Licensing System (ULS) (<https://www.fcc.gov/wireless/universal-licensing-system>), upgrade the license, apply for a vanity call sign, and to submit administrative updates (such as address and email changes) and renewal applications.



### Email Addresses **REQUIRED**

As of **June 29, 2021** all applications will be required to contain an email address for FCC correspondence. Applicants will receive an email direct from the FCC with a link to the official electronic copy of their license whenever a license is issued or changed. ARRL VEC suggests that those without access to email to use the email address of a family member or friend. Licensees will be able to log in to the ULS using their FRN and password to download the latest version of their license at any time. The FCC no longer provides paper license documents.

### New FCC Application Fees Information

08/16/2021

The schedule of FCC amateur radio application fees likely will not go into effect before **2022**. FCC staff confirmed during a recent virtual meeting with Volunteer Examiner Coordinators (VECs) that the agency is still working on the necessary changes to the Universal Licensing System (ULS) software and other processes and procedures that must be in place before it starts collecting fees from amateur applicants. Earlier this year, the FCC said it would not start collecting fees from amateur applicants before this summer. The new estimate is that the fees won't go into effect until early next year. Once it's effective, the \$35 application fee will apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications. All fees will be per application. Administrative update applications, such as those to change a licensee's name, mailing, or email address, will be exempt from fees. ARRL VEC manager Maria Somma, AB1FM, said Volunteer Examiner (VE) teams will not face the burden of collecting the \$35 fee. "Once the FCC application fee takes effect, new and upgrade applicants will pay the exam session fee to the VE team as usual, but they'll pay the \$35 application fee directly to the FCC using the **FCC Pay Fees** system," she explained. When the FCC receives the examination information from the VEC, it will email a link with payment instructions to each successful candidate who then will have 10 days from the date of the email to pay. After the fee is paid and the FCC has processed an application, examinees will receive a second email from the FCC with a link to their official license. The link will be good for 30 days. Licensees also will be able to view, download, and print official license copies by logging into their FCC ULS account. The FCC no longer provides printed licenses. Licensees can log into the **ULS** with their 10-digit FRN (FCC Registration Number) and password at any time to view and manage their license and application, **print their license**, and update anything in their FCC license record, including adding an email address.

**FEE SCHEDULE INDIVIDUALS** - \$35 FEE: New, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications. All fees will be per application. - NO FEE: Administrative updates, such as a change of name, mailing or email address, or license cancellation. **AMATEUR RADIO CLUBS** - \$35 FEE: New, renewal, trustee change, and vanity call sign applications. All fees will be per application. - NO FEE: Administrative updates, such as a change of name, mailing or email address, or license cancellation.

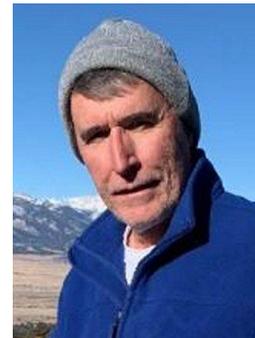
ARRL Volunteer Examiner Coordinator (VEC) Manager Maria Somma, AB1FM, said VECs and Volunteer Examiner (VE) teams will **not** have to collect the \$35 fee at exam sessions. **Once the FCC application fee does take effect, new and upgrade applicants will pay the regular \$15 exam session fee to the VE team as usual, and pay the new \$35 application fee directly to the FCC via the [Fee Filer System](#) or [License Manager System](#).** The new CSCE form now has information about fee payment,

## What is a Valid QSO ?

# QSO

**Bob, K0NR**

<https://www.k0nr.com/wordpress/>



### What Is a Valid QSO?

Ham operators make radio contacts on a routine basis. We call another station or another station responds to our call, we exchange some information, maybe chat for a while and then finish the contact, clearing out with our callsigns. Most of the time we clearly know whether we had a valid radio contact, commonly referred to as a QSO.

Sometimes it is not so clear. I hear a DX station calling CQ...I call him (giving his callsign and my callsign) and I hear him say “your report is 5 and 9” so I say “QSL and 73” and put him in the log. Did I really work him? Maybe not. Did he hear my callsign correctly? Was he even talking to me? Not sure.

The question of what constitutes a valid radio contact has been asked for decades. Edward Tilton W1HDQ in the “The World Above 50 Mc” column, QST Magazine, March 1957 wrote this:

*As amateurs we are presumed to be engaged in communication. This implies exchange of information, not just identification of one another. Thus, a reasonable definition of a QSO, for amateur purposes, would seem to be an exchange of useful information. Otherwise, why communicate at all?*

Tilton goes on to say:

*The minimum exchange for two-way work to be considered a contact has been fairly well standardized on a two-stage procedure: positive identification of calls at both ends, and the complete exchange of signal reports. The latter is about the shortest item of information that can be transmitted between two stations that will have any meaning at all. The form varies with various operating activities, but the basic idea of mutual exchange remains in all.*

Actually, the exchange of signal reports may be replaced by some other “exchange of information.” For example, during VHF contests the standard exchange of information is usually the 4-character grid locator. Signal reports are not usually given.

### The IARU Three Steps

The International Amateur Radio Union (IARU) in their HF Manager’s Handbook and VHF Manager’s Handbook says:

*A definition for a valid QSO is:*

*A valid contact is one where both operators during the contact have*

- 1. mutually identified each other*
- 2. received a report, and*
- 3. received a confirmation of the successful identification and the reception of the report.*

*It is emphasized that the responsibility always lies with the operator for the integrity of the contact.*

Let’s take a practical look at the IARU definition and what it means:

#### **1. mutually identified each other**

*You exchange callsigns with the other station (making sure you have them correct). This tends to happen naturally as part of the calling process in amateur radio.*

#### **2. received a report**

*You exchange a signal report or some other information (grid locator, contest exchange, ...)*

### 3. received a confirmation of the successful identification and the reception of the report.

You acknowledge that you have the information from 1 and 2, by saying “QSL”, “Thank you” or something similar.

### Some Scenarios

The rigor applied to making a contact does vary depending on the specific situation. Here are a few specific examples that will help explain this.

### FT8

The WSJT-X software used for making FT8 contacts has IARU Steps 1, 2, and 3 embedded into its communication protocol. FT8 is intended to work well under weak-signal conditions, so the software implements a rigorous use of information exchange. Appropriate use of this software guarantees a valid QSO.

**These are the FT8 messages for KØNR working W1AW.**

The QSO starts with one station calling another (callsigns are exchanged). The standard FT8 messages (see figure) show that KØNR calls W1AW with grid locator included (TX1). Typically, W1AW would respond by calling KØNR and providing a signal report. (Signal reports are in decibels, just a number.) KØNR responds with TX3, which does two things: sends “R” to indicate that the signal report from W1AW was received AND sends the signal report of -15 dB to W1AW. When W1AW receives that transmission, it knows that callsigns and signal reports have been exchanged and sends RR73 to complete the QSO. KØNR may respond with a 73 message, but that is not required for a valid QSO.

Generate Std Msgs	Next	Now
W1AW KØNR DM78	<input checked="" type="radio"/>	Tx 1
W1AW KØNR -15	<input type="radio"/>	Tx 2
W1AW KØNR R-15	<input type="radio"/>	Tx 3
W1AW KØNR RR73	<input type="radio"/>	Tx 4
W1AW KØNR 73	<input type="radio"/>	Tx 5
CQ KØNR DM78	<input type="radio"/>	Tx 6

I realize that if you haven’t worked FT8, this may be confusing. If so, just note that the design of the WSJT-X software leads the user through these specific messages to ensure that the three IARU steps happen.

### VHF Contest QSO With Weak Signals

Radio contacts during VHF contests can be a bit casual: one operator calls another (callsigns exchanged) and they tell each other their grid locators. IARU Step 3 (the QSL or acknowledgment) may be assumed or perhaps one of the operators just says thanks or 73 to indicate the contact is complete and they are signing clear. But when the signals are weak, VHF operators tend to be more careful about making sure they made the contact.

Here’s a weak-signal CW QSO between KØNR and W9RM:

*KØNR calls W9RM*

KØNR: W9RM W9RM W9RM de KØNR KØNR KØNR

*W9RM responds and sends his grid (DM58)*

W9RM: KØNR KØNR de W9RM DM58 DM58 DM58 BK

*KØNR responds with multiple “R”s to indicate that the grid was received and sends his grid (DM78)*

KØNR: R R R DM78 DM78 DM78 BK

*W9RM responds with multiple “QSL”s to acknowledge that the information is complete*

W9RM: QSL QSL QSL de W9RM BK

*KØNR would probably reply with “73 73 73” but that is not necessary for a valid QSO*

### HF Contests

HF contests are fast and furious, with a high value placed on quickly making contacts. Thus, they tend to use the bare minimum to complete a QSO. Let’s take the example of a Big Gun station making multiple contacts in succession, otherwise known as “running.” Here, ZF1A is working the CQ Worldwide DX Contest with a number of stations calling him. He initiates the radio contact with “QRZ?”

*ZF1A calls QRZ?*

ZF1A: ZF1A QRZ?

*KØNR calls ZF1A by just saying his callsign*

KØNR: Kilo Zero November Romeo

*ZF1A calls KØNR and gives the contest exchange: signal report (always 59 in a contest) and CQ Zone (08 in this example)*

*ZF1A: KØNR 59 08*

*KØNR responds with a “Roger” to indicate the information was received and provides a signal report and CQ Zone 04*

*KØNR: Roger 59 04*

*ZF1A acknowledges the information and calls for the next station*

*ZF1A: Thank you, ZF1A QRZ?*

This is a fast and tight exchange. Note that to save time, KØNR did not say ZF1A’s callsign during the contact. It does have the potential of a broken QSO if the operators are not paying close attention. KØNR must be sure he is hearing ZF1A’s callsign correctly and that ZF1A sent KØNR’s callsign correctly. Similarly, ZF1A will make sure he has KØNR’s callsign and exchange before moving on. If ZF1A is not sure of KØNR’s callsign and exchange, he will ask for a repeat. Sometimes the running station just calls QRZ? to complete the contact so IARU step 3 is implied. (If ZF1A did not have confidence that the QSO was complete, he would have asked for a repeat.)

### **Parks On The Air (POTA)**

From the POTA rules: “POTA does not require a formal exchange, though many activators will wish to receive real signal reports, names and locations.” My experience is that the park Activator usually sends a (real) signal report and the park number (e.g., K-4404). The Hunter usually sends a real signal report and state.

Something like this:

*KØNR calls CQ POTA*

*KØNR: CQ CQ Parks on the air Kilo Zero November Romeo*

*KØJJW answers him*

*KØJJW: KØNR this is KØJJW Kilo Zero Juliet Juliet Whiskey*

*KØNR responds with the signal report and park number*

*KØNR: KØJJW you are 57 in park K-4404*

*KØJJW acknowledges the information and provides a signal report and state.*

*KØJJW: Roger. You are 5 6 into Colorado. Thanks for the activation.*

*KØNR confirms that the QSO is complete and moves on to the next station*

*KØNR: QSL and thank you, this is Kilo Zero November Romeo, Parks On The Air*

When conditions are marginal, a POTA QSO will naturally tend to have signal reports and QSL messages sent multiple times to make sure that the information gets through.

### **Summits On The Air (SOTA)**

The general SOTA rules state “QSOs must comprise an exchange of callsigns and signal reports, it is strongly recommended that the summit identifier be given during each contact.” SOTA contacts are similar to POTA contacts in terms of format, except the summit number (e.g., W0C/FR-004 ) is exchanged instead of the park number.

### **Time Constraints**

Meteor scatter (MS) is an interesting case, mostly because it can take a long time to complete the QSO. The two stations are transmitting to each other on alternating time windows hoping that a meteor will streak by and leave an ionizing trail so that a radio contact can be made. It is common for an MS QSO to take 30 minutes or longer.

The message sequence is similar to the FT8 example, so I won’t repeat it here. Imagine sitting in front of your computer patiently waiting for the right meteor burst to occur so that 1) callsigns are exchanged 2) signal reports are exchanged and 3) a final acknowledgment occurs. This raises the question of how long is too long to count as a valid QSO? I don’t know of a specific standard but most people would agree that if the three steps occur over several days, it is probably not a valid QSO. It seems like most hams working MS complete their contacts within a few hours, typically less.

One more question: what information do you need to record concerning the QSO? This will also vary depending on the circumstances, but most hams log callsign, signal reports, time (UTC), frequency or band, and mode. Note that Logbook of The World does not store signal reports but does require and store the time of the QSO, along with the band and mode. Another example: when submitting a contest log, the context exchange from both stations must be included (and these are

checked against other submitted logs). The point is you need to be thinking about how the QSO information is going to be used and recorded. [Thanks, Bob/WØBV]

**Summary**

The three steps in the IARU definition of a valid QSO can be summarized as: 1) exchange call signs 2) exchange signal report or other information and 3) confirm that #1 and #2 happened. This still leaves some gray area when it comes to deciding whether a QSO was valid or not. Most of us have had that funny feeling at the end of a marginal contact: should I put this in the log or not? This is where the final IARU advice applies: *The responsibility always lies with the operator for the integrity of the contact.*



**WORD TO THE WISE**

**Exchange** - The information to be transmitted and received over the air in a contest. Each contest has its own specific exchange that must be included in the log submitted to the contest's sponsor. The exchange often includes your call sign, but often includes a sequence number, general location indicator, or signal report. It's always best to check the rules of the specific contest to make sure you know what the exchange is.

**PCARS Patches & Stickers**



PCARS logo patches (iron on) & stickers (stick on) are now available!! Put the patch on your hat, your shirt, your jacket and show off that PCARS logo!! The patch is about 3". The embroidery on the white patch is in Red, Black



and Blue. Cost for a patch is only \$2.00 each and can be obtained at any PCARS meeting. There are 2 types of stickers available - a 4" x 6" oval and a 3" x 10" bumper sticker. Stickers are \$1 each. Show your pride in PCARS - Wear a patch, use the stickers! See the club Treasurer: **Greg, KA8TOA** or e-mail him at: [Treasurer@portcars.org](mailto:Treasurer@portcars.org)

**Happy Birthday PCARS Members**

PCARS members having their birthday in **February**:

W8VFD	Michael
KE8REE	Gary
KC8QPC	Lester
AG8GM	Ghislaine
KD8DFL	Ray

KC8LJY	Michael
AB8YK	James
N4IT	Carl
KC8YYS	James
WV8P	David



# Magnetic Loop Project

**Brandon, KE8ARB**



This is a write-up of my journey building my 1st through 6th magnetic loop. This is for entertainment and camaraderie and should not serve as a how-to or instructions! There! You've been warned!

## Why a magloop anyhow?

I picked a magloop because they are great for portable operations. They are a resonant antenna that is highly efficient! I needed something that would work with my IC-705 without a tuner. Initially I wanted to get on 10M and try out some HF. This was my means to do it!

## Why build my own?

I love building antennas for my RC stuff, I figured 'how hard could this be?' I \*KNEW\* I could build it for \$100's less than what I could buy one!

My initial design involved a lot of online calculators and reading about how other DIY'ers had built their own. There are a few different designs to choose from, but I went with what seemed the easiest from a construction perspective.

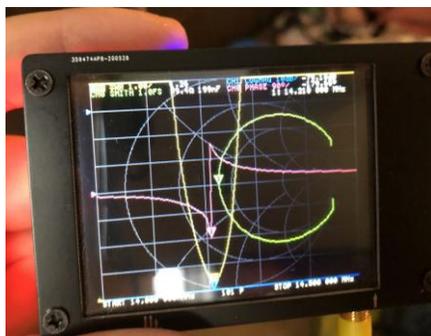


There are a few commercial designs that seem to be very refined and work well. I used that as a starting point to see if I was in the ballpark. I built a 1M diameter loop for the main loop, and a 23cm diameter loop for the exciter. This was based on a design that I found that is sold online. From here I needed to find an air variable capacitor that had a small enough capacitance to let the loop resonate on 10M. I was very graciously sold a Hammarlund at a trunk fest for \$20. It is a work of art, a



piece of history, it was in my magloop and it works BEAUTIFULLY! Now I was on the air on 10M. When properly tuned with my nanovna, the SWR was 1:1. It didn't have enough capacitance for any of the other bands, but this didn't matter until August when I got my general ticket!

The day I was granted my general privileges, I setup the magloop to see what I could do on 20M. Much to my chagrin, the loop would barely do 3:1 SWR where it was



resonant and the bandwidth was a few kHz at best. This issue plagued me up until yesterday. I brought the loop to the club site for an antenna SIG and we hooked it up to an MFJ to observe forward power and SWR. I figured out a few things, but largely no progress was made. This entire process left me very frustrated so I went out and put up a horizontal loop antenna and forgot about the magloop for months.



So what was going on with the loop anyhow? Why was my bandwidth so low? Why would it tune beautifully on 10M and not at all on anything else? The

answer came from a conversation with Jim, AC8NT! He told me that my theory about the variable capacitor having issues was probably wrong and that I should take a closer look at my exciter. So that's exactly what I did. I tested the variable capacitor in isolation. No shorts, no oddities in the capacitance, it was perfect. I looked at the exciter. The connection was great, the coax seemed fine, but there was a critical flaw in "my" design. If you know anything about magloops, they want to have the exciter be 1/5 the diameter of the resonant loop. There is apparently a LOT of math that goes into proving this. The short of it is that the area of those two circles plays a big part in the impedance match. The more round it is, the better the ratio of the area will match... and the better your antenna will resonate across its entire range. So when you have an exciter that is 23cm instead of 20cm it creates EXACTLY the behavior you see here.



After Jim told me to build a different exciter, that's exactly what I did. My outer loop is 1M in diameter so I made an exciter that is 20cm in diameter. It doesn't sound or look like a big difference, but the proof is in the pudding! The thing tunes like an ABSOLUTE dream across the entire usable range of the capacitor. Attached is the picture I took of the nanovna with the antenna tuned in the 20M band. I fired up the radio, threw the antenna outside and logged a QSO with someone in FL using 10W with the null of the antenna facing them. So not only does it tune, it gets the job done!

What have we learned? The antenna has much more gain. It tunes a ton better 1.29:1 at the worst across the entire band from 10-40M. The bandwidth is something much more sane. I forget what it is exactly, but it's somewhere closer to 30 kHz at the most narrow. I have to say, it was GREAT to have issues to work through and sort out because I have learned a bunch, and had the chance to talk with some very smart people. Thank you all for your support, encouragement, and expertise.

**p.s.** if you'd like a magloop from my "learning" pile I'd be glad to part with things for a low, low cost. I've a local-ish supplier for variable capacitors that works well and doesn't break the bank. Maybe there'd be interest in a magloop build?

## Tonga Volcano Update

### Ham Radio Disaster Communications

Posted date: January 21, 2022

An update on the situation coming out of Tonga. A very large volcano erupted disrupting satellite, communications and telephone networks. Electricity has also been affected.



In this video is the latest update on the ham radio communication efforts for disaster relief. Thanks to **Roly ZL1BQD** and **Antoine 3D2AG** for the local information. <https://youtu.be/IEd8Mo8BNhM>



# POTA Adventures 2022

## John, WG8X



I've had a bit of a slow start to 2022. But the momentum is picking up. If all goes as planned, I should have close to 20 activations in the POTA log by the time you read this.

Thanks to carelessness on my part, I finally got motivated to begin the transition over to hard cases for my POTA gear. The carelessness involves letting my RigExpert antenna analyzer tumble to the ground on cold morning. More on that later.

I started out with an Apache 4800 case to hold my radio gear, and battery. I am not a fan of the "Pick & Pluck" style foam, so after consulting the internet (You Tube University), I applied a few coats of Plasti-Dip rubberized spray to the foam. This stiffens the foam up a bit, so that it doesn't fall apart over time.



The case contains my Yaesu FT-891, Signalink USB sound card modem, headphones, microphone, miscellaneous cables, and a 20AH battery. In short, everything but my CW paddles, and antenna system will fit into this case. The CW paddle travels in a separate case. Since my hearing's not what it used to be, headphones are a must for me. Most of the time, I use an inexpensive set of Skullcandy phones that I picked up when Radio Shack went out of business. If I'm planning a longer activation, I pull out one of the Heil headsets.



The battery is a 20AH LiFePO4 that I purchased a couple years back from John, KB8UHN. It supplies me with more than enough power for most days on the road.

Kudos to Heil, by the way. My well-used Pro-set failed on me last spring. I finally was able to send it out for repair this month. For the cost of repair, it came back in about 10 days, with a new pro-set in the box. How's that for service?

My antenna analyzer took a tumble to the ground last month, busting the display. Thanks for the quick service from DX Engineering, I am back in business. It will now be carried in a padded case while on activations.



For CW, I have a couple keys that travel with me. First is the Bencher BY-1 which I use on most of my activations. When I need something lighter, I break out the CW Morse lightweight key. It's a bit light for my tastes, but with weight measured in Ounces, It definitely has a place in my hiking gear.



I have several antennas in my arsenal; everything to the G5RV that I carry with me for camping, to my growing collection of Ham sticks, and everything in between. It's nice to have a good variety of antennas available when operating portable.



### Upcoming trips

As you are reading this, I'll likely operating with K8PRC from a cabin in Mohican State Park. We are participating in Winter Field Day from K-1977, as Mohican is referred to in the POTA universe. There's many advantages to this type of operation, but the big one is that being in a POTA park seems equivalent to adding a few S-Units to your signal. I hope you are able to get out and operating during that weekend.



## Young Ham Lends a Hand Contest - 2022

**Carole Perry, WB2MGP**  
Director RCA, Youth Activities



We want to reward a young ham who has volunteered to help an elderly person, a military person, his or her community somehow, or a young ham actively involved with recruiting other young people into ham radio. There's no red tape; it's just me and my RCA Youth Activities evaluating the application forms. You will smile to know that we have had high caliber and terrific young hams who get nominated every year.

I am still accepting nominees for this contest to encourage volunteerism in our young hams. Forms may be submitted up until April 1st. **The winner is usually announced at the Hamvention® Youth Forum.** A \$100 stipend is awarded to the winner.

This is sponsored by RCA and QCWA. Please contact me with any questions. All forms should be submitted to: [wb2mgp@gmail.com](mailto:wb2mgp@gmail.com)

=====

### Young Ham Lends a Hand Contest

Carole Perry WB2MGP [wb2mgp@gmail.com](mailto:wb2mgp@gmail.com)

Please fill in the following requests for information about your nominee for this year's contest.

Information about your nominee:

Name and call sign

Age

Address

Home Number and Cell number

Please fill in YOUR name, relationship to the candidate and contact info.

Please describe reasons why this nominee is deserving of the award that looks for a young ham who gives back to the community by participating and helping in local events, assisting the elderly, assisting military personnel, or is instrumental in recruitment and/or training of more young hams.

=====

### Youth Activities Program

The Youth Activities program is chaired by RCA Director Carole Perry WB2MGP and has Richard Somers, Stan Reubenstein, Gordon West and Charles Kirmuss as committee members.

A major event for the committee is to moderate and to sponsor the annual Dayton Youth Forum where RCA Young Achievers, age 18 and below, give presentations highlighting their technical abilities and enjoyment of radio.

The RCA Young Achiever is a youngster 18 and below who has demonstrated technical excellence and creativity in wireless communications. We are always interested in receiving nominations for these talented young people. Please contact Carole at [wb2mgp@gmail.com](mailto:wb2mgp@gmail.com) to nominate someone as a Dayton Hamvention® presenter or as a student deserving the RCA Young Achiever award.

We are also always interested in supporting schools, scout groups, and museums that incorporate radio/technology in their programs. Support can be in the form of books, equipment, or curriculum. Please contact Carole at [wb2mgp@gmail.com](mailto:wb2mgp@gmail.com) for further information.

The Youth Activities members travel across the country to speak at radio conventions, to moderate Youth Forums, and to vet large organizations enlisting our help in motivating and supporting young hams and in introducing wireless technology to school curriculum.

Tax deductible donations specifically to RCA Youth Activities can be made through the Richard G. Somers Youth Scholarship Fund. Please contact Carole at [wb2mgp@gmail.com](mailto:wb2mgp@gmail.com) for further information.

**FOR SALE**

**WANTED**

**FOR SALE**

**WANTED**

**FOR SALE**

**From the Estate of Terry Morris – KB8AMZ - SK**

**FOR SALE: Weller 921SX1 soldering station** this is definitely used in Fair condition. Asking \$25 or offer **Tri-Magnet Roof Mount** new in the box. NMO antenna mount, PL-259 on cable. Asking \$45 or best offer **Astron RS-20 power supply** used – puts out +13.8v (not tested under load) Asking \$45 or best offer All items are “cash and carry”. Any and all offers will be seriously considered, as we need to get this settled asap. “Offers” will be held until Feb 15<sup>th</sup> and then released to the best offer. All items are sold ”as is”. All money received will be sent to Terry’s sister to use for final expenses or to distribute to family per Terry’s wishes.



**Contact: Tom WB8LCD** email: [tomsly29@gmail.com](mailto:tomsly29@gmail.com) or call: 330-554-4650 [04/02/22]

**WANTED: 10 foot x 2 inch outside diameter mast pipe.** It must be 2 inch OUTSIDE diameter.

**Contact: Joe, K8HTB** email: [k8htb@cfsassociates.com](mailto:k8htb@cfsassociates.com) [02/02/22]

**FOR SALE: DX Engineering DXE-SWP8 Memory Keypad** for Kenwood, and ICOM new, never used. \$50.00.  
**Reconditioned Heath Kit SB-200 Amplifier** \$500.00 with new tubes.

**WANTED: Cheap 2M/70CM FM Mobile Transceiver.**

**Contact: Bob, N8QE** email: [rhajdak@aol.com](mailto:rhajdak@aol.com) [04/02/22]

**FOR SALE: Astron RS-50** power supply. 50 Amp supply, no meters - \$200.00

**Contact: Richard, KA8OAT** - phone 330-506-7068 [03/02/22]

**FOR SALE: Rick Tenan WA8TSI - SK Estate Items for sale. Complete Drake “B-Line” station in museum quality condition:** R4B Receiver, T4XB Transmitter with custom cover, MS-4 Speaker and Cabinet with custom cover, MN-2000 Tuner with custom cover, AC-4 Power Supply and connecting cables, Drake W4 wattmeter, Shure 444 Microphone, Items were serviced and brought up to top operating condition by Jeff Covelli. **\$1080.00 for the complete set. Separate items are not for sale.** Most manuals included. **Yaesu FT-990** HF Transceiver in excellent condition. MD-1 mic and manual included. \$675 **Kenwood TS-820** HF Transceiver in excellent condition with manual. VFO-820, SP-820 and MC-50 mic and connecting cables included. \$ 585 **Heathkit SB-1400** HF transceiver and SBA-1400 speaker/ps in mint condition. \$200 **Heathkit HX-30** 6 meter transmitter and HA-20 Amplifier in average condition. Includes Comair LM-6N2C 6 and 2 meter manual tuner in fair condition. \$400. **Heathkit HO-10** Monitor Scope in good condition. \$ 45. **Astron RS-50M** DC pwr supply in excellent condition. \$250. **Radio Shack 22-510** 25a switching power supply. \$75. **Allied-Radio Shack AX-190** HF ham band receiver in very good condition. \$100 **Siltronics (SWAN) FS-301** SWR meter with 1000w and 20w scales in good condition. \$45 **Radio Shack Pro-2044** Scanner. \$30 **Royce 2-100** Field Strength & SWR meter. \$15 **Midland 23-135B** Field Strength meter. \$10 **Lafayette Telsat SSB-75** SSB and AM transceiver. \$45 **Radio Shack HTA20** 2 meter mobile transmit amp. \$55. **DSI-5500** 50hz-512mhz frequency counter. \$55 **MFJ-260C** dummy load. \$40 **MFJ-1702** 2 position coax switch. \$35 **MFJ-945D** Mobile tuner. \$80 **MFJ-945E** Mobile tuner. \$115 **MFJ-949E** Deluxe Versatuner II. \$115 **“On the Air”** sign Large backlit. \$25 **RCI-5054** 6m SSB transceiver. \$170 **J-38 style straight key** mounted to heavy base. \$20 **CSH-A4S Beam** with optional A-744 driven element for 40 meters. It may need some adjustments. \$75. **Diamond X200** vertical for 2M and 70CM. \$100 **Ham IV rotator and controller.** \$450.

**Contact: Ken Starcher** at 330-475-2630

Leave a message if I am not available. All proceeds go to Pam Tenan. [03/02/22]

For Sale or Want Ad policy reminder: This is a PCARS *members only benefit*. Please don't ask to list items for a friend, relative or SK estate unless they are/were a member of PCARS. Requests come in from all over the USA (and beyond) to list items for sale or wanted items and we just cannot dedicate that much space to non-members. Listings are good for 3 months unless canceled or changed earlier. The date listed after the contact information tells you when the ad expires - example: [04/02/22] indicates the ad will run until April 2, 2022.



## PCARS Thursday 2 Meter Nets

**Greg, KA8TOA**  
Net Control Coordinator



Thank you all for helping with this! Anytime you are unable to take the net, please give me as much advance warning as possible! **Check-in using the receiver located in Sugar Bush Knolls ~ 146.895 with a PL tone of 118.8. We also use EchoLink node K8BF-L**

The net control dates will be posted on the Club website. An email will be sent out after the posting. As usual if there are issues please contact me via the roadrunner email address.  
**Thanks to all of you for helping out.**

For the 4th quarter of 2021 OCT, NOV, and DEC a total of 253 check ins for 12 weeks  
3 month weekly average of 20 check ins

Oct 4 weeks 85 check ins average 21 / Nov 3 weeks 67 check ins average 21 / Dec 5 weeks 101 check ins average 20  
2020 4th quarter 3 month weekly average of 26 check ins

We could use another net control volunteer always looking for some help. It is good training and not that hard, please let me know. Looking for a better year for the club and everyone of our members.

February	
3	K8YLK
10	KA8TOA
17	N8QE
24	KE8BWA

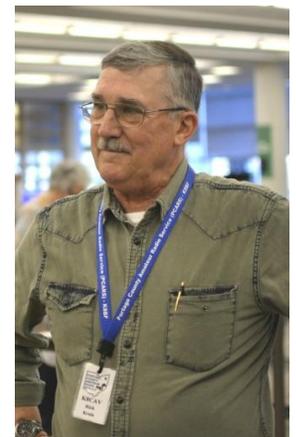
March	
3	N8WCP
10	WB8LCD
17	K8YLK
24	KE8BWA
31	KD8WCK

April	

The PCARS net is **BIG Fun** - tell your friends to check in via RF or EchoLink!

## Flex Net

**Rick, K8CAV**  
Flex Net Coordinator



PCARS will be holding the monthly Flex Net on Wednesday February 9th at 8:00 PM. This month the net will be a Digital Net using RTTY 45.45 baud 170 Hz shift, on 10 meters, 28.130 MHz Dial Frequency +/- QRM, USB. Set the cursor on your waterfall to 1,500 Hz.

This meeting will be a Zoom-only meeting, the link is:  
<https://us02web.zoom.us/j/88355094567?pwd=ZzRvd1hmQWNhYlZlZEcGFODVhuNINiQT09>

Meeting ID: 883 5509 4567      Passcode: PCARS2022

Digital nets make use of prosigns and Q signals to reduce the amount of typing. The February Digital Special Interest Group Zoom meeting on February 1st at 7:00 PM will be doing a presentation on the use of prosigns and Q signals for digital operations.

If you can't make the Zoom meeting, you can download an Adobe pdf of the presentation on the **PCARS groups.io** site. The file name is **Flex-Net-Digital-Operations.pdf**, and can be found in the Digital folder of the files section.

# Bouvet Island DXpedition News



The following was posted on the 3Y0J FaceBook page by **Ken, LA7GIA**, on **January 22nd**, with pictures and videos.

Today the 3Y0J team spent a full day offshore at Ulsteinvik, Norway .



Together with Captain Arnt Skinnes and his three crew members on Stero we tested the unmanned zodiak landing, where the purpose is to land zodiak with equipment in a safe way.

We drove 16 hours by car from Oslo to the 3Y0J test site. During the testing Stero ended up in rescuing a FRC boat drifting with broken engine in heavy sea. This cut short our testing a bit but further testing will be carried out in our mission to activate this rare #2 DXCC Bouvet Island. After a successful weekend we returned home and will continue working on the logistic concepts. Follow our journey to Bouvet!

For the pictures and videos, go to:

<https://www.facebook.com/groups/3093983840726129>

## PCARS Custom Coffee Cups - Limited Edition- Almost Gone

PCARS has obtained a limited number of special, custom made coffee cups that are available only to members.

### Portage County Amateur Radio Service



### 2018 Hamvention® Club of the Year

**Supply is limited.** If you are a current (PAID) member of PCARS you get one coffee cup for **FREE !!** The only catch is you have to claim it from the

**Treasurer - Greg, KA8TOA.** Greg has a list of current members and

will check off your name when you get your **FREE** PCARS coffee cup.



There are a **very limited number of extra coffee cups** and they are for sale at \$5.00 each.

**Contact Greg for all of the details: [Treasurer@portcars.org](mailto:Treasurer@portcars.org)**



# EZNEC is now FREE

**Want to learn antenna modeling? EZNEC is now free!**

EZNEC, the popular antenna-modeling software by Roy, W7EL, is now **FREE!** This might be a good time to learn antenna modeling. **EZNEC**, the very popular antenna-modeling software written by **Roy Lewallen, W7EL**, is now **FREE!**

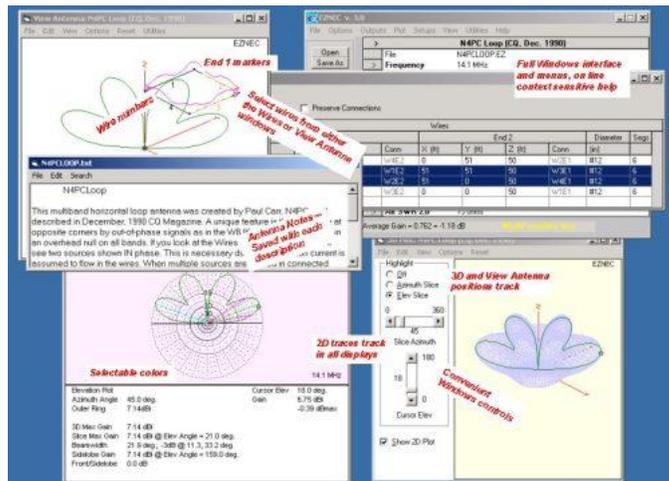
The EZNEC website notes:  
**EZNEC IS NO LONGER FOR SALE. IT IS FREE (see below) - THERE WILL BE NO SUPPORT OR REFUNDS**

The introduction of EZNEC Pro/2+ v. 7.0 has been unavoidably delayed. The estimated time of introduction is Jan. 14, 2022, but I'll do my very best to have it ready before then. It is now undergoing extensive testing and updating of the manual.

EZNEC Pro/2+ v. 7.0 will have all the features of EZNEC Pro/2 v. 6.0, plus extra features including wire loss for individual wires and the ability to run external NEC-4.2 and NEC-5 programs for calculation. Until EZNEC Pro/2+ v. 7.0 is available, you can download EZNEC Pro/2 v. 6.0 by clicking here:  
[Download EZNEC Pro/2 v. 6.0](#)

Roy also notes: *"I want to thank the many people who have sent encouraging and complimentary messages about my retirement. I'm very sorry I haven't been able to respond because my time has been intensely taken up in getting the new EZNEC Pro+ programs ready. I'll attempt to respond individually after the programs have been released. Watch the above page for the EZNEC Pro/2+ and EZNEC Pro/4+ announcement and other updates!"*

A fellow on Reddit writes, *"For those of you that have never modeled before, I highly recommend reading the four part introduction to antenna modeling written by L. B. Cebik (W4RNL). It appeared in QST a number of years ago and is available on the ARRL web site. <http://www.arrl.org/antenna-modeling>. Also, the help file for EZNEC contains a decent tutorial as well."*





**Paul, NISFE**  
From the ARRL

## Next QSO Today Virtual Ham Expo set for Mid-March

What's become a regular March event, the next [QSO Today Virtual Ham Expo](#) will be held live from March 12-13, and then on demand for 30 days afterward. More than 60 speakers will deliver presentations on their subject areas. "There's content for everyone whether a newly licensed ham looking for next steps to using that license or a 30+ year experienced ham looking for new projects," the QSO Today Virtual Ham Expo organizers promise.



Presentations will include "Core HF Communication Concepts: Fundamentals of Shortwave Propagation;" "Deep Dive of an FPGA DVB-S2 Implementation;" "Fun With the NanoVNA," and "Helically Wound Vertical for 160 Meters. The complete list of presentations is available from the [Virtual Ham Expo home page](#).

Virtual visitors may watch as many presentations as they want and return any time within 30 days to view speakers and presentations they may have miss as well as explore exhibitor offerings.

This Virtual Ham Expo will debut new technology that, organizers say, will "further improve the live video interaction experience with exhibitors and fellow operators." ARRL The national association for Amateur Radio®, is a QSO Today Virtual Ham Expo Partner. Early bird tickets go on sale on February 1. Tickets are \$10 through March 6.



## Extended ARRL Team Will Support February's ARRL National Convention in Orlando

An extended ARRL team of member-volunteers, program representatives, and presenters will advance the convention theme inviting attendees to "reDiscover Radio" at Orlando HamCation, host of the 2022 ARRL National Convention February 10 - 13. A [wide-ranging roster](#) of workshops, exhibits, and activities will educate and entertain radio amateurs committed to developing knowledge and skills in radio technology and radio communication.

The convention will be held in two parts. On Thursday, February 10, an all-day ARRL National Convention Program will be held at the DoubleTree by Hilton Hotel Orlando at SeaWorld. Advance registration is required and includes a series of day-long ARRL Training Tracks and a National Convention luncheon with a keynote address by ARRL CEO David Minster, NA2AA. The Training Tracks comprise four workshops led by experienced presenters: Contest University (CTU), Emergency Communications Academy, Hands-On *Handbook*, and Technology Academy. Registration can be completed [online](#).



[DX Engineering](#) is the Official Sponsor of the 2022 ARRL National Convention Program.

On Friday, Saturday, and Sunday, February 11 - 13, HamCation will take place at the Central Florida Fairgrounds and Expo Park in Orlando -- an 87-acre lakefront fairgrounds. The convention marks the 75th

anniversary of HamCation -- one of the largest annual gatherings of radio amateurs in the US. [HamCation tickets](#) can be purchased online until January 31 and at the gate during the event.

The centerpiece of ARRL's participation will be a large exhibit area in the East and West Hall. Nearly a dozen ARRL program areas will be represented, including Radiosport and DXCC Card Checking, Radio Clubs, the Amateur Radio Emergency Service<sup>®</sup>, Development, and the ARRL Foundation.

A suite of exhibits organized by the ARRL Education and Learning Department will include an introduction to the new [ARRL Learning Center](#). ARRL Education and Learning Manager Steve Goodgame, K5ATA, will introduce this new member benefit that includes online courses, videos, and other amateur radio instruction and training. At another booth, ARRL Education and Technology Program Instructor Tommy Gober, N5DUX, will cover the ARRL Teachers Institute on Wireless Technology.



**Josh Nass, KI6NAZ, of the popular "Ham Radio Crash Course" is one of the YouTube content creators who will present at the Convention.**

ARRL has invited several ham radio content creators from popular YouTube channels to meet and interact with attendees in the exhibit area. Josh Nass, KI6NAZ, of the popular "Ham Radio Crash Course" YouTube channel, will moderate. He is the 2020 winner of the ARRL Bill Leonard Award for outstanding published media that advances amateur radio. Visitors will have a chance to meet ARRL authors and editors.

ARRL Laboratory engineers and volunteers will offer free testing of visitors' handheld radios. This service will determine the spectral purity of the output signal from the radios. Members and other attendees can meet ARRL elected officials and Field Organization volunteers at the Southeastern Division booth to catch up on events and to explore opportunities to get involved through their ARRL Sections and radio clubs.

The exhibit area will also include the ARRL store and membership area, where visitors may join, renew, or extend ARRL and [Diamond Club](#) memberships and purchase publications, apparel, and 2022 Field Day products. New ARRL Membership Manager Matt Caruso will be eager to meet and greet members.

### **ARRL will sponsor three forums at HamCation:**

- An ARRL Emergency Communications Panel will be held at 3:15 PM Eastern on Friday. The panel will be moderated by ARRL Director of Emergency Management Josh Johnston, KE5MHV, and will include panelists from the ARRL Southeastern Division Field Organization.
- On Saturday at 2 PM Eastern, ARRL Collegiate Amateur Radio Advisors Andy Milluzzi, KK4LWR, and Tony Milluzzi, KD8RTT, will lead a Collegiate Amateur Radio Forum. The ARRL [Collegiate Amateur Radio Initiative](#) is a regular networking source among active campus radio clubs and their student members.
- An ARRL Membership Forum will be held on Saturday at 3:15 PM, moderated by Southeastern Division Director Mickey Baker, N4MB. This forum offers an opportunity to hear from ARRL representatives on key areas of member interest and amateur radio advocacy and to learn how ARRL supports dozens of ways to get involved and active on the air. Panelists will include President Rick Roderick, K5UR, and CEO David Minster, NA2AA.

The exhibit area will also include the ARRL store and membership area, where visitors may join, renew, or extend ARRL and [Diamond Club](#) memberships and purchase publications, apparel, and 2022 Field Day products.

The Orlando Amateur Radio Club sponsors Orlando HamCation. Further details about the convention are available at [www.arrl.org/expo](http://www.arrl.org/expo) and [www.hamcation.com](http://www.hamcation.com). Read [an expanded version](#).

=====

## Ohio ARES VHF Simplex Contest Helps Operators Plot Coverage Areas

Ever wonder how far you can reach on VHF/UHF frequencies? On January 8, from 10 AM to 4 PM, Ohio ARES members answered that question. It was the *ARES Ohio VHF plus Simplex Contest*, with all amateurs having been invited. Bands used were 6 meters, 2 meters, and 70 cm. Entry categories were Fixed, EOC, and Rover. Bonus points were given out by ARES officers (AEC, OES, EC and above). Complete [rules, submission forms, and other pieces of information](#) were promulgated. Participants entered their operating plans on the website. W8SGT was in operation from the Ohio state EOC this year. It's a contest with a purpose: ARES and other operators plot their simplex coverage area to know where they could dependably communicate on simplex during an emergency.

### Results

[Stan Broadway, N8BHL, Ohio Section Emergency Coordinator](#), reported on the results: Forty-eight logs were submitted, including five from the Rover stations. On average, eight counties were contacted by each station, with two reporting 18 counties worked, one Rover reporting 22 counties worked, and one fixed station reporting a whopping 34 counties contacted. Thirteen stations reported contacting double-digit counts of counties.

Joe Wigal, W8JTW, was heard across the state - he operated from the N8OJ tower site in Washington County with a 2 meter antenna height of 190 feet, and 280 watts of RF output. He also worked the 6 meter antenna with a height of 150 feet and 100 watts. Wigal worked 27 Ohio counties and seven in West Virginia for a total of 34 counties. He worked eight of the 10 Ohio ARES Districts, and five of the 10 West Virginia ARES Districts. His furthest contact was 163 air miles on 2 meter FM. He said, "Was fun, looking forward to next year."

### Soapbox

"I was operating fixed and it was fun to follow the Rovers to various counties. I made contacts with Rovers in six counties." "First time participant. Nice way to spend a Saturday afternoon monitoring 2m, 6m, and giving points to the Rovers and fixed stations I could hear and get back to." "Great participation in northwest Ohio. Worked five Rovers! Furthest contact was 107 miles on 6 meter FM. Had a great time, lots of really good operators in our area!" "It was lots of fun, taught me a lot about my equipment, working through pileups and propagation challenges, making new friends and connecting with old ones and more." "I operated as a Rover in Mahoning, Trumbull, Portage, and Summit counties. Another excellent event this year, thanks to all who helped organize and participate!"

=====

### OPERATING TIP

Bob Witte, K0NR, shared an article on his web site - [What is a Valid QSO?](#) The article begins by explaining what makes up the elements required for a valid QSO. The article then looks into specific contest, weak signal, and digital mode QSOs and the challenges that each present in acknowledging that the QSO information has been properly exchanged. (Editor's note: That article is reprinted here in **The RADIOGRAM** - see page 12)

Until next time, be sure to stay warm!. Remember to send contesting-related stories, book reviews, tips, techniques, press releases, errata, schematics, club information, pictures, stories, blog links, and predictions to [contest-update@arrl.org](mailto:contest-update@arrl.org).

=====

## Digital Special Interest Group

**Rick, K8CAV**  
Digital SIG Coordinator



The next PCARS Digital Special Interest Group meeting will be on Tuesday February 1st at 7:00 PM.

This meeting will be a Zoom-only meeting, the link is:  
<https://us02web.zoom.us/j/88355094567?pwd=ZzRvd1hmQWNhYlZEcGF0dVhuNlNiQT09>

Meeting ID: 883 5509 4567  
Passcode: PCARS2022

This month we will review procedures, prosigns, and Q signals used on digital-only nets in preparation for the February Flex net, which will be a digital-only net using RTTY. As always, we'll be available to answer any questions or help with any issues you may have regarding digital communications.

## Portable Ops Special Interest Group

**John, WG8X**  
Portable Ops SIG Coordinator



Hi everyone, the portable operations SIG will be Zoom only again this month. We'll be discussing all manner of portable gear, and operating.

Stop by, you never know what we may be discussing. We'll be entertaining your show & Tell, and questions.

We'll be meeting on February 8<sup>th</sup>, at 7 PM via Zoom. Here's the link:

Join Zoom Meeting

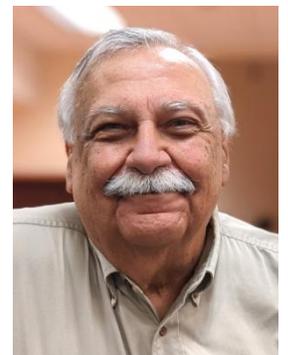
<https://us02web.zoom.us/j/89732195744?pwd=cldtZmxMcmFqQndhQWtJN0s2NUNnUT09>

Meeting ID: 897 3219 5744

Passcode: PCARS2022

## DX and Contest Special Interest Group

**Chuck, W8PT**  
DX & Contest SIG Coordinator



### **Hello PCARS Members:**

On Tuesday, January 25th, we held our DX/Contesting Special Interest Group meeting by ZOOM. I'd like to thank those who took the time to attend.

We reviewed the upcoming contests for February, noting that this month is the start of the year long State QSO Party season as well as the State QSO Party Challenge. In February, the Vermont, Minnesota, British Columbia, and the North Carolina QSO parties take place. We also pointed out that the NA Sprint - CW mode, the CQ WW RTTY WPX Contest,

the ARRL International DX contest - CW mode, and the NA QSO Party - RTTY mode contests, take place. Some of those attending mentioned that they would likely be participating in the RTTY contests.

I announced that I was preparing a presentation that I am calling, Contesting 101, which I will give on a date yet to be announced. But it should be in the next few months. I will let you all know the date of course. This will be a simple nuts and bolts presentation for those either new to contesting or thinking of dipping their toe in the contesting waters. I am not claiming to be an expert here, but I've been around for a while now and have been contesting for a number of years and I think I have a few nuggets to offer. I'm sure that others who will be attending, and have contesting experience, will offer their words of wisdom also.

Joe, W8KNO, notified me that those PCARS members who participated in the State QSO Parties in 2021 AND entered their scores on 3830Scores.com, ended up compiling over 200K points for the club. We finished 31st out of 2064 entries and 85th in total score. Coincidentally, Mike, N8WCP, our illustrious VP, was able to have PCARS listed in the pull down menus so that when you go to list your scores, all you need to do now is go to the club name pull down menu and you will find us listed. You can list many contest scores on 3830Scores.com. Take a look and list your scores there from now on. Thank you Mike!

We ended up having a lively discussion regarding FT8 and its impact on some of the contests, especially the VHF contests. A fun time was had by all. But in the end, we acknowledged that FT8 is here to stay and does have merit as a mode of communication.

Again, I want to thank those who took the time to attend and look for more PCARS members to show up for the February 22nd meeting. Until then, 73 and gud DXing and contesting.



please select all squares with  
**220Ω resistors**

Please select all matching images.

⏪ 🔊 ⓘ

VERIFY



## Charlie the Tuner's HF High-Lites

**Chuck, W8PT**  
a.k.a. "Charlie the Tuner"



### Greetings DXers

### Charlie the Tuner's DX High-Lites – February 2022

Well, one down and 11 to go. I hope you had a very enjoyable New Year's and a safe one at that. If you have been on the air and listening to HF, you will have seen the bands open for all modes. Certainly FT8, JT65 and other digital modes have been very active. But SSB and the oldest digital mode, CW, have had their share of good propagation lately. Cycle 25 has been making itself known. Maybe not in a loud way, but it appears that some believe it will be much stronger than anticipated. Looking at the graphs that some folks are doing, it appears they may be correct. Let's hope so, but any sunspot activity is better than none.

And to those who predicted a Maunder Minimum, all I can say is **RASPBERRIES** to you. Let me wipe down my monitor so I can continue.

I am presently looking at my RF Scope and 20m is hopping. South Africa is a daily event and Australia long path seems to follow suit. The Mid East is also making a regular showing both SSB and digital. Signals have been very strong from South America and the Caribbean. I'm not sure how long he will be ARV, but Scott, WA5A has been QRV from Kenya using the call **5Z4/WA5A**. He was 20/9 yesterday on 20m. All I have to say is get on the air, please.

With the number of DX items you will find listed below, it is obvious that things are ramping up. Let's take a look....

**Thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, the AB5K's AR Cluster Networks, NJ1Q & W1AW, NG3K & ADXO, W3UR & The Daily DX, W4VQ, K8YSE, W8GEX & 60m DX News, W0GJ, 4L2M, DL1SBF, DL7UXG & The DX News Letter, DM7MA, DXNews.com, DX-World.Net, F6AJA & Les Nouvelles DX, F6EXV, F8DVD, I1JQJ/IK1ADH & 425 DX News, LA4LN, Sixitalia Weekly and VA3RJ & ICPO for the following DX information.**

And as always, this report "could" contain "Pirate/SLIM" operation or more likely a "BUSTED CALLSIGN". As always, you never know, so..... - "**Work First, Worry Later**".

**PLEASE NOTE:** The fact that donation requests, from various DXpeditions, are at times included in this column does not mean that PCARS or this HAM approves or disapproves of donating to the DXpeditions listed. I am only providing information for you to make up your own minds as to whether or not to donate.

### February...

**3B8, MAURITIUS.** Slavo, SP2JMB, and his XYL Dorota/SP2TO will be active as 3B8GY from Mauritius Feb 5-25th. Last activity was in 2011. Operations will be on various HF bands and modes. QSL via SP2JMB direct.

**3Y0J BOUVET ISLAND DXPEDITION NEWS.** Members of the 3Y0J team were on the DX Engineering YouTube Channel (January 14th) with Tim, K3LR. Members Otis/NP4G and Dave/WD5COV were live to discuss the latest on the 3Y0J Bouvet Island Dxpediton! (<https://www.3y0j.no/>) To view this "DX Engineering Weekend Special" video which is just under 30 minutes long, go to: [https://www.youtube.com/watch?v=L--Okf\\_EnE](https://www.youtube.com/watch?v=L--Okf_EnE)

**6W, SENEGAL.** Jacques, F6HMJ will be QRV as 6W7/F6HMJ until February 22, 2022. Activity will be on 40 to 10 meters using CW and SSB. QSL to home call.

**6W, SENEGAL.** Willy, ON4AVT, will be active as 6W7/ON4AVT from Warang between February 6th and April 10th. Activity will be on 80-10 meters using SSB and the Digital modes, with an IC-7100 into End-Fed wire or Double Zepp antennas. There will also be QO-100 satellite operations. QSL via ClubLog's OQRS.

**8Q, MALDIVES.** Henry, LU4DXU, will be active as 8Q7AH from Dharavandhoo Island (AS-013) between February 8-15th. Activity will be on various HF bands using an amp and dipoles. QSL via his home callsign direct.

**8Q, MALDIVES.** Operators Karel/OK2WM and Vlad/OK2WX will be active as 8Q7WM and 8Q7WX, respectively, from Innahura Island (AS-013) between February 12th and March 8th. Activity will be on 160/80/40 meters using CW and SSB. QSL via their home callsigns.

**9J, ZAMBIA.** Reminder - Mario, IZ3KVD, is once again active as 9J2MYT from Lusaka (WW Loc. KH44DO), and will be there until June 2022. Activity will be on 40/20/17/15/10 meters SSB using a Yaesu 897D into a homemade vertical and a long wire antenna. He was heard this past week on 20/15 meters SSB between 1500-1645z. QSL via IZ3KVD direct only. QSL will be printed after his return to Italy.

**D4, CAPE VERDE.** Oliver, DJ5QW, will be active as D4CW and D44DX from Santa Maria village, Sal Island (AF-086), Cape Verde, between February 19th and March 2nd. Activity will be on 80-10 meters using CW and SSB. QSL via his home callsign or by the DARC Bureau.

**EH5, SPAIN (Special Event).** Jose, EA5N, active as EH5AAW (WAP-342) from Denia during the 19th Antarctic Activity Week (AAW) between February 18-27th. QSL via EA5N, by the Bureau, direct, ClubLog or LoTW.

**EI90, IRELAND (Special Event).** Members of the Irish Radio Transmitters Society (IRTS) will activate the special callsign EI90IRTS to mark 90<sup>th</sup> anniversary of the founding of their organization. The IRTS was formed in 1932. The EI90IRTS callsign will be used throughout 2022. QSL via EI6AL.

**GB1900, ENGLAND (Special Event).** Operators Austin/M0MNE and Roy/M0TKF will activate two special event stations GB1900HA and GB1900HW from their locations near the Hadrian's Wall (a UNESCO World Heritage Site) throughout the year 2022. Activity is to commemorate 1900th anniversary since the building of Hadrian's Wall, the Northern frontier of the mighty Roman Empire and which was the inspiration for the Wall in George R.R. Martin's "Game of Thrones". Operations will be on the HF and VHF bands using CW and the Digital modes. The special event station is officially part of the Hadrian's Wall 1900 Festival (January 24th-December 23rd) where hundreds of events and activities will be taking place in a yearlong festival across Hadrian's Wall. QSL via LoTW and ClubLog's OQRS.

**KH7, HAWAII.** Jim, N6TJ, will once again use the callsign KH7Q (OAHU CQ Contesting Club callsign) during the ARRL DX CW Contest (February 19-20th) as a Single-Op/All-Band entry. QSL via KH7U.

**KP2, U.S. VIRGIN ISLANDS.** Jaime, WP3A, will be active as KP2B from Christiansted, VI, during the ARRL International DX CW Contest (February 19-20th) as a Single-Op/All-Band entry. QSL via EB7DX.

**HS0, THAILAND (Reminder).** Lars, SM6NT, active as HS0ZME from Hua Hin until April 5th (2022). Activity will be on 40-10 meters using CW. View his setup on QRZ.com. QSL via his home callsign, direct or by the Bureau.

**I12, ITALY (Special Event).** The special event callsign I12IDT will be activated to commemorate the 10th anniversary of the founding of the Italian DXpedition Team (IDT). All radio amateurs and SWLs worldwide will have a chance to win special prizes and personalized awards during the period between 00:00 UTC, Feb 5th and 23:59 UTC, Feb 13th.

**JA, JAPAN,** Tashi, JR2TER is QRV as JR2TER/p from Yonaguni Island, IOTA AS-024, until March 2022. Activity is on the HF bands using FT8. QSL via LoTW.

**JA, JAPAN.** Take, JI3DST is QRV as JI3DST/5, JJ5RBH, and JS6RRR/5 from Shodo Island, IOTA AS-200, until February 24. Activity is on 160 meters to 70 centimeters using CW, SSB, RTTY, FM, and FT8. QSL to home call.

**JD1/O, OGASAWARA.** Sam, JE1XUZ, active as JE1XUZ/JD1 from Chichi Jima between Feb 12-15th. Activity will be limited to his spare time, but his operations will be on CW, SSB and FT8, using an IC-7300M with 50 watts into an FC-700+Long wire. QSL via JE1XUZ, direct, by the Bureau or LoTW. Log will be uploaded to LoTW and ClubLog.

**K9/W9, UNITED STATES (Special Event).** Members of the National Trail Amateur Radio Club will be active as K9L and W9L from Lerna, IL, between February 7-14th. Activity is to celebrate President Abraham Lincoln's birthday and will be on all bands and modes. The W9L callsign will only be used on location at the farm owned by President Lincoln's father and stepmother. A special QSL card can be obtained by sending a SASE to: NATIONAL TRAIL AMATEUR RADIO CLUB INC - Attn: Lincoln Birthday - PO BOX 903 - Effingham, IL 62401

**ON75, BELGIUM (Special Event).** The Belgian IARU society UBA is celebrating its 75th anniversary. To celebrate this event, 64 different special event stations will be active from until Feb 28th. Each special event station will be using the prefix ON75 followed by a three letter suffix. Awards for working both a specific number of different ON75 stations and/or working ON75 stations in various band/mode slots are available. Paper QSL cards will only be sent exclusively using OQRS (Online QSL request) via Clublog, either via Bureau or direct.

**OX, GREENLAND.** Operators Mikkel/OZ7AKT (OX7AKT) and Alex/OZ7AM (OX7AM) will do a quick operation from Kangerlussuaq (NA-018, WW Loc. GP47TA) between February 17-22nd. Look for OX7AM in the ARRL Inter. DX CW Contest (February 19-20th) as a Single-Op/All-Band entry. QSL OX7AM via OZ1ACB, direct, by the Bureau, LoTW or Clublog's OQRS. QSL OX7AKT via OZ1ACB, direct, by the Bureau, LoTW or Clublog's OQRS.

**PA75, THE NETHERLANDS (DXCC Special Event).** Wino, PA0ABM, will be active as PA75DXCC from Huijbergen between February 3rd and August 2nd. Logs will be uploaded to LoTW, eQSL, QRZ and Clublog' OQRS. Activity is in celebration of the first Postwar DXCC members. The first DXCC members list did appear in July 1947, of QST, page, 64. The list showed only 9 members. For more details and history about DXCC, see QRZ.com.

**PACIFIC DXPEDITIONS TOUR.** William "BJ", WA7WJR, to activate the following islands: **Guam** as KH2/WA7WJR/P during March and **Tinian/Saipan** as KH0/WA7WJR/P during April/May. Activity depends on COVID protocols for arrival by private yacht. He states, "If CNMI (Commonwealth of the Northern Mariana Islands) still requires a 7-day quarantine this DXpedition will be postponed or canceled." BJ also mentions that his operation will be "CW (primarily), FT8 and RTTY. (Sorry no phone at this time.)" Operations will primarily be on 40 meters, 20 meters, occasionally 17 meters and 15 meters. QSL via his home callsign or LoTW.

**PJ7, ST. MAARTEN ISLAND.** Tom, AA9A, will once again be active as PJ7AA from Sint Maarten (NA-105) between February 26th and March 26th, 2022. Activity will be on 80-10 meters using CW, SSB and FT8. QSL via his home callsign, direct, LoTW or ClubLog's OQRS.

**PZ5, SURINAME.** Axel, DL6KVA, active as PZ5KV from Suriname Feb 1-10th. Activity on various HF bands using CW only. He will also participate in the FOC Marathon (Feb 5-6th). QSL via Club- Log's OQRS (direct and Bureau).

**R250, EUROPEAN RUSSIA (Special Event).** Members of the Vladimir Regional Radio Club will be active with special event callsign R250SM until February 27th. Activity is to commemorate 250th anniversary of the birthday of Count Mikhail Mikhailovitch Spiranskiy a Russian statesman. Operations will be on various HF bands and modes. QSL via RK3VWA. A commemorative diploma will be available with the R250SM.

**TM19, FRANCE (AAW Special Event).** Francois, F8DVD, will activate the special event station TM19AAW from Macon, France, during 19th Antarctic Activity Week (AAW) between February 7-22nd. QSL via F8DVD, by the Bureau, direct (w/SAE and one "new" IRC or 2 USDs) or LoTW.

**TU, CÔTE D'IVOIRE (Czech DXpedition).** Operators Petr/OK1BOA, Petr/OK1FCJ and David/OK6DJ will once again be active as TU5PCT from the Radio Club ADRASEC RCI in Abidjan, Côte d'Ivoire (Ivory Coast), between February 7-12th (limited/building up February 5-6th; dismantling on February 13th. Activity will be on 160-6 meters using CW, SSB, RTTY and FT8. Suggested frequencies are: CW - 1832, 3545, 5353, 7032, 10105, 14025, 18079, 21025, 24903 and 28018. SSB - 3790, 7185, 14185, 18150, 21280, 24935 and 28450. RTTY - 3563, 7045, 10142, 14080, 18099, 21080, 24911 and 28080. FT8 - 1840, 3563, 5357, 7071, 10144, 14090, 18108, 21091, 24923 and 28080. 6m - 50095/CW, 50150/SSB and 50313/FT8. QSL via OK6DJ, ClubLog's OQRS or LoTW.

**V3, BELIZE.** Operators Robert/K5PI (V31AT), John/WC0W (V31TP), Madison/W5MJ (V31IT), Karl/AD0KH, Nancie/NM0C, Leigh/WC0T, Steve/WW0G and Keith/VE7KW active as V3T from San Ignacio, Belize, during the ARRL International DX CW Contest (Feb 19-20th) as a Multi-Single/Low-Power entry. QSL V3T and V31TP via WC0W or LoTW (no ClubLog). Look before and after the contest by the operators. They will mostly focus on CW and on the 30/17/12 m bands. QSL V31IT via M0URX or OQRS. QSL V31AT via K5PI, direct, by the Bureau or LoTW.

**VP2M, MONTSERRAT.** Thaire, W2APF is QRV as VP2MDX until February 18. He is active on 80 to 10 meters using CW and SSB. QSL to home call.

**YB0, INDONESIA.** Pri, YB0ECT, from Jakarta, will be active during the ARRL International DX CW Contest (February

19-20th) as a Single-Op/ Single-Band (20m)/High-Power entry. QSL via W2FB only!

**YB, INDONESIA.** Yohanes, YB2DX, will be active in the ARRL Inter. DX CW Contest (February 19-20th) as a Single-Op/All-Band entry. QSL via LoTW or direct only.

**Z6, KOSOVO.** Rene, DL2JRM, will be active as Z66BCC from Gjilan (WW Loc. KN02rn) in February (specific dates were not provided). Activity will be in the CQ WPX RTTY Contest (February 12-13th). QSL via DL2JRM (by the Bureau or direct).

**ZF, CAYMAN ISLANDS.** Jim, WB2REM, is now active as ZF2OO from the Grand Cayman Islands (NA-016) until January 2023. Activity will be holiday style on 80-10 meters using mostly FT8/FT4 as well as some SSB and CW. QSL via WB2REM, direct (w/SASE), LoTW or ClubLog's OQRS. No Bureau. See QRZ.com for further details.

### March...

**8Q, MALDIVES.** Nobby, G0VJG, will once again be active as 8Q7CQ between March 4-18th. This will be his third trip there, but this time he will be active from the Island of Innahura (AS-013). Activity will be on 80-10 meters (this now includes 60m) using SSB and the Digital modes. He plans to participate in the ARRL International DX SSB Contest (March 5-6th). His equipment will be a FT-450D or FT857 with a JUMA 1000 watt amp into HF6V Butternut vertical for the HF bands and a link dipole. QSL via M0OXO's OQRS or direct.

**DF90/DK90/DL90/DM90/DR90/DQ90/DP90 & HB90, GERMANY AND SWITZERLAND** (Special Event). Gert, DM7MA, and a crew of operators will activate the following special event stations between March 1st and June 30th: DF90TJU, DK90TJU, DL90TJU, DM90TJU, DR90TJU, DQ90TJU, DP90TJU and HB90JU. Activity is to celebrate the 90th anniversary of the maiden flight of the Junkers JU52/3m (transport aircraft).

**FO/A, AUSTRAL ISLANDS,** Jacek, SP5EAQ, will be active as FO/SP5EAQ from Rimatara Island (OC-050, WW Loc. BG37oi) between March 2-30th, 2022 (if the pandemic permits). This will be a SSB operation on various HF bands as well as the CQWW WPX SSB Contest (March 26-27th) signing with the special callsign TX5AQ. QSL via SP7DQR.

**J6, ST. LUCIA.** Operators Frans/J69DS, Dr. Bill/K9HZ (J68HZ), Mike/KA4RRU, Kyle/WA4PGM, and Daniel/W0CN will be active as J68HZ from the Villa Grand Piton in Soufriere, St. Lucia (NA-108, WLOTA L-1336) between March 1-7th. Activity will be on 160-10 meters during the ARRL Inter. DX SSB Contest (March 5-6th) as a Multi-? entry. QSL via K9HZ, direct, ClubLog or LoTW (preferred). NO BUREAU CARDS. ADDED NOTE: Currently, Dr. Bill/K9HZ (J68HZ) and Barry/K8SD are active from the J68HZ villa until February 8th.

**KP2, U.S. VIRGIN ISLANDS.** Operators David/EB7DX, Jimmy/KP2BH and Jaime/WP3A will be active as KP2B during the ARRL International DX SSB Contest (March 5-6th) as a Multi-Single entry. QSL via EB7DX.

**NH7, HAWAII.** Operators Jim/N6TJ, John/KH6SH, Chuck/K7JA, Kimo/KH7U will be active as NH7T from the KH6YY station in Haleiwa, HI, during the CQ WPX SSB DX Contest (Mar 26-27th) as a M-M entry. QSL via KH6SH.

**PF01, THE NETHERLANDS (Special Event).** Frans, PC2F, will be active as PF01MAX during each racing weekend between March 20th and November 20th, during the Formula 1 2022 season. A detailed schedules is available on QRZ.com. QSL via PC2F, direct, by the Bureau, eQSL or LoTW.

**PJ2, CURACAO.** Operators Chuck/AD4ES, Don/AF4Z, Stephen/AK4R, Vincent/K4JC, Walter/K5LD, Peter/K8PGJ, Daniel/N1ZZ, Greg/N4EN and the PJ2T contest station owner and host Geoff/W0CG (PJ2DX) will be active as PJ2T from the Caribbean Contesting Consortium's (CCC) Signal Point contest station on Curacao Island (SA-099, WLOTA 0942) during the ARRL DX SSB Contest (March 5-6th) as a Multi-Op entry. QSL PJ2T via W3HMK. Operators will be there March 1-7th, and will use their own callsign (PJ2/homecall) outside of the contest. Activity will be on 160-10 meters using CW, SSB and FT8/FT4. Listen for QSL info or via their home callsign.

**PJ7, SINT MAARTEN.** Ed, WA1ZAM/N2HX, has tentative plans to once again be active as PJ7PL from the Cupecoy, Sint Maarten Island (NA-105), usually a week before and a week after a contest. However, plans may change due to the Covid situation. His activity will include operations in the ARRL International DX SSB Contest (March 5-6th) as a Single-Op/Low-Power entry. Outside of the contest, activity is usually holiday style on 30-10 meters using SSB, RTTY, FT4 and FT8 -- depending on what he brings down. QSL via N2HX or WA1ZAM.

**VP5, TURKS AND CAICOS ISLANDS.** Dave, K0KQ, will be active as VP5/K0KQ from Grand Turk Island (NA-003, WW Loc. FL41kl) between March 7-21st. Activity will be on various HF bands using FT8, with an IC-706 into an End-Fed vertical wire in a palm tree. QSL via LoTW; no paper QSLs.

**VX2, CANADA.** Members of the Contest Group du Quebec will be active as VX2X during the CQ WPX RTTY Contest (February 12-13th) as a Multi-Multi/ Distributed entry. QSL via LoTW only.

**ZF, CAYMAN ISLANDS.** Pete, K8PGJ, who was active as ZF2PG from the Sunny Isle of Grand Cayman (NA-016) this past weekend for the NAQP SSB Contest, will be active again between March 25-27th, for the CQ WPX SSB Contest (March 26-27th). Activity will be on 160-10 meters. QSL via LoTW.

**ZZ165, BRAZIL (Special Event).** Look for the special callsign ZZ165IBI to be used in commemoration of the 165th anniversary of "Estancia Turistica de Ibiuna City" and will be on the air between March 1-31st. Ibiuna is located about 60 km west of Sao Paulo city. A digital certificate will be available for all stations who log ZZ165IBI. Details will be on QRZ.com. QSL via PU2SWB. eQSL will be also available.

## IOTA News...

**AS-024.** Tashi, JR2TER, active as JR2TER/P from **Yonaguni Island** until sometime Mar 2022. Most activity has been on 10 m FT8, but he has also been on 160/40/17/12m. QSL via eQSL, LoTW (DX only), by the Bureau and ClubLog.

**AS-200.** Take, JI3DST, will once again be active as JI3DST/5 (mainly for DX and 6m Multi-Hop) [not use JI3DST/P for FT8], JJ5RBH (mainly for DX and JA) [without /P or /5, Fix QTH] and JS6RRR/5 (mainly for JA, JS8RRR/P for FT8) from **Shodo Island (Shikoku's Coastal Islands)** until 0000z, February 24th. Operation may vary due to heavy rain or other conditions. Activity will be on 80/40/30/20/17/15/12/10/6/2m meters (and 70cm) using CW, SSB and FT8 (possibly FM/RTTY). QSL JI3DST/5 via ClubLog's OQRS, LoTW, direct or by the Bureau\*. QSL JJ5RBH via ClubLog, LoTW or Bureau\*. QSL JS8RRR/5 via ClubLog, LoTW or Bureau\*. \*NO need to request by OQRS.

**NA-249.** (Update) Members of the Radio Operadores del Este (RODE) will be active as KP3RE from from Vieques Island between February 25-27th, 2022. Activity will be on all HF bands and modes plus the satellites. Suggested frequencies are: CW - 3675, 7025, 10105, 14025, 18085, 21025, 24890 and 28025 kHz. SSB - 3795, 7190, 14195, 18145, 21295, 24945 and 28490 kHz. FT8 - 3567, 7056, 10131, 14090, 18095, 21091, 24911 and 28091 kHz. FT8 will be in the DXpedition mode. The team states that they will start on a simplex frequency then switch to split 5-10 kHz UP or DOWN. Satellite operations will be on the FM and Linear Satellites (from WW Loc. FK78). QSL via EA5GL.

That's what I have now. As I've done in the past, if something of great interest comes up during the month, I will send out a separate announcement. Please use your license privileges and get on the air. Let's work together to keep our allotted frequencies for our great hobby. **Until next month - 73 and Gud DX....**

## PCARS IO Group

Members are reminded that PCARS has a IO Group site dedicated to PCARS. It's a great site to sign up for and get on the mailing list for important PCARS information.

Check out the PCARS IO Group at:  
<https://groups.io/g/PCARS>

### *Two things every member should do.*

1. Check the PCARS web site every day, maybe a couple of times a day, to see new info that's posted.
2. Join the PCARS IO Group. That's a great place to post message when you are looking for information or have a question about something. Try it - you just may like it!!



Groups Find or Create a Group <https://groups.io/g/PCARS> Help Log In

Home Messages Hashtags

**PCARS K8BF**  
The Club that puts the FUN in Ham Radio!

PCARS@groups.io  
Group Description  
This is the discussion group of The Portage County Amateur Radio Service, Inc. This site is for the members, by the members of PCARS.

Group Information  
59 Members  
1 Topic, Last Post: Feb 21  
Started on Feb 21  
Feed

Group Settings  
All subscribers can post to the group.  
Posts to this group require approval from the moderators.  
Posts from new users require approval from the moderators.  
Messages are set to reply to group.  
Subscriptions to this group do not require approval from the moderators.  
Archives are visible to anyone.  
Wiki is visible to subscribers only.  
Members can edit their posts.  
Members can set their subscriptions to no email.

# Solar Storm and the Solar Cycle

LIVESCINCE

Brandon Spektor



## Ancient solar storm smashed Earth at the wrong part of the sun's cycle and scientists are concerned

The 9,200-year-old storm left researchers with a stark conclusion: We are not ready for the next one.



A massive solar flare (or coronal mass ejection) erupts out of the sun in 2017. (Image credit: NASA)

An extremely powerful solar storm pummeled our planet 9,200 years ago, leaving permanent scars on the ice buried deep below Greenland and [Antarctica](#).

A new study of those ancient ice samples has found that this previously unknown storm is one of the strongest outbursts of solar weather ever detected and would have crippled modern communications systems if it had hit [Earth](#) today.

But perhaps most surprising, the massive storm appears to have hit during a solar minimum, the point during the sun's [11-year cycle](#) when solar outbursts are typically much less common, according to the study, published Jan. 11 in the journal [Nature Communications](#). Because of this unexpected discovery, the study researchers are concerned that devastating solar storms could hit when we least expect them - and that Earth might not be prepared when the next big one arrives.

*"These enormous storms are currently not sufficiently included in risk assessments," study co-author Raimund Muscheler, a geology researcher at Lund University in Sweden, said in a [statement](#). "It is of the utmost importance to analyze what these events could mean for today's technology and how we can protect ourselves."*

### When stars attack

Solar storms occur when [magnetic field](#) lines on the sun's corona (the outermost part of the sun's atmosphere) become tangled up and then violently snap back into place. This sudden magnetic reconnection can release huge gouts of [plasma](#) and magnetic field known as coronal mass ejections (CMEs), which surf across space on the sun's ever-gusting solar wind.

If a powerful CME passes over Earth, it can compress the planet's magnetic shield, causing what's known as a geomagnetic storm.



One of the long ice cores examined in the new study. (Image credit: Raimund Muscheler)

Mild geomagnetic storms can damage satellites and interrupt radio transmissions; severe storms, like the "Halloween storms" of 2003, can cause widespread power outages across the world and permanently damage electrical infrastructure, such as power transformers. Some researchers fear that a sufficiently large solar storm could also ravage the world's undersea internet cables, resulting in an "[internet apocalypse](#)" that leaves huge chunks of the world population disconnected for months.

CME outbursts typically peak every 11 years or so, when the sun enters the part of its natural activity cycle known as the solar maximum — the time when magnetic activity in the corona is in high gear. Today, satellites can monitor solar outbursts directly. But finding evidence of ancient storms requires some atomic detective work. The authors of the new study looked for evidence of special particles known as cosmogenic radionuclides - essentially, radioactive isotopes (versions of [elements](#)) created when charged solar particles collide with elements in Earth's atmosphere.

These radioactive particles can appear in natural records, like tree rings and ice cores. In the study, the authors looked at the latter, analyzing several cores drilled in Antarctica and Greenland. Cores from both locations showed a remarkable spike in the radionuclides [beryllium-10](#) and [chlorine-36](#) around 9,200 years ago, indicating that a powerful solar storm swept across Earth at that time.

Further analysis of the cores showed that the storm was particularly powerful — perhaps on a par with the most powerful solar storm ever detected, which occurred during a solar maximum between the years 775 B.C. and 774 B.C.

The newly discovered storm's occurrence during a solar minimum, when magnetic activity on the sun should be low, left the study authors puzzled and alarmed. "This [storm] further pushes the magnitude of a potential worst-case scenario for [solar storm] events," the researchers wrote in the study.

According to the study authors, it is now essential for researchers to detect more ancient, extreme storms in the ice-core and tree-ring records, to determine if there is some sort of pattern beyond the sun's 11-year cycle that dictates when the most extreme storms will occur.

**Thanks to Larry N8FTP for finding this article.**

Originally published on Live Science. <https://www.livescience.com/ancient-solar-storm-solar-minimum>  
<https://www.youtube.com/user/LiveScienceVideos>



**PCARS**

**ARRL Volunteer Examiners:  
serving the Amateur Radio  
community**

**First Saturdays 10:00 am  
at the club site in Ravenna**

**February, April, June, August,  
October, December**



The logo is circular with a yellow border. The outer ring contains the text "AMATEUR RADIO" at the top and "VOLUNTEER EXAMINER" at the bottom. In the center, there is a diamond-shaped symbol containing a stylized antenna and the letters "A", "R", "R", "L". To the right of the diamond, the text "ARRL" is stacked above "VEC".

*Daryl, WX4QZ*



After what happened on the DRE Morning Net a few days ago, I've gotten burned out on checking into other nets during the week.... this has been building up for quite some time now.

Net Control had specifically requested stations wait for 20 seconds before keying up, while he changed the batteries in his computer speakers. These were originally like that, but now have likely gone to USB connections. To me, a USB Headset Mic is the best, to cut out ambient noise, and to assure constant distance from the mic. This change was so Net Control could hear the stations checking in, instead of just quick keying, and they picking it up on the dashboard. However, if you have an older computer, you may not have a USB option. Unfortunately, batteries in rigs, speakers, cell phones, etc. fail at the worst time.



Well, no one complied with his request. There was a massive pile-up as a result, with 2 or 3 stations (if not more) trying to get in at the same time (I'd see multiple callsigns with the BlueDV program, then hear multiple stations over the speakers)...so much for "no doubling on D-Star".

On Netlogger, one of the Net Controls lamented "we need a forum on net etiquette in the worst way". In the 30+ years I've been licensed, most hams don't listen first... or ask "is this frequency or reflector in use??", then give their callsign. Even during Skywarn operations in Arkansas, if folks would just listen for the special tone, or if net control was taking check ins, they wouldn't look like absolute idiots... and their question about if the weather net was up, or if Net Control was taking check ins, would be answered for them.

Ham Radio is a HOBBY...it should NEVER take priority over things like church, family, health, job, or especially "honey-do's". In the latter case, that rig you have your eye on for your birthday or Christmas, is going back to "the candy store" in short order!! Never mind the fact that if "you're sick as a dog"... or if you have a tornado approaching... you need to be taking care of your health (calling 911 if necessary), or getting to safe shelter INSTEAD of checking into a net. Otherwise, it's likely to be the last thing you do before you become a Silent Key!!

There is also no prize, bonus, award, certificate, etc. for seeing how many nets you can check into during a day or evening. These stations are what I term as "Hi, Bye, And QSY"..."(Net Control, please check in [callsign], [name], [location], short time, no traffic)... and not a minute later, they are doing the exact same thing on another net. A fellow Net Control operator wondered if they even have a life outside of ham radio. In the Excel Net Spreadsheets I have created of selected D-Star, Echolink, and D-Rats Nets, there are over 200 nets that meet during a month...and in some cases, there can be a half dozen nets meeting in the same day and time slot!! And, that doesn't even include nets on other modes such as DMR, CQ100, AllStar, FreeStar, WIRES-X, Fusion, Packet, RF, or something else.

There is "no good time" for a ham radio traffic net, license study class or exam session, hamfest, special event station, demo, etc. -- because someone, somewhere, will have to miss it. While there wouldn't be nets without checkins, far too many operators today have made ham radio an obsession rather than a hobby. I've had some imply that the 60 minutes I do early check ins with, "isn't enough". Well, with degenerative disk disease in my back and spine, and if the net lasts 2 hours, I nearly fall getting out of the computer chair. I don't want to be like a fellow ham who recently fell, breaking his back and injuring his spine... and he is in rehabilitation, and will be going to an assisted living center. I've been down with bronchitis for at least a week, and it's hard to get through a net without hacking like a cat with a hairball.

Sarcastically, I've thought of creating a "Checkin When You Feel Like It Net"...this is any day, hour, mode, band, any license class, etc. and you check in whenever you feel like it... I'll acknowledge and log you in kind (whenever I feel like it). Don't hold your breath, or delay going to answer the call of nature, waiting for me to acknowledge you.

So as a result, I will ONLY be on the air for sked requests via D-Star, Echolink, CQ100, or Packet Via Telnet (which are nearly non-existent)... and for the following nets where I'm Net Control (all times below are US Central)...weather, internet, and health permitting (I've been down with bronchitis the last several days). For details on the QuadNet Array, go to <https://openquad.net> . I hope I don't have to cut these nets any further...but if a hobby gets to where it isn't fun anymore, then it's time to take a break from it. The other hobbies I do (square dancing and the computer bulletin board system), I don't spend every waking moment with them, either...and such will continue to be the case with amateur radio.

- 1) QCWA Digital Net, Sunday, 4pm, QuadNet Array
- 2) The PCL Net, Monday, 7pm, NS2B BBS (the net does NOT meet the weeks of Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas, or New Years Day)
- 3) Hotspot Raspberry Pi SBC ZumSpot Net, Monday, 9pm, QuadNet Array
- 4) Arklatex D-Star Net, Tuesday, 7:30pm, Reflector 48 B -- backup is Reflector 73 B
- 5) QCWA CQ100 Net, Friday, 10am, 14.347 (this is on CQ100 and NOT on RF)
- 6) Trains Net, Friday, 7pm, QuadNet Array
- 7) Food Net, 3rd Saturday, 3pm, QuadNet Array

I've even cut my D-Rats back to ONLY the St. Tammany Ratreflector. I will still conduct license exams 4 times a year in central Arkansas, but this is dependent on the Covid-19 situation.

I have other things in life outside of ham radio right now that are a greater priority...and "the thrill is gone" from checking into other nets, because of the mad rush of pile-ups. It got so where I'd wait until "the last call for checkins" to get in, but then I got to wondering "if it was even worth it". After what happened last week, the answer is "No". Besides, nets were in existence long before I got into ham radio... they'll be here long after I'm a Silent Key.

If you were going to prepare a net certificate for me on these "other nets", please discard it. While all nets are directed, some are still "casual and comfortable"... but I've gotten burned out on "the other nets". Besides, my absence from the other nets will allow someone else to check in instead... they likely want the check in far more than I do anymore.



**February 10, 2022**  
DoubleTree by Hilton Hotel Orlando at SeaWorld

**February 11–13, 2022**  
Central Florida Fairgrounds and Expo Park



*reDiscover*  
**RADIO**  
at the 2022 ARRL National Convention and Orlando Hamcation®



**Posted on Hamvention® web site 28 Jan 2022**

Hams and vendors hoping to attend Hamvention® 2022 are asking questions about plans to deal with COVID. Hamvention® management is monitoring the situation closely. **General Chairman Rick Allnutt, WS8G**, has issued the following statement:

*“We strongly anticipate that the Hamvention® 2022 is a go. We cannot guarantee what government may decide about unknown changes in the pandemic. It has become obvious that the State of Ohio is very unlikely to call a halt to large gatherings anytime soon. Despite a recent large spike in Omicron COVID cases and hospitalizations, there is no move to restrict large indoor or outdoor events such as sports events.”*

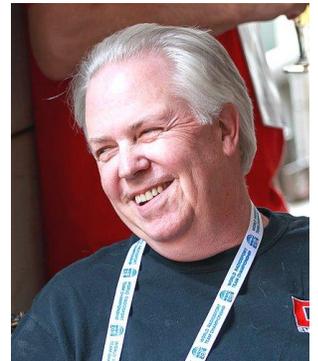
Allnutt added that he anticipates the official state guidance may be to recommend (but not require) wearing a mask and social distancing. Hamvention will support state guidance. We do not anticipate checking immunization status on site.

Some have asked whether COVID testing will be available at Hamvention®. At this time there are no plans to have testing on site. Watch hamvention.org for any updates dealing with the COVID situation. <https://hamvention.org/>

## Contest University Dayton & Orlando

**Contest University**

**Tim, K3LR**  
Contest University



**Contest University** registration is now **OPEN** and ready for May 19, 2022, at the Hope Hotel in Dayton, Ohio.

For 15 years - Contest University has had over 15,000 hams participate worldwide. We are very excited to be back in person in Dayton, Ohio - the day before Hamvention®.

For more information and to sign up please go to: <https://www.contestuniversity.com/>

=====

## Contest University is Coming to Orlando in February

Contest University (CTU) is coming to Orlando, Florida for the first time on Thursday, February 10, as part of the 2022 ARRL National Convention. This all-day Training Track will be held at the DoubleTree by Hilton Orlando at SeaWorld and includes a seat at the ARRL National Convention Luncheon. Learn from some of the top contesters in the world. CTU will be led by Tim Duffy, K3LR.

Presenters include Fred Kleber, K9VV/NP2X; Chris Blake, NX4N; Luis Romero, W4LT; Max Fountain, KJ4EUT, and Claudio Veroli, I4VEQ. This is an opportunity for new contesters as well as already-competitive operators looking to hone their skills. Instruction includes general contest operations and contest station skills, and many resources for additional information and tools to further enjoy contesting.

ARRL CEO David Minster, NA2AA, will deliver the keynote at the National Convention Luncheon. Register by December 31 to receive the early bird rate at [www.arrl.org/expo](http://www.arrl.org/expo). **DX Engineering** is the Official Sponsor of the 2022 ARRL National Convention Program.

# TopBand & Contest Dinners at Dayton 2022



**Tim, K3LR**

**Dayton Top Band Dinner Chairman  
Dayton Contest Dinner Chairman - 28 years**

## 32nd Annual Dayton TopBand Dinner

Continuing the great Dayton Top Band dinner tradition that George, K8GG and George, W8UVZ started, I am proud to announce the 32nd Annual Dayton TopBand dinner. Dinner reservations are now available for 2022! Friday evening May 20, 2022 at the Hope Hotel. <https://www.hopehotel.com/>

Top Band Social hour is at 6:00 PM and Dinner starts at 7:00 PM. Come and have dinner with the guys you work on 160 meters and enjoy great TopBand discussions. Dinner reservations are available on line with credit cards and PayPal. Thanks to Teri, K8MNJ for coordinating and organizing the 2022 TopBand Dinner. The 2022 Dayton TopBand Dinner details are here: <http://topbanddinner.com> Scroll down to make your reservations. We will pass the mic so everyone can introduce themselves. We will also have the exciting TopBand DXCC count down.

Four nights of great Top Band, DX and Contesting hospitality are also at the Hope Hotel Contest Super Suite. <http://contestsupersuite.com> If you enjoy having fun on the 160 meter band, the 32nd Annual Top Band Dinner is for you! Hope to see you at the 2022 Dayton TopBand Dinner

=====

## The 28th Annual Dayton Contest Dinner

The North Coast Contesters are proud to announce the 28th Annual Dayton Contest Dinner at the Hope Hotel - Wright Patterson Air Force Base, Ohio <https://www.hopehotel.com/>

2022 Contest Dinner tickets are on sale now exclusively via our web site. HUGE thanks to Scott, KA9FOX and QTH.com for designing, building, donating and running the Contest Dinner web site. <http://contestdinner.com>

Master of Ceremonies for the 2022 Dayton Contest Dinner is Contest Hall of Fame member and CQ World Wide Contest Director, John Dorr, K1AR. Thanks to Teri, K8MNJ for coordinating and organizing the 2022 Contest Dinner.

The 2022 Contest Hall of Fame inductees will be announced during the 2022 Dayton Contest Dinner. Thanks to Icom America and DX Engineering - the MAIN prize is an Icom IC-7610. The Dayton Contest Dinner will be held on Saturday night, May 21, 2022 at 6:30 PM Cash bar opens at 5:30 PM at the Hope Hotel. Located at the Hope Hotel (Official Contester Hotel) <https://www.hopehotel.com/>

Seating is random. Tables are set in rounds of 10. You can purchase an entire table for your group (purchased group tables are set for round 10). Full Table purchases are reserved seating. Tickets are only available on <http://contestdinner.com> **There are no tickets for sale at the door.**



# Paper Chase - Ice-olation Special Event Station

Joe, W8KNO



Because of COVID, we have cancelled our annual PCARS Freeze Your Acorns Off Contest. There is a club that has the same problem but will attack in a different manner. That club is the Stillwater Amateur Radio Association of Minnesota and their event is:

## Ice-olation Special Event WØJH operating February 19-21, 2022



Please read below and use below address only for confirmation requests.

QSL Confirmations Only To: [IceStation2022@radioham.org](mailto:IceStation2022@radioham.org)  
No QSL Cards or postal requests please. Confirmation Certificates will be by email only!

Normally members of the Stillwater Amateur Radio Association (SARA), would operate this event from a frozen lake. Due to Covid and the need for social distancing, they had to alter their event again this year. They hope to return to operating from a frozen lake next year. While they are not in complete “isolation”

due to Covid, they are based in MN where there is plenty of “ice” and they tend to become somewhat isolated during our winter months, so they will be attempting to generate enough RF, to help shorten their winter. For the event this year, they will be using a distributive operating system. Several club members will be operating portable from their own QTH, including one operating portable VE3. All will be using the WØJH club call, and logs will also be uploaded to LoTW.

While the majority of contacts are expected to be on SSB, where they we intend to operate on or near 3.860, 7.260, 14.260, and 21.360 + or – depending upon band conditions; they also hope to have significant digital activity primarily on FT8 and hopefully some on CW as well.

Please use the below QSL confirmation process only. No QSL Cards or other postal requests please. Confirmation certificates will be by email only.

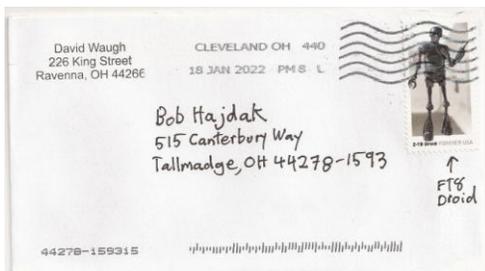
No need to include signal reports with your confirmation request, as what is in their log is what will appear on your certificate, however you must include:

- \* Your Call Sign
- \* Date of QSO (UTC date)
- \* Time of QSO (UTC time)
- \* Band or Frequency
- \* Mode

Any email received without the above information may be returned for clarification or discarded. . You will receive an auto-reply when submitting your email request to let you know your request was received, but does not imply that your contact is confirmed. The above email address is for this event only and please submit promptly as this email will be deactivated approximately 45 days after conclusion of the event. Submit confirmation requests promptly as late certificate requests will likely not be honored. Initial confirmation certificates are expected to be sent approximately 30 days after conclusion of the event. Questions may be sent to: [Trustee@radioham.org](mailto:Trustee@radioham.org) .



## FT8 - QSL



**Bob, N8QE**



I got this QSL Card from David, KE8QPC. Note the FT-8 Droid on the envelope. David knows I have been very active on FT-8 in the last year and a half.

He and I had worked each other during the January ARRL VHF Sweepstakes on SSB, but he was disappointed that almost everyone was using FT-8 for the contest, and he only ended up with 3 phone contacts.

I ended up with a total of 58 contacts with 22 multipliers, but only 1 CW (6M), and 8 PH (Three 6M & Five 2M) contacts. The rest were all 6M FT-8. Total of 1276 points was my best showing in that contest.

I have FT-8 Worked All States confirmed though I refuse to pay the ARRL's price for a WAS Certificate.



## DX Engineering is Hiring



**DX Engineering** - a long time supporter of PCARS - is hiring. Share your passion for Ham Radio and get paid for it.

DX Engineering is looking for active Hams for several areas: **Technical Sales Rep, Retail Technical Sales Rep** and many others. The most up to date list is available here:

<https://summitracing.wd5.myworkdayjobs.com/DXEngineering-External-Career-Site>

Multiple positions open. Flexible days and hours. Check back often to see new opportunities. DXE is a great place to be - working daily with other ham radio operators. Join the team.



Your reception will improve

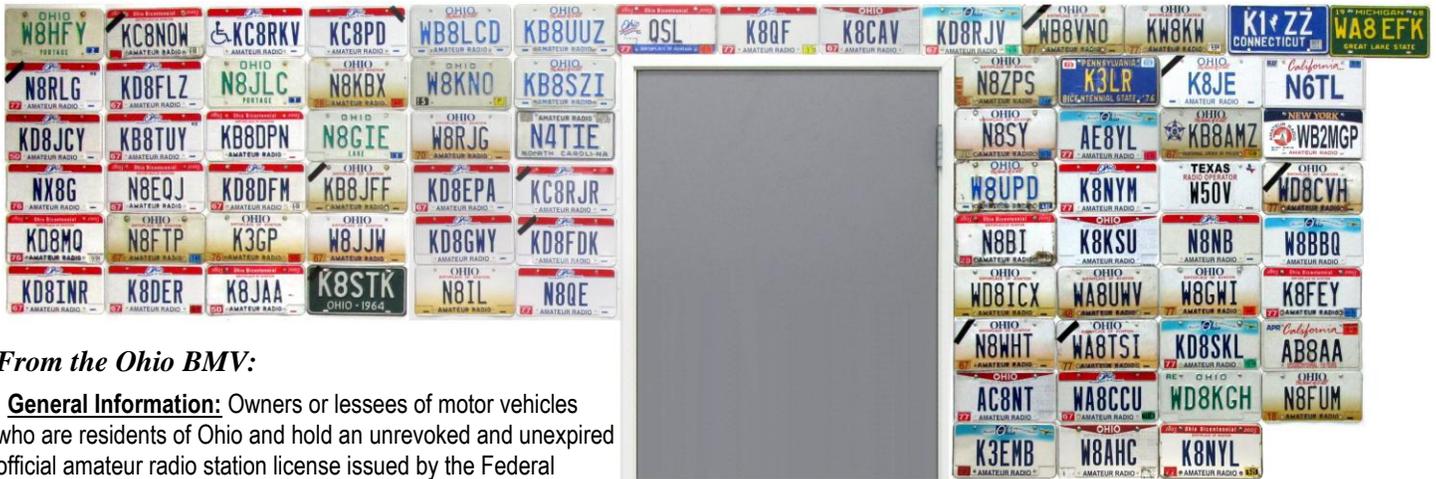


When you do squats, are your knees supposed to sound like a goat chewing on an aluminum can stuffed with celery?

# PCARS Ham Radio License Plates Wanted !!! PLEASE !!

**Dig out that amateur radio call sign license plate (with your present call sign), clean it up and bring it to be permanently affixed to the wall in the PCARS club station.**

We have 75 PCARS member's ham plates now, **but we can use more**. Don't have ham radio call plates on your vehicle? Well for those of you in Ohio, you can get the plates sent to you by going to any License Bureau office and filling out the special plate registration form. Have a copy of your current FCC license when you apply. The official form to obtain your Ohio Amateur Radio license plates is on the PCARS IO Group site. Then you'll have an old plate to bring in to get hung up as a *permanent part of PCARS history*.



## From the Ohio BMV:

**General Information:** Owners or lessees of motor vehicles who are residents of Ohio and hold an unrevoked and unexpired official amateur radio station license issued by the Federal Communications Commission may apply for these plates. The official call letters will be the license plate numbers.

**Registrant Eligibility:** Owner must submit a copy of the un-revoked and unexpired official amateur radio license issued by the Federal Communications Commission. (FCC).

**Title Requirements:** Ohio Certificate of Title issued in the same name as the FCC license, either singly or jointly, or the name on the FCC license is the same name on the lease agreement.

**Vehicle Information:** These plates may be issued to passenger vehicles, non-commercial trucks, recreational vehicles, house vehicles and non-commercial trailers.

**Type of Plates:** Plates will be manufactured with the FCC license.

**Issuance Information:** Amateur Radio plates cannot be issued with system assigned, reserved, or personalized plate formats.

Renewal of plates can be done at your local Deputy Registrar or by mail using their renewal notice. **Amateur Radio License Holders must provide a copy of their current unexpired and unrevoked official amateur radio license issued by the Federal Communications Commission (FCC) at the time of any type renewal transaction.**

All plates will be mailed directly to the address on your registration card unless customer requests otherwise. The deputy will issue your registration card, stickers and provide you with a permit which will allow you to operate your vehicle while your plates are being manufactured. Special license plate applications are available at all Deputy Registrar license agency locations. These plates cost an additional \$10.00 annually plus the normal registration fees. The fee is determined by Ohio Revised Code section 4503.14.

## PCARS is on YouTube

That's right - PCARS is now on YouTube. So, what does that mean? Hey, we have a new place to put all kinds of videos that are about PCARS for the world to see.



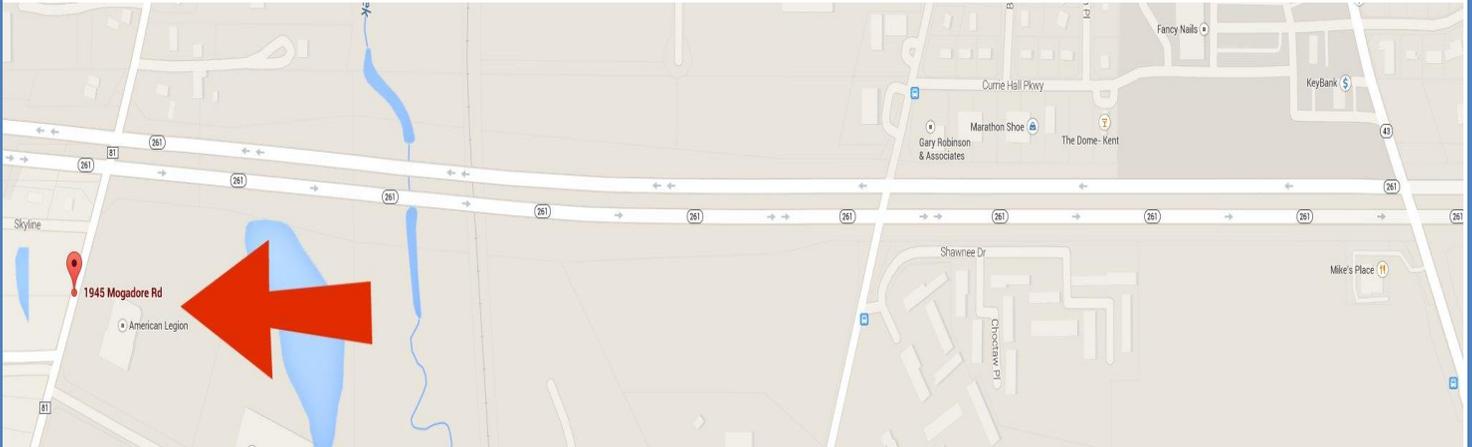
# PCARS Meetings

The Portage County Amateur Radio Service (PCARS) in-person meetings are held the **2<sup>nd</sup> Monday** of each month and start at 7:00 pm.



**CHECK WEBSITE FOR UPDATES ABOUT IN-PERSON MEETINGS**

*The meetings are held at The American Legion, Post 496  
1945 Mogadore Road - in Kent. (Just South of Route 261)*



The American Legion Post 496 is located on the southeast corner of State Route 261 and Mogadore Rd. The driveway is on the south side of the building and as you enter you will pass through a parking lot on the south side of the building. Please do not park in this lot but instead continue on to the parking lot on the east side of the building which is the near the rear entrance into the Post 'Canteen'. As you enter the post from this entrance you'll see a bar to the left and a dining area to the right. The meeting area we'll be in is on the right, to the rear of the dining area.



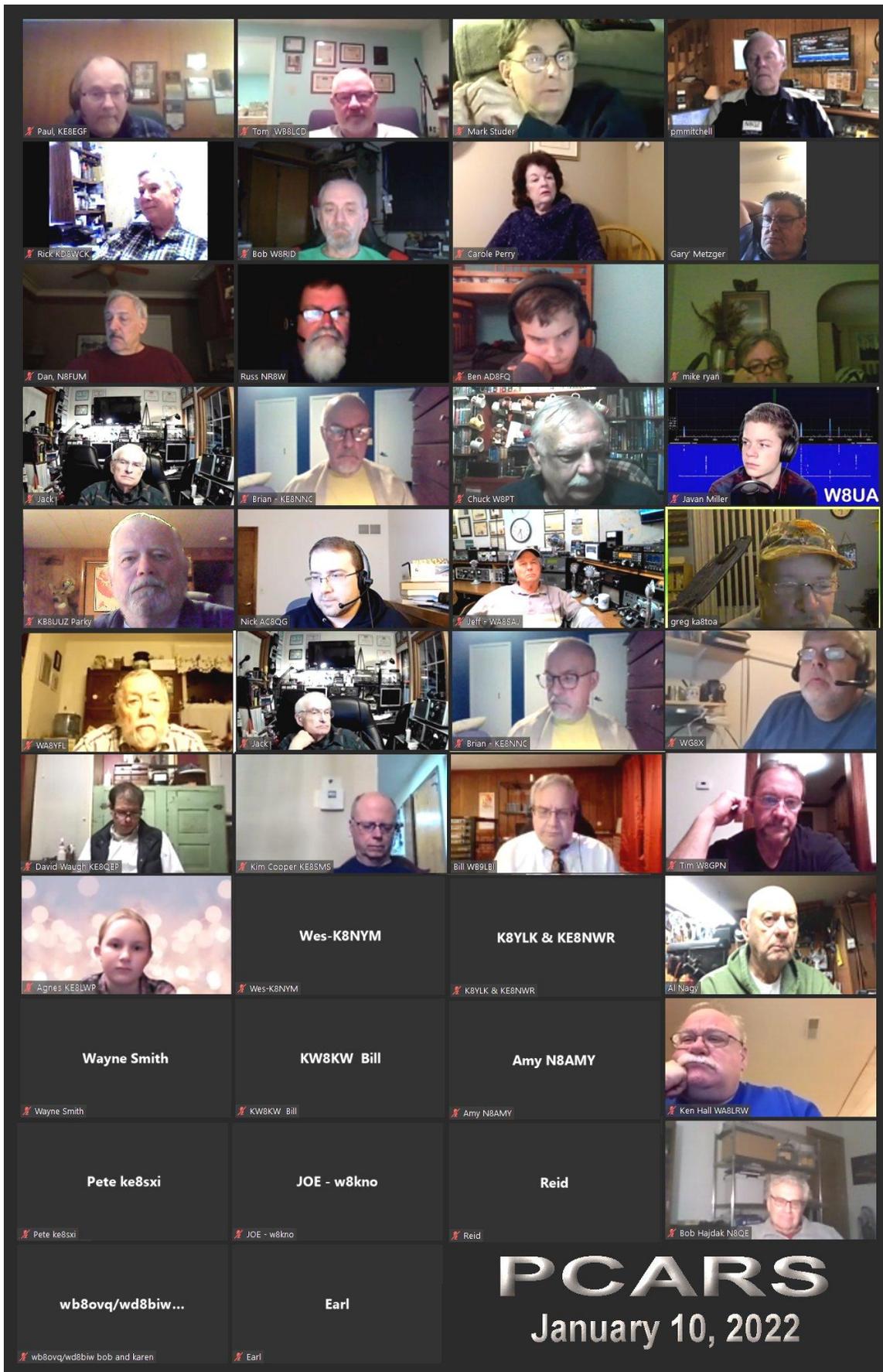
*The picture on the left shows  
The American Legion Post 496  
as viewed from Mogadore Road.  
(looking East)*



The menu consists of your basic burger / dog / chicken sandwiches, wings, fries, onion rings, and salads. There is also an appetizer selection as well. Adult beverages are available and costs are in line with what you would expect at most bar-restaurant facilities.

If you are a member of the The American Legion, The American Legion Auxiliary, or the Sons of The American Legion, bring your ID card as you get a substantial discount on adult beverage pricing.

# Photos from the January Meeting



**PCARS**  
January 10, 2022

Portage County Amateur Radio Service, Inc.



PCARS - K8BF

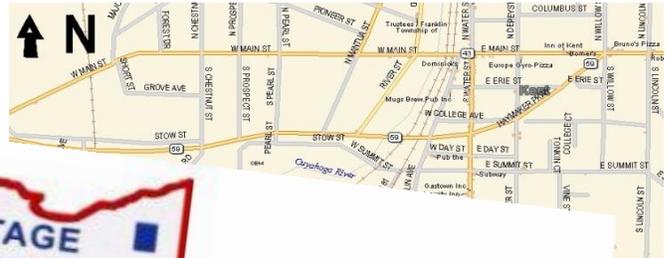
~ 17th Annual ~

"Freeze Your Acorns Off"  
(FYAO) Special Event Station



Where: Fred Fuller Park - 497 Middlebury Rd., Kent, Oh  
at the Roy Smith Shelter House

When: Saturday - Feb. 12, 2022  
10:00 am - 1:00 pm



Operating

We will have  
80 m  
certified  
certified  
calling



0 and  
a  
or a  
O, or  
uld use  
l snowy  
s using

**CANCELLATION: Freeze Your Acorns Off**

I am saddened to announce the cancellation of the February 12th Freeze Your Acorns Off QRP Event. After a full discussion of the PCARS Board, it was decided that it would be too risky to hold the event in light of the surge in COVID infections.

We will be discussing when we can hold the event and we will let all of you know what the new date will be.

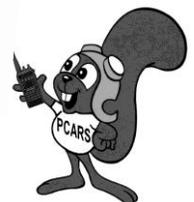
We know that many were looking forward to this event, and we will do our best to reschedule at an appropriate time.

So, for  
73 - Chuck W8PT

0"  
eters FM  
E to the  
6  
we're out  
m. Your



Check PCARS out on the web [www.portcars.org](http://www.portcars.org)  
Questions? Contact Chuck, W8PT at [chuckw8pt@gmail.com](mailto:chuckw8pt@gmail.com)





# Open Stub 2m & 70cm Antenna Build

*John, WG8X has been building these for a few years; mostly to donate to the Center of Hope fundraisers at PCARS, and a similar fundraiser in Alliance. John uses one at home, it works really well, and is practically indestructible. PCARS, in the past, has done this antenna project and used this antenna at Field*

*Day and FYAO and can attest to its excellent performance. The design has been around for over a decade and it is a **proven performer.***

*Cost for the parts will be **\$30**, which is a bargain, since all the cutting, drilling, tapping, etc. will be done in the kit.*

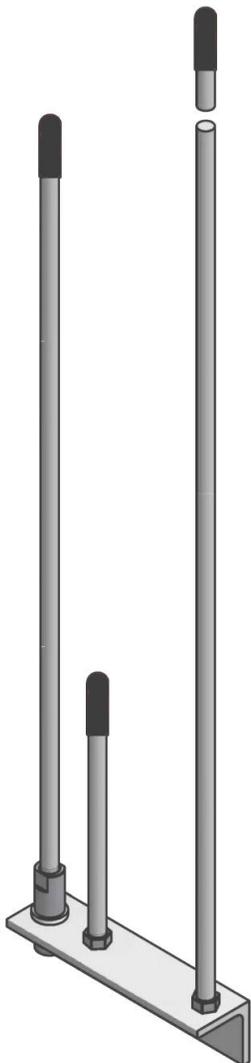
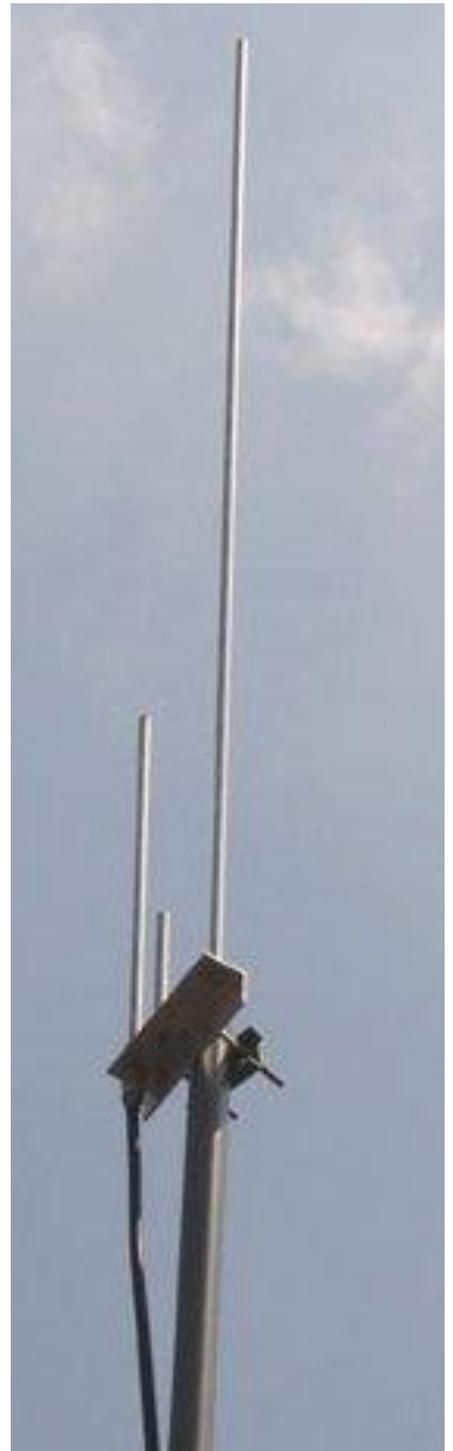
*What you get for \$30 is **all** the quality finished elements, hardware and a U-clamp for mounting to a pole.*

***It's a super deal.** The group build will assemble the parts, which can be done with simple tools.*

***This is a LIMITED availability to the FIRST 14 antennas sold. Pre-registration & pre-payment is required.***

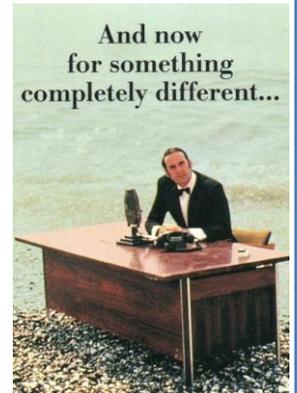
*Contact John, WG8X at: [KD8MQ1@gmail.com](mailto:KD8MQ1@gmail.com) and get your reservation in NOW!*

*Feb 26<sup>th</sup> is the tentative date for the antenna build day at the PCARS club site. You can also order one to build at your home if desired.*



### Some interesting facts to bring up when the conversation lags.

Can you guess which of the following are true and which are false?



1. Apples, not caffeine, are more efficient at waking you up in the morning.
2. Alfred Hitchcock didn't have a belly button.
3. A pack-a-day smoker will lose approximately 2 teeth every 10 years.
4. People do not get sick from cold weather; it's from being indoors a lot more.
5. When you sneeze, all bodily functions stop, even your heart!
6. Only 7 percent of the population are lefties.
7. Forty people are sent to the hospital for dog bites every minute.
8. Babies are born without kneecaps. They don't appear until they are 2 - 6 years old.
9. The average person over 50 will have spent 5 years waiting in lines.
10. The toothbrush was invented in 1498.
11. The average housefly lives for one month.
12. 40,000 Americans are injured by toilets each year.
13. A coat hanger is 44 inches long when straightened.
14. The average computer user blinks 7 times a minute.
15. Your feet are bigger in the afternoon than any other time of day.
16. Most of us have eaten a spider in our sleep.
17. The REAL reason ostriches stick their head in the sand is to search for water.
18. The only two animals that can see behind themselves without turning their heads are the rabbit and the parrot.
19. John Travolta turned down the starring roles in 'An Officer and a Gentleman' and 'Tootsie.'
20. Michael Jackson owns the rights to the South Carolina State Anthem.
21. In most television commercials advertising milk, a mixture of white paint and a little thinner is used in place of the milk.
22. Prince Charles and Prince William NEVER travel on the same airplane, just in case there is a crash.
23. The first Harley Davidson motorcycle built in 1903 used a tomato can for a carburetor.
24. Most hospitals make money by selling the umbilical cords cut from women who give birth. They are used in vein transplant surgery.
25. Humphrey Bogart was related to Princess Diana. They were 7th cousins.
26. If coloring weren't added to Coca-Cola, it would be green.

*They are ALL true*

# Thanks & 73



**Parky, KB8UUZ**  
PCARS Newsletter Editor



I really appreciate the help in gathering material to keep this newsletter number one. Without your help we would not have received the newsletter awards in past years. All of our members (and others) look forward to getting this newsletter every month, so keep sending those inputs! I'm sure you know PCARS is known as the **BIG FUN** amateur radio club. So chip-in and send your article in to keep this newsletter great for 2022 and beyond.

Thanks go out to the contributors for this month's newsletter:

**AC8QG, N8WCP, WA8EFK, N8SY, WB8LCD, KB8UUZ, K0NR, KE8ARB, ZL1BQD, 3D2AG, WG8X, WB2MGP, KA8TOA, K8CAV, LA7GIA, N1SFE, W8PT, Brandon Specktor - Live Science, W7EL, N8FTP, WX4QZ, WS8G, K3LR, W8KNO, N8QE, The ARRL, DX Engineering and the World-Wide Web**

With *your* continued help – we can keep making this a *great* newsletter.



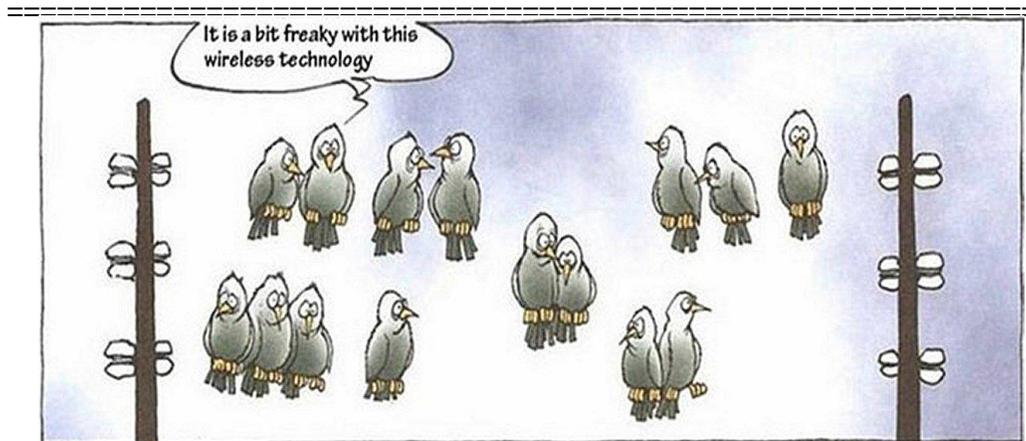
## It Keeps Coming - Do All You Can to be SAFE



Just when it looked like Omicron had peaked, a stealthy new variant is starting to surge and experts are warning it's even "more contagious." Just a couple weeks ago it seemed like the worst was behind us and the wave of COVID-19 infections driven by the new Omicron variant was beginning to ebb in many of the worst-hit places. But epidemiologists warned that some new variant would eventually replace Omicron, potentially driving a new surge in cases. They were right. This week, cases started rising again in several countries. And some experts think an elusive form of Omicron, the so-called BA.2 sublineage, might be responsible. If that's the case and BA.2 proves even more transmissible than baseline Omicron—the BA.1 sublineage—then we should brace for a difficult spring. BA.2 is already making inroads in the U.S. It could slow or even reverse our recovery from the first Omicron wave. Don't panic quite yet. But don't let down your guard. And if you're unvaccinated or unboosted, you know the drill. Yesterday was the best time to get your jab.

<https://www.thedailybeast.com/ba2-omicron-could-just-be-the-most-contagious-covid-yet?source=articles&via=rss>

*Please be careful.*



# The Portage County Amateur Radio Service, Inc. (PCARS) - Ohio

~ The Hamvention® 2018 "Club of the Year" ~

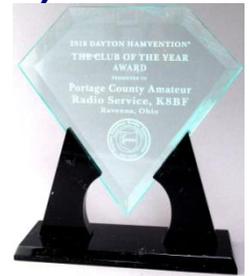


PCARS meets the second Monday of each month at the **Kent American Legion Post 496**,  
1945 Mogadore Rd. - just South of Rt. 261 - Enter the rear of the building for the meeting room.

**Meeting starts at 7:00 pm - All are welcome to attend ~ Stop in and say hello!**

PCARS uses the **K8IV** repeater: **146.895 MHz PL 118.8** in Sugar Bush Knolls ~ EchoLink Node: **K8BF-L**

Check PCARS out on the web: [www.PORTCARS.ORG](http://www.PORTCARS.ORG) -or- [www.K8BF.ORG](http://www.K8BF.ORG)



~ 2022 Officers ~		2022 PCARS Appointments & Committees	
President - Nick Wagner - AC8QG Vice President - Mike Szabo - N8WCP Treasurer - Greg Ash - KA8TOA 1 Year Trustee - John Myers - WG8X 2 Year Trustee - Tom Parkinson - KB8UUZ 3 Year Trustee - Chuck Patellis - W8PT Past President - Tom Sly - WB8LCD	ARRL Awards - DXCC	<b>W8KNO</b>	Joe Wehner
	Club Site Manager/Liaison	<b>K8CAV</b>	Rick Krus
	Contest Coordinator	<b>W8PT</b>	Chuck Patellis
	EchoLink		
	Field Day Chairman, 2022	<b>WA8AR</b>	Tony Romito
	FYAO Chairman	<b>W8PT</b>	Chuck Patellis
	Historian	<b>KB8SZI</b>	Peggy Parkinson
	K8BF Callsign Trustee	<b>N8AMY</b>	Amy Leggiero
	K8BF QSL Manager	<b>N8AMY</b>	Amy Leggiero
	Membership Chairman		
	Net Control Coordinator	<b>KA8TOA</b>	Greg Ash
	Newsletter Editor	<b>KB8UUZ</b>	Tom Parkinson
	OSPOTA Chairman	<b>KB8UUZ</b>	Tom Parkinson
PCARS Meeting Photographer	<b>KE8LWO</b>	Bernadette Wagner	
~ Meetings & Net ~	Public Information Officer		
2nd Monday of each month, 7pm Thursday night Club Net at 8 pm on 146.895	Secretary	<b>KE8EGF</b>	Paul Hyland
	Social Media		
	Tech, Gen & Extra Class Manager		
	Volunteer Examiner Liaison	<b>KB8UUZ</b>	Tom Parkinson
	Webmaster	<b>WG8X</b>	John Myers

<b>KB8UUZ</b>	Tom Parkinson
<b>AC8QG</b>	Nick Wagner
<b>AC8NT</b>	Jim Wilson
<b>N8QE</b>	Bob Hajdak
<b>KA8TOA</b>	Greg Ash
<b>WA8CCU</b>	Al Nagy
<b>N8PXW</b>	Jim Korenz
<b>K8IV</b>	Ed Polack
<b>N8AMY</b>	Amy Leggiero
<b>N8FUM</b>	Dan Torchia
<b>N8XTH</b>	Deron Boring
<b>WB8LCD</b>	Tom Sly
<b>W8PT</b>	Chuck Patellis
<b>W8GWI</b>	Dave Seckel

**PCARS Active Volunteer Examiner Team Members**



## THE RADIOGRAM

**PCARS Incorporated**  
Nov. 1, 2005

**First Meeting**  
Nov. 14, 2005



**ARRL Affiliation**  
April 20, 2006



**Special Service Club**  
March 22, 2010

The RADIOGRAM copyright ©2022, is the official newsletter of the Portage County Amateur Radio Service, Inc. (PCARS) - Hamvention® 2018 Club Of The Year. The RADIOGRAM is an Award Winning newsletter: **ARRL Ohio Section Newsletter - Third Place 2015 - Second Place 2014, 2016, 2020 - First Place 2012, 2013, 2017, 2018, 2019, 2021. ARRL Great Lakes Division Newsletter - Second Place 2013 - First Place in the 2017, 2020 and 2021.**

Articles are the opinion of the authors and not necessarily those of PCARS. Or, better yet, let me express it this way: "These are my opinions and only my opinions, unless you share them as well, which would make them our opinions, but I am not of the opinion that I can express your opinion as my opinion without your prior expression of said opinion, and then my re-utterance of that opinion would, in my opinion, be foolish unless I were expressing agreement to your opinion, and then it wouldn't be my opinion but your opinion to which I only agree." **GO AHEAD - STEAL THIS NEWSLETTER!** You have our permission to post, e-mail, copy, print, or reproduce this newsletter as many times as you like, but please do not modify what you use. If you use material in this newsletter, all we ask is that you give credit to PCARS along with the author of the article. Caution - some of the articles in this newsletter maybe covered by copyright - please do not copy and use the ones that have by-line information unless you obtain permission from the original author. If you're not sure, drop an e-mail to [KB8UUZ@gmail.com](mailto:KB8UUZ@gmail.com). The RADIOGRAM always obtains written permission for reproducing copyright material. The RADIOGRAM comes out the first day of each month (usually), please have inputs submitted by 8 pm ET on the last Friday of each month. ARES® (Amateur Radio Emergency Service®) is a program of, and both logos are registered trademarks (used with permission) of the American Radio Relay League, Inc. ARRL, the National Association for Amateur Radio™. **Why the Black Squirrel in our logo?** For those of you not familiar with it: The Black Squirrel is commonly seen around Portage County, Ohio. Seems that some of these little guys and gals got loose from Kent State University back in 1961. They have migrated and thrived throughout our county. Kent State University even has an annual Black Squirrel Festival. **So when you spot a black squirrel – think PCARS!**

The RADIOGRAM is published every month and only sent to subscribers. If you would prefer not to receive this newsletter, we understand. We'll try not to take it personally. It's not you saying you don't like us, but maybe you just don't have the time to look at all this hard work we've done just for you. Hey, that's cool. But if your heart is truly set on making sure you no longer receive this newsletter, even though we promise to one day reveal the meaning of life in it and you're going to be really upset when you miss out on that, we can take you off the e-mail list. Send your newsletter inputs (in .TXT format) along with in-focus pictures (not small 50 kb photos) to the newsletter editor: [KB8UUZ@gmail.com](mailto:KB8UUZ@gmail.com)

By attending PCARS in-person activities, you are acknowledging that an inherent risk of exposure to COVID-19 exists in any public place where people are present. By attending PCARS in-person activities, you voluntarily assume all risks related to exposure to COVID-19 and covenant not to sue and agree not to hold the Portage County Amateur Radio Service (PCARS) or any of their directors, officers, contractors, vendors or volunteers liable for any illness or injury. While PCARS implements preventative measures to reduce the spread of COVID-19 in accordance with Federal, State and Local guidelines, we cannot guarantee that attendees will not become infected with COVID-19 as a result of attendance.



NLC



**Portage County Amateur Radio Service (PCARS)**  
705 Oakwood Street - Box 12  
Ravenna, OH 44266 USA