



The **RADIOGRAM**

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

PCARS - 2018 Hamvention® Club of the Year

VOLUME 20 - NUMBER 06 - JUNE 2025



PCARS K8BF

The Club that puts the FUN in Ham Radio!



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The RADIOGRAM

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Jim, AC8NT
PCARS President



Field Day is Coming

We have one of our biggest events coming up. Of course it is Field Day. This year, as in all past years, we will have some changes. We are relocating the GOTA station to a more favorable area in the ball field. We have also planned to have some new operators operating the GOTA station to increase activity. A few station captains are still looking for some help filling their schedules. Elsewhere in the newsletter you may find requests for help. Remember we always need help with setup and teardown. If you can possibly make it Saturday morning or Sunday afternoon to help with this work, please let Tony WA8AR know.

Another Great Antenna Build

We have a great build coming up building a linked dipole antenna. John WG8X is coordinating the event. I am sure you will see something about this build in this newsletter. This antenna will be a great addition to your POTA go-bag.

Some Outside Club Work Saturday June 14th



We need a little outdoor cleanup at the club site and Ken needs help with the 80 meter dipole installation. The outdoor cleanup should go quickly. It is just cleaning up junk left by the roof and window repair crew. Ken has done an outstanding job getting ready for the 80 meter dipole install. However it has three support points and will take a small crew to complete. I am planning to complete this work on Saturday June 14th.

Personal Notes

The weather is finally warming up and I am enjoying some outside work preparing antennas. I have built a remote controlled EndFed that will let me work 30 meters. A key fob push and my antenna is shorter or longer. It is pretty cool. Maybe a build in the future. Looking forward to getting out all summer.

Have fun and get on the air,

Jim, AC8NT



PCARS K8BF

The club that puts the FUN in ham radio



Happy Birthday PCARS Members

AD8FQ	Ben
KD8JN	Randall
KE8TQR	Keith
AD8MO	Kevin
K8JGX	Jack
WD8DAU	Dan

KE8LWO	Bernadette
KC8YSU	Steven
AC8XO	Vince
KD8WCK	Richard
W8CDL	Coletta

KD8LIR	Jennifer
N8NH	Mark
K8PJW	Philip
WB8OVQ	Bob
KB8VJO	Gary



From Around The World...

Field Testing An Antenna, Using A Field

<https://hackaday.com/2025/05/21/field-testing-an-antenna-using-a-field/>

Radio Apocalypse: Meteor Burst Communications

<https://hackaday.com/2025/05/12/radio-apocalypse-meteor-burst-communications/>

Radio Repeaters In The Sky

<https://hackaday.com/2025/04/30/radio-repeaters-in-the-sky/#more-773077>

The Holy Cluster - The site is a worthwhile place to go for propagation information and would be valuable for anyone just getting into this part of the hobby. You can tailor it to your own needs as well.

<https://holycluster.iarc.org/>





Hi everyone, I'm going to start down a little different road this month, and talk briefly about motivation. Does the following describe you some days?

**Oh my; there's so many reasons to not operate tonight.
There's a contest going on; the bands are dead.**

Speaking for myself, I've found that when I really want to do something, there's not much that will stop me. But, when my motivation is sagging (which is sometimes frequently), I come up with all manner of excuses to stay home and pilot the couch.

What excuses have you employed recently? This month, let's look at some of my favorites.

The bands are dead

We've all seen it; the bands are as quiet as a library. It seems like you can call CQ forever, with hardly any response. I've always believed that the bands are usually open to somewhere, even if some days that turns out to be the end of your block. I've had some success in calling CQ even if the band seems dead. There's a thrill that comes from hearing life on a seemingly dead band.

There's a contest going on

This column is being written during the weekend of the CQ WW WPX CW contest; one of the most popular events of the year for contesters. But, I'm still able to use CW for park activations. How?

- 1) Use the WARC bands; 60, 30, 17, 12 Meters can be your friend during a contest weekend, since contesting isn't allowed there
- 2) Go where the contesters aren't; Saturday night, I found one activator set up on 7117 KHz. Yes, we are allowed there. Everyone has access to that section of 40 Meters; even Technician class operators.

You can sometimes find openings higher in the band, or even lower, among the contest stations.

One of the radios I carry in my Go Box is not working well

There's not a lot I can say about this. Just adapt & overcome. If your G90 is malfunctioning, pull out one of your QRP rigs. If possible, bring your Shack rig out to the park.

Someone is holding a baby shower in my favorite pavilion at the state park

Again, Adapt and overcome. If you're favorite operating spot isn't available, then choose another. Or, is there another POTA park nearby? Here in Ohio, we have 275 POTA references to choose from. I bet not all of them are hosting baby showers (or graduation parties, etc)

Someone is currently activating at my state park

Well, most parks are large enough to host multiple activations. Some (like First Ladies Library in Canton) can be a challenge. Either find another activating spot in the park, or approach the other activator and say hi. Maybe you can do a dual activation where you both activate, by passing the mic back and forth. You may just make a new friend.

The park officers asked me to leave

OK, this one is valid. If you receive pushback from the authorities, be nice; don't argue. Remember that they have the power to end your activation real quick. And at the end of the day, you will lose. If you can't work something out with them, report the incident to POTA, and hopefully, a compromise can be worked out. Remember, this is their job; not yours.

With the group build planned for July, I've been testing Linked dipole antennas. A linked dipole is a multi-band dipole that is cut into sections for multiple bands. The relevant sections are "inserted", or removed by connecting, or disconnecting them. They're a bit fussier to tune initially, but once tuned, you just put them up and have fun.

The first one I built covers the 20m, 30m, 40m bands. Tests at Wingfoot Lake, and West Branch, have netted pretty good results. The next one I'm building will cover 10m, 15m, & 20m bands. You can read more about this elsewhere in this month's Radiogram.

How was Hamvention for you? I took a weeks' vacation from work, and finished some stuff around the house before heading to Xenia. This year, I helped staff the Alliance ARC booth in the flea market. The traffic this year seemed to increase over 2024. I plan to reserve the same spot next year. It was great having a place to return to when I needed to rest my legs.

In the off hours, Tim, AA4SS and I activated a few area parks. I'm don't normally do a lot of SSB activations, but this was fun.

The Satellite antenna made by Arrow was on my shopping list this year. After returning home, I ordered a Wouxun KG-UV8D Dual-band HT, and I hope to begin working the FM satellites in time for Field Day.

Johnathon, NE5J, was selling a few spaces down from me. Johnathon is the previous holder of my callsign; WG8X. We had a nice chat about callsigns, and ham Radio.

Since buying my camper, I've been plagued with RF Noise. I was quick to assume that it was coming from the onboard 12V convertor, which mostly charges the onboard 12V battery. Strangely, shutting off the breaker that powers the convertor didn't quiet the noise. Flipping the mains off was an answer, but not a convenient one, since it also killed the furnace blower, and AC unit.

Messing around at the campsite, Tim and I were talking about it, and he discovered that the legend on the breaker panel was mislabeled. The breakers for the convertor and the AC unit were switched. Once figuring out the error (Thanks Jayco!), we had a very RF Quiet campsite.

I've been home for a week and am still unpacking from that trip. I did manage to find all the small goodies that I bought, and even the throw weight that had been mislaid after the activation at US-7850.

That's it for this month. Remember to "leave no trace", and have fun out there.

73 DE WG8X

Tony, WA8AR

Field Day Chairman



I hope everyone is ready and looking forward to Field Day 2025 (June 28th and June 29th)! Last Year was a good time and was also successful. As most of you know, K8BF scored 5th in the nation in class 4A, 1 ST in Ohio and 1 ST in our Section. That result was achieved thanks to a large number of our fellow members volunteering to pitch in and help with all aspects of our Field Day planning, preparation and operations. However, this year we are shooting to better our score and take PCARS closer to first place in the nation in our operating class! I believe that we have learned a lot from the past,

so we WILL fine tuning our Field Day practices to enhance our score and try to bring home a National 1st place finish for PCARS. To that end we still need operators and volunteers to assist with setup before FD and teardown afterwards.

Operators Needed

The 20 meter station: has a number of slots open for the overnight hours. This year the 20 meter station will setup to operate voice modes on both 20 meters and 80 meters (nighttime ONLY). The decision to switch to 80m at night will depend on propagation. If you are interested please contact Mike N8WCP. Nighttime operations at this station are a crucial piece of our strategy to win BIG this year.

The GOTA Station: Current rules present an opportunity for all Technician or Novice licensees; newly licensed amateurs (since June 2024); other generally inactive licensees (inactive for 3 years or more), and ALSO, non-licensed persons may also participate (Get ON The Air) under the direct supervision of a licensed control operator (basically any interested person can show up, with no experience and make contacts as if they were licensed). Anyone interested should contact Jim AC8NT.

Volunteers Needed for Setup/Tear Down

As we have done in recent years I will need at least **14 volunteers** to assist the Field Day team with Setup and Tear down of antennas and station equipment. If you have done this before, great, but you do not need any experience to volunteer. The Captain for each station will direct all work for their station. If you are a new Ham this is a great opportunity to get hands-on experience putting up a variety of antennas. Setup has normally been completed in about 2 to 3 hours (more or less). Teardown after Field Day has been done in less than 2 hours. If you cannot volunteer for both, no problem, just let me know which task(s) you are volunteering for by emailing me at: **(Tony WA8AR tromito99@gmail.com)**). The Club will supply coffee and water plus Sandwich/pizza for lunch(s).

Here are the Field Day setup/teardown schedules:

Prior to Field Day, a detailed Safety Plan will be distributed to all volunteers. Each Volunteer must read and be familiar with the safety plan. Each Volunteer must sign, date and return a copy of the plan to the Safety Officer on FD. Distribution of the safety plan will be accomplished at least three weeks prior to FD.

SETUP Saturday June 28 - PLEASE BE PROMPT

8:30am Arrive on site (meet at the picnic shelter of the Freedom Township Park)

8:40am Assignment of work tasks

8:45am Begin Work

12:30pm Antennas up and ready for testing; power cables strung and energized [Pizza Lunch]

2.00pm Field Day Stations On-The-Air

TEARDOWN Sunday June 29

2:00pm Stations Off-The-Air Work begins immediately [Lunch served before 2:00]

3:30pm All antennas down and stowed for transport. Field Day over and done.

The only equipment the volunteers need to bring are gloves and safety glasses (REQUIRED). Steel toe shoes are always a good idea. Rain gear is essential (just in case). If shoes/boots are not waterproof an extra pair of dry shoes and socks are a good idea. The club will supply a dozen basic hardhats, but I encourage you to bring your own hardhat if you own one. **Hardhats must be worn whenever you are working in an area where there is any equipment (antenna components) or any hardware above your head.** Remember that even a medium size bolt falling from 25 or 30 feet can cause serious injuries (or worse).

To volunteer for the PCARS Field Day Setup/Teardown crew just send an email to me at tromito99@gmail.com , Specify if you are volunteering for Setup, Teardown or Both as soon as you can. I will confirm by email.

Come out and help make 2025 another successful PCARS Field Day! Email me with any questions.

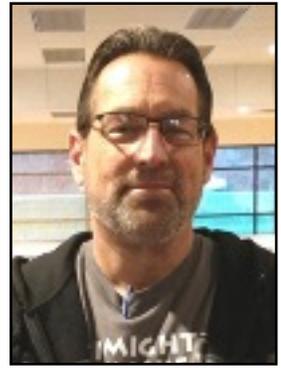
For directions to the Field Day Site please see the map shown on our website www.pottcars.org under Activities/Field Day.

Tony WA8AR, PCARS Field Day Chairman



Field Day 20-Meter Station

Mike, N8WCP
20-Meter Station Captain



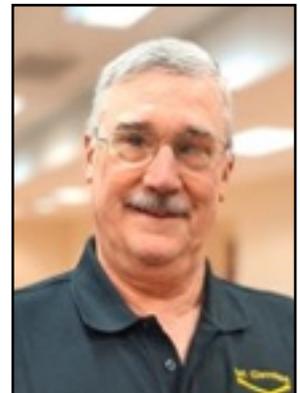
Field Day is just 28 days away! We have three nighttime shifts to fill. If you're available to work one of these shifts, send an email to n8wcp.us@gmail.com with your preferred time slot.

73 - Mike N8WCP

DAY	LOCAL	OPERATOR
SAT 28TH	2:00P-4:00P	N8QE - BOB
SAT 28TH	4:00P-6:00P	N8WCP - MIKE
SAT 28TH	6:00P-8:00P	W8PT - CHUCK
SAT 28TH	8:00P-10:00P	AD8IR - AGNES/AD8FQ - BEN
SAT 28TH	10:00P-1200A	K8IV - ED
SUN 29TH	12:00A-2:00A	KA8TOA - GREG
SUN 29TH	2:00A-4:00A	
SUN 29TH	4:00A-6:00A	
SUN 29TH	6:00A-8:00A	
SUN 29TH	8:00A-10:00A	N8QE - BOB
SUN 29TH	10:00A-12:00P	N8WCP - MIKE
SUN 29TH	12:00P-2:00P	KA8TOA - GREG

PCARS Field Day 2025 Flex Station

Rick, K8CAV
FD Flex Station Captain



The Flex Station Schedule is now full but it was done by several volunteers taking two or more time slots. If you would like to operate Flex we may be able to accommodate you and we would really appreciate it! Contact me at k8cav.coms@gmail.com if you are interested, thanks!

Field Day CW Operators Needed

George, K3GP
CW Station Captain

We still need a few more CW operators to complete 24 hours of uninterrupted CW operation.

Here is the schedule as it currently stands:

LOCAL TIME	UTC	OPERATOR
SAT 1400-1700	SAT 1800-2100	N3RA
SAT 1700-2000	SAT 2100-0000	N8NB
SAT 2000-2300	SUN 0000-0300	W8GU
SAT 2300-0200	SUN 0300-0600	WB9LBI
SUN 0200-0500	SUN 0600-0900	OPEN
SUN 0500-0800	SUN 0900-1200	OPEN
SUN 0800-1100	SUN 1200-1500	K8FF
SUN 1100-1400	SUN 1500-1800	OPEN

I personally will operate one or two of the open slots as necessary.

If you would like to assist at the CW station, email me at rttyfan@gmail.com

George K3GP
PCARS CW Captain

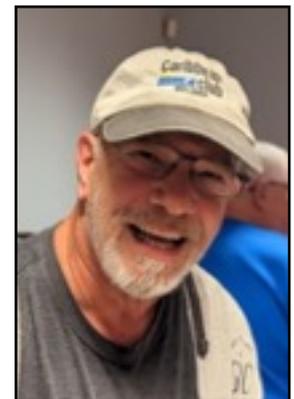
K8BF Net News

Greg KA8TOA
Net Control Coordinator

The net schedule has been posted on the club web site for July, August and September. I will send emails to notify everyone and as usual if there are issues please email me. The nets have been lite, so if someone has a suggestion please let me know.

Tom WB8LCD is working on a 20 year certificate for check-ins , to celebrate our 20 year anniversary. I know the repeater was having issues last week, hopefully this was taken care of. Next month I should have some stats for the newsletter. I am looking forward to seeing everyone at Field Day.

For now 73, have fun, be safe and enjoy.



When my dad moved back up here from Greensboro, NC I was able to get him interested in joining PCARS. We both were/are members. His call sign was W8JFQ.

We both were into Amateur Radio. He got me into it and was my elmer.

He lived in an apartment and could not run HF so I found RemoteRig and he ran HF from his apartment using RemoteRig there and at my QTH. It worked great.

The attached article was published in *QST* in the September 2024 edition.

This was a project that we both were slowly working on when he passed away. I was able to start going through all of my Dad's radio equipment and seeing what I wanted and selling off what I did not need.

Then I ran across the project again. Well, I had time and I finished it.

Up Front

Building Memories

Bob Davet, W8RID, was finally able to finish the project he and his dad started several years ago. They wanted to make two of these 3-500Z tube lamps (damaged tubes provided by RF Parts), one for each shack. Unfortunately, his dad, Robert E. Davet, W8JFQ (SK), passed away before the project was completed.

While sorting through some of his dad's old radio boxes, Bob came across the tubes along with all the parts. He pulled them out and rekindled the project.

Bob says, "Now every time I turn on my radio equipment, the tube lamp turns on and reminds me of who got me into this hobby."



[Bob Davet, W8RID, photo]

FREE TO A GOOD HOME: MFJ MFJ-1838 cobweb antenna (spreaders, mount, and balun only). Email n8wcp.us@gmail.com [08/25]

FOR SALE: Yaesu FT-818ND QRP Transceiver with: MH-31A8J Microphone, BNC Antenna with low and high ends, 8 AA cell battery box, 120 VAC charger, DC power cable, Heil microphone, footswitch adapter, 6 pin miniDIN to RG_45 Signalink Cable, carrying strap, manual, rtsystems YPS-818-USB programming software and cable, original factory box. \$500.00

Yaesu SCU-17 USB Interface Unit with External Sound Card and Rig (FT-818ND CAT) control with: manual, Cable 6 pin miniDIN to 6 pin miniDIN (sound card), Cable DB9 to 8 pin minDIN (FT-818ND CAT), Cable USB A to USB B, Cable DB9 to DB9, original factory box. \$100.00

FT-818ND and SCU-17 sold together \$550.00

AEA PK-96 9600 baud TNC with original factory manual, no cables. \$45.00

Contact Rick K8CAV at k8cav.com@gmail.com [08/25]

FOR SALE: Early Icom IC-7000 HF/VHF/UHF Transceiver. Very little usage. With MFJ-991B IntelliTuner Automatic antenna tuner including IC-7000 mating cable. \$600.00. Yaesu FT-8800 Dual Band FM transceiver 144/440 MHZ. \$200.00. Icom IC208H Dual Band FM transceiver 144/440 MHZ. \$200.00. Bencher Model ST-1 paddle key (black base) never used. \$50.00. Original boxes available. For pickup in Cuyahoga Falls. Contact Bob NT8K via email: rwhiddon@att.net [06/25]

FOR SALE: Yaesu FT-2000 160 - 6 Meter Transceiver with FH-2 Remote Control Keypad and CT-119 Programming Cable \$800.00 for everything. Original boxes are available. Geocron GEO-4K-COMP2 new in the box \$175. ARRL 10 - 40 Meter End Fed Antenna Kit new in the box \$50. MFJ-931 Artificial Ground \$100. Will consider reasonable offers. Contact Bob Hajdak N8QE at (330) 807-5903 or rhajdak@aol.com. [06/25]

For Sale or Want Ad policy reminder: This is a PCARS **members only benefit**. 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: [01/25] indicates the ad will run until the end of January 2025.

PCARS Custom Coffee Cups - LIMITED EDITION! - Get One Now!

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

Supply is limited. If you are a current (PAID) member of PCARS you get one coffee cup for **FREE!!** The only catch is that you have to claim it from the **Treasurer**. There is a list of current members and the treasurer will check off your name when you get your **FREE** PCARS coffee cup.



There are a **very limited number of extra coffee cups** for sale at \$5.00 each. **Contact the Treasurer for details:** treasurer@portcars.org

From The ARRL - Did You Know?

ARRL members and non-members alike can practice for their upcoming amateur radio licensing exam by visiting the ARRL Exam Review for Ham Radio™!

ARRL Exam Review includes all the questions for all three of the current FCC exam pools and provides different review options, so you can choose to review by chapter of the ARRL study manual or by question pool topic.

Short explanations are provided to help you understand the correct answer. The software also provides the option to produce—and print as many practice exams as you would like.

Thousands of unique visitors each month practice for their upcoming licensing exam on our Exam Review website and you should, too!

Visit the ARRL Exam Review website at www.arrlexamreview.appspot.com



ARRL
The national association for
AMATEUR RADIO®

PCARS is on YouTube

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

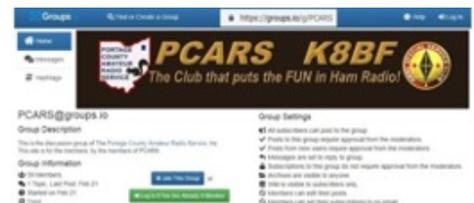
<https://youtube.com/@portagecountyamateurradios1933?si=09-NxUpDOoqdqTzc>



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>



John, WG8X



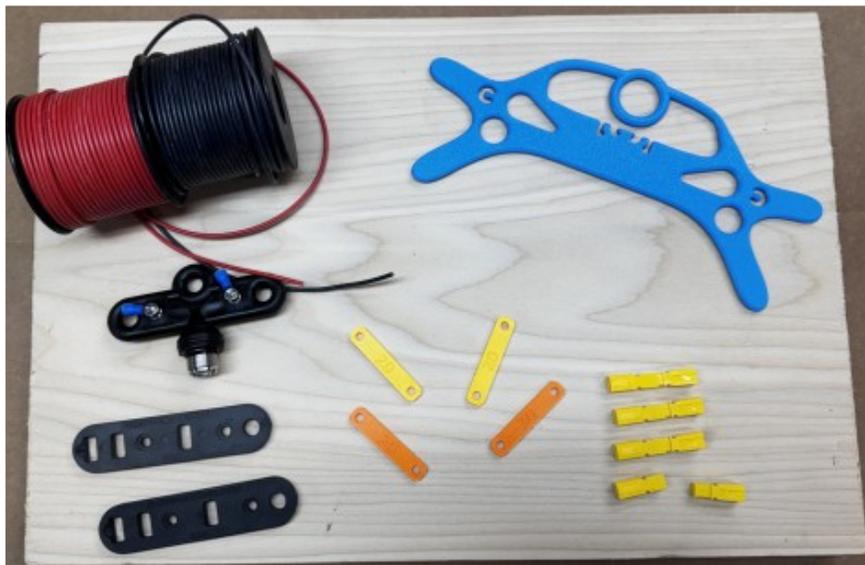
We have another group build coming up. This one on July 12th. It'll be a Saturday morning build which will run from 9am -12noon.

A linked dipole is a multi-band dipole where the radiator is cut into sections. Bands are changed by inserting or removing the proper sections.

I have a few of these, and love the simplicity of them. They're easy to build. No soldering; all the connections are done using crimped PowerPole connectors. We'll be using 18 gauge silicone wire, which is less prone to tangling. With the exception of the center insulator, all insulators are 3D printed.

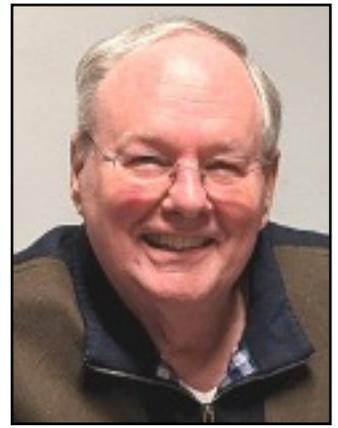
The cost is \$50 (\$51.52 via Paypal). Since I'm printing the parts, I need an accurate count of participants by July 1st. You can register on our website at portcars.org. There is a limit of 10 participants, so register early.

If you have questions, let me know at wg8x.radio@gmail.com



Golomb Ruler and Radio

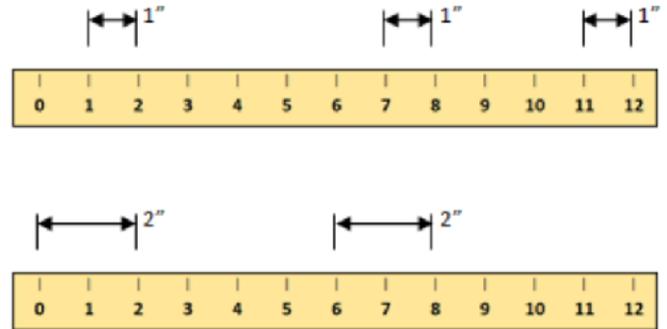
Jim, AC8NT



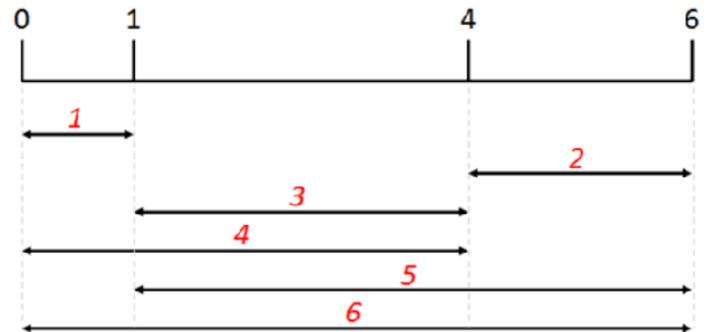
What is a Golomb Ruler?

We often in math and engineering find discoveries to eventually find use in science and engineering even if they seemed only to be curiosities at the time they were developed.

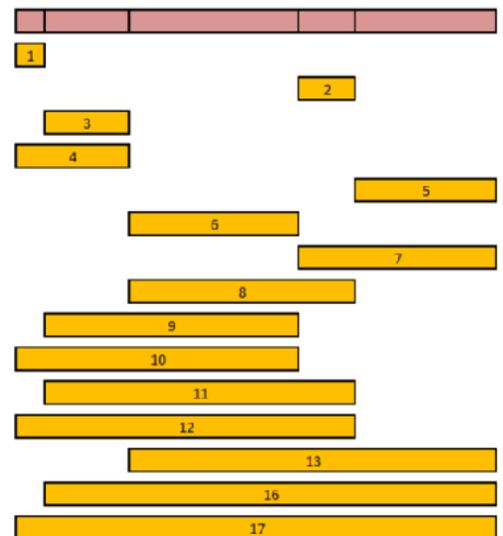
In the 1950's Solomon Golomb was working on the early study of what we now call graph theory. He is also said to believe that ambiguity was a real problem. He didn't like measurement systems that had more than one way to measure a parameter. His easiest example was the simple ruler. The diagram on the right shows that an item 1" long can be measured 12 different places on a 12" ruler and six places for a 2" item. Golomb thought it would be more efficient and less ambiguous if the ruler had only one way to measure an item's length.



He developed the Golomb ruler that could only measure integer lengths of items 1" to 6" one way. On the right we see his first ruler for measure integer inches from 1 to 6. If the item is 1" long, it can only be measured between 0 and 1. An item 3" long can only be measured between 1 and 4. As you can see there is only one way to measure the six possible lengths. Note also that none of the distances between marks are the same. This is the key point of these rulers. This ruler is called an order 4 ruler. The order of the ruler is the number of lines found on the ruler.



On the right you can see an order 6 ruler. Note you can't measure all integer length objects using the ruler. Items 14 and 15 inches long can't be measured. If all lengths can be measured the ruler is said to be perfect. The only perfect ruler is the order 4 ruler shown above. All other Golomb rulers have one or more lengths that can't be measured.

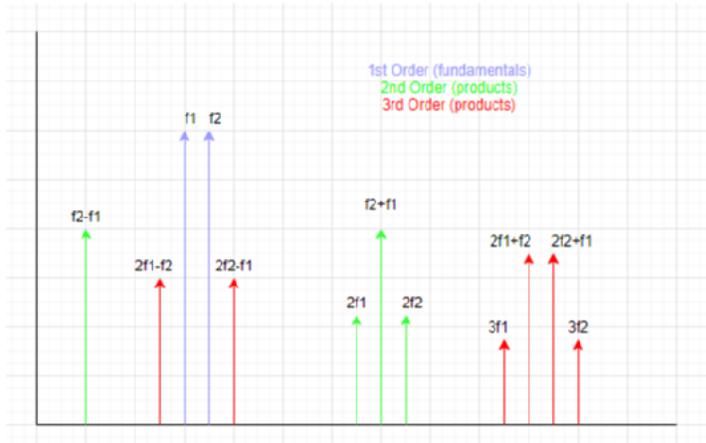


All this is fun and cute, but where does it go from here?

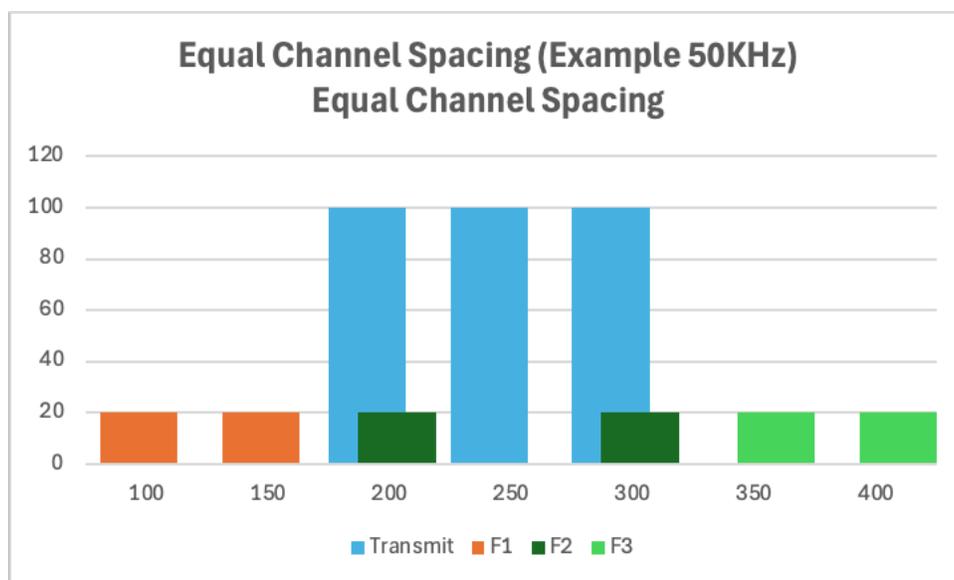
How does this relate to radio?

If you have recently taken your General test or have taken your Extra test you may have had to answer a question on intermodulation interference. Intermodulation interference in radio systems occurs when multiple signals interact in a non-linear device (like a receiver's mixer stage), generating new signals at frequencies that are not present in the original signals. These new signals, known as intermodulation products (IM products), can interfere or distort received signals.

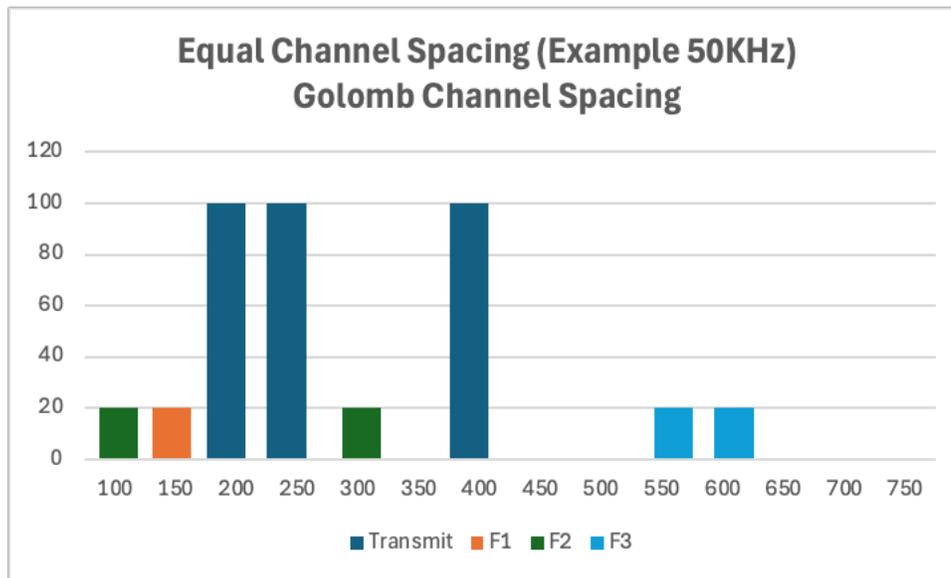
On the right you can see the spectrum of two signals f_1 and f_2 . You also see the intermodulation products for these two signals. You will note two signals at $2f_1 - f_2$ and $2f_2 - f_1$. These are very close to the signals we need to receive. They are so close that we may not be able to filter them out. The two signals ($2f_1 - f_2$ and $2f_2 - f_1$) are third order signals and most transmitters and receivers are designed to minimize their amplitudes. This is a simple example. In commercial broadcasting there are many signals that need to share a band. These groups can create real problems with all their IM products. W. C Babcock of Bell Labs in 1953 set out to find a spacing between signal that reduced or eliminated the effects of third order products. He found that if he spaced the frequencies using the system of spacing used by Golomb rulers, he could significantly reduce interference.



How about we look at an example? For simplification, I am plotting only the third order products that cause the most interference. In the figure below we see three frequencies noted by the tall bars. These frequencies are spaced at 50 KHz intervals. The shorter bars show significant third order products of these three signals. You see in the plot that some of these products are on top of one or more of the desired signals. Third order products of the 250 KHz signal are on top of the 200 and 300 KHz signals.



Now let's space the signals using Golomb spacing. If you look at our order 4 ruler we will now space our signals using the 0 line for 200 KHz, the 1 line for 250 KHz, and the 4 line for 400 KHz. You can easily see there is minimal interference. Golomb ruler sequences were used in large metropolitan areas to reduce interference in the 1950's and 1960's.



Other interesting facts

1. You may have seen arrays of dish antennas used for radio astronomy like those below. The antennas are often set out in straight lines with the distance between antennas in each line based on the Golomb pattern. This guarantees the distance between any two antennas to be unique. This allows a broad range of phase data to be received with a minimum of antennas and a minimum of error.



2. Although we have been talking about the Golomb ruler, Golomb is much more known for his work with graphs of groups of squares called Polyominoes. These graphs are used in many puzzles, patterns and games. The most famous game using these Polyominoes is Tetris. His work was key to the algorithms used for this and many other games.

A Closer Look At The Hermes Lite 2

Bob, KD8CGH



The Hermes-Lite 2 is a 160-10 meter, multi-mode, QRP, software defined HF transceiver. Physically it's a small (6" x 4 1/8" x 1 5/8") black box with an Ethernet socket and a few blinking lights. It's not a standalone transceiver, requiring a host computer running SDR software to function. Since it is open source you can build it on your own or you can get an HL2 by participating in a group buy from Makerfabs. The HL2 is \$226, the low pass filter board is \$53 and the case is \$17. All components are mounted. You have to drill a hole in the case for the heat sink and assemble the system.

The HL2 is a well refined product having about two decades of development behind it. Development started by a group of hams in 2005 and in 2008 the open source openHPSDR project gained support from The Tucson Amateur Packet Radio group (TAPR). Both hardware and software were developed together. The initial hardware was a set of boards which plugged into a backplane, like the old S100 bus computers. By 2012 Apache Labs was selling hardware for the first versions. Over time as the software was refined the hardware shrunk to a single board Hermes, then the Hermes Lite and finally the Hermes Lite 2.

You can find info at <http://hermeslite.com/> and support in the google group <https://groups.google.com/g/hermes-lite>. Other spin offs from the openHPSDR development include the Apache labs ANAN line of transceivers.

The main HL2 hardware and firmware development is carried out by Steve Haynal, KF7O. The add on low pass filter board was developed by James Ahlstrom, N2ADR, who also developed and supports Quisk SDR software.

The HL2 is a direct down/up conversion SDR. It communicates with a host computer over ethernet, which provides high speed communication and allows the HL2 to be remotely operated. Audio in and out is produced by the sound card and software running on the host computer attached to the HL2. The software also controls the HL2 and provides display usually including a spectrum and perhaps a waterfall. You can use virtual audio cables to communicate to other software like WSJT-X and fldigi and virtual serial ports for rig control like N1MM+ and Log4OM.

One reason it is inexpensive is that the DSP heavy lifting is done by a Cyclone 4 FPGA, This is a relatively low cost device as it is commonly used in cable modems and churned out by the millions. An AD9866 12 bit ADC is used that runs at 76.8 MHz and DAC that runs at 153.6 MHz and supports up to a 384 kHz swath of bandwidth in receive. Its main board is usually paired with a relay switched low pass filter board to produce clean transmissions.

Like the Flex transceivers, the HL2 supports multiple receiver slices. The current FPGA gateway supports up to four receiver slices. The wide receive bandwidth and multiple slices drives the need for a fast Ethernet connection. The HL2 operates in full duplex mode so that you can monitor your transmission through a built in sampling circuit. This opens the way to use predistortion software like PureSignal, also used in Flex and Apache transceivers, to actively predistort your signal to correct for PA distortions and generate excellent quality transmissions.

Multiple software applications support the HL2 including Quisk, SparkSDR, SDR Console, PowerSDR, Thetis, LinHPSDR and PiHPSDR. There are Windows, Linux and Raspberry Pi apps. They generally all support spectrum and waterfall displays, a wide range of filters, AGC, ALC and audio input monitoring. PowerSDR and Thetis both have HL2 specific versions. SDR Console is a beautiful, easy to use application by Simon Brown, the original developer of Ham Radio Deluxe, that supports the HL2 well.

The HL2 has provisions for IO add ons for controlling a fan, AH-4 tuners from Icom and LDG, external power amplifiers and general IO for experimenting General Purpose IO. A popular addition to the system is the Hard Rock 50 amplifier. Another addition is a set of band pass filters for the receiver.

In contrast to the excellent support for SSB transmission, the CW support of the HL2 is minimal. There is a jack on the HL2 for a straight key, but no built in keyer and side tone. Generating a side tone turns out to be more difficult than it might first appear because of latency. The time it takes for the key press to be processed by the HL2, travel through the Ethernet cable, be processed by the host computer software and activate the sound card is long enough to throw off all but the slowest CW sending. SDR Console does a better job of reducing latency than most, but still has no keyer or CW keyboard.

The solution for me was to install a HL2 companion board that adds a keyer, mic, headphone jack, amp interface, speaker, Icom AH4 ATU interface and power switch. This was developed by Robert Entwistle WA2T and Takashi JL1UDD. There is no noticeable latency with this approach. There is a smaller range of software available for the HL2 with companion but that fortunately includes Thetis and piHPSDR. Thetis grew out of PowerSDR from the original project and is also used by Apache Labs' Anan SDR transceivers.

Thetis software is extremely feature rich with good equalizers, a plethora of audio processing options and Pure Signal support. In addition to the usual noise reduction, noise blanker and notch filters there is an AI powered noise reduction function that does a really good job.

Thetis also has some wonderful features for CW, including an APF and "spot" tuning. The Audio Peaking Filter has a narrow peak but not sharp skirts. Signals within the peak are amplified, as opposed to outside attenuated with sharp skirts like a usual filter. It makes the CW pop out with little ringing and other artifacts you'd get with a narrow passband. The "spot" automatically tunes to center the signal in the passband - very handy with APF. There is also keyboard sending with macros.

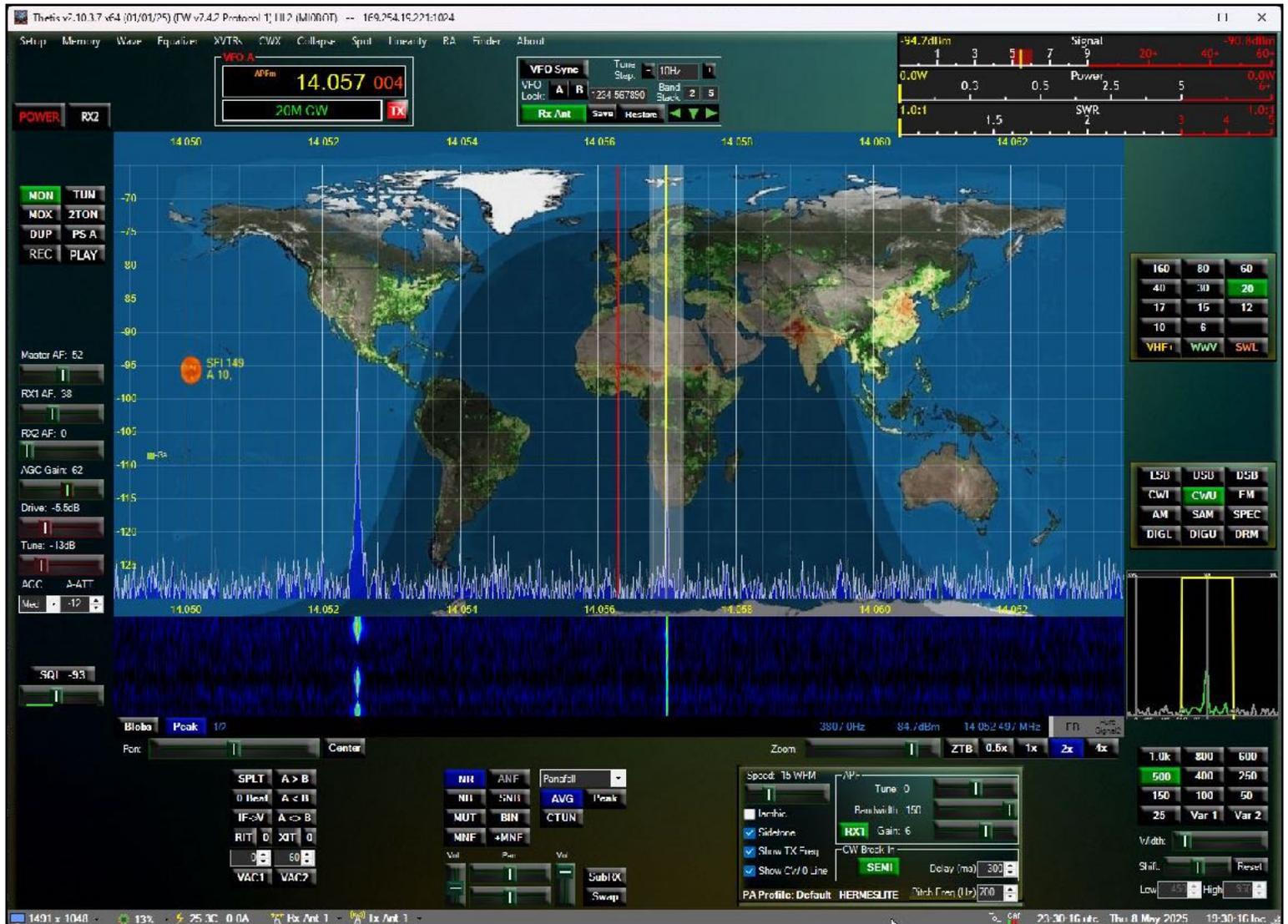
In addition to the usual SDR panadapter point and click tuning Thetis has the easiest to use tuning I have found. You change the tuning step implicitly by hovering your mouse pointer over a digit in the VFO window and scrolling. The digit you are over will change. You move effortlessly from Mhz to Hz step sizes.

Thetis makes it easy to use virtual com ports and audio cables. It also supports communication by TCP/IP, MIDI and the new TCI protocol.

The Thetis visual interface is highly customizable, from clean and simple to information packed. Want a "magic eye" tuning aid or classic cross needle meters? You can have it. My favorite is a small window that just shows the spectrum that is filter passband wide. You can see instantly how well you are tuned without having to zoom in the panadapter display. My panadapter background image is a world map with day/night show, shades of Geochron! You can also have spots listed on the panadapter at their frequencies.

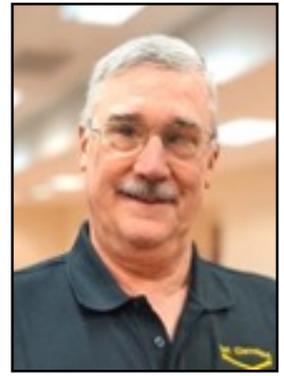
For Linux fans you can also run LinHPSDR and piHPSDR on a Raspberry Pi. I loaded piHPSDR on my Pi 5 and I found it similar to Thetis, as you would expect from their common root. The Pi had plenty of processing power to run smoothly.

IMHO the Hermes Lite 2 is an excellent value for a highly capable, full featured HF transceiver. The many years of refinement of the hardware and software by hams for hams has led to a great rig. When I need more power I couple mine to a HARDROCK 50 amp, yet another ham produced piece of solid gear, which is seamlessly controlled by the HL2. The HL2 is my favorite desktop rig.



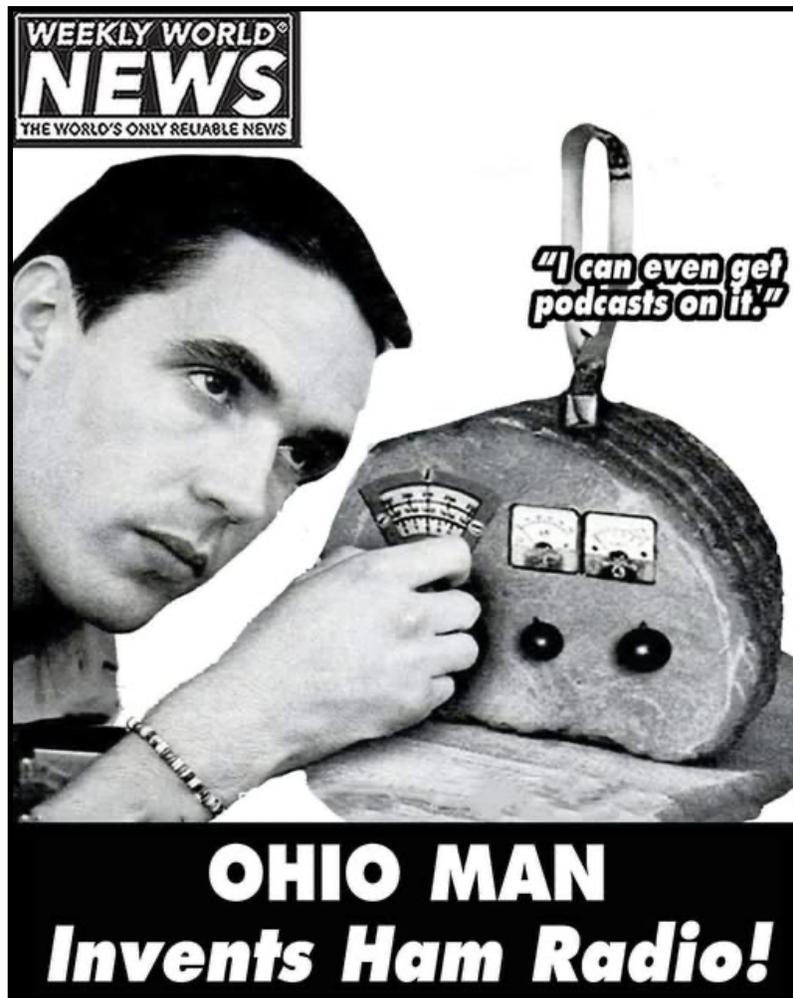
Headwaters Adventure Race Help Needed

Rick, K8CAV



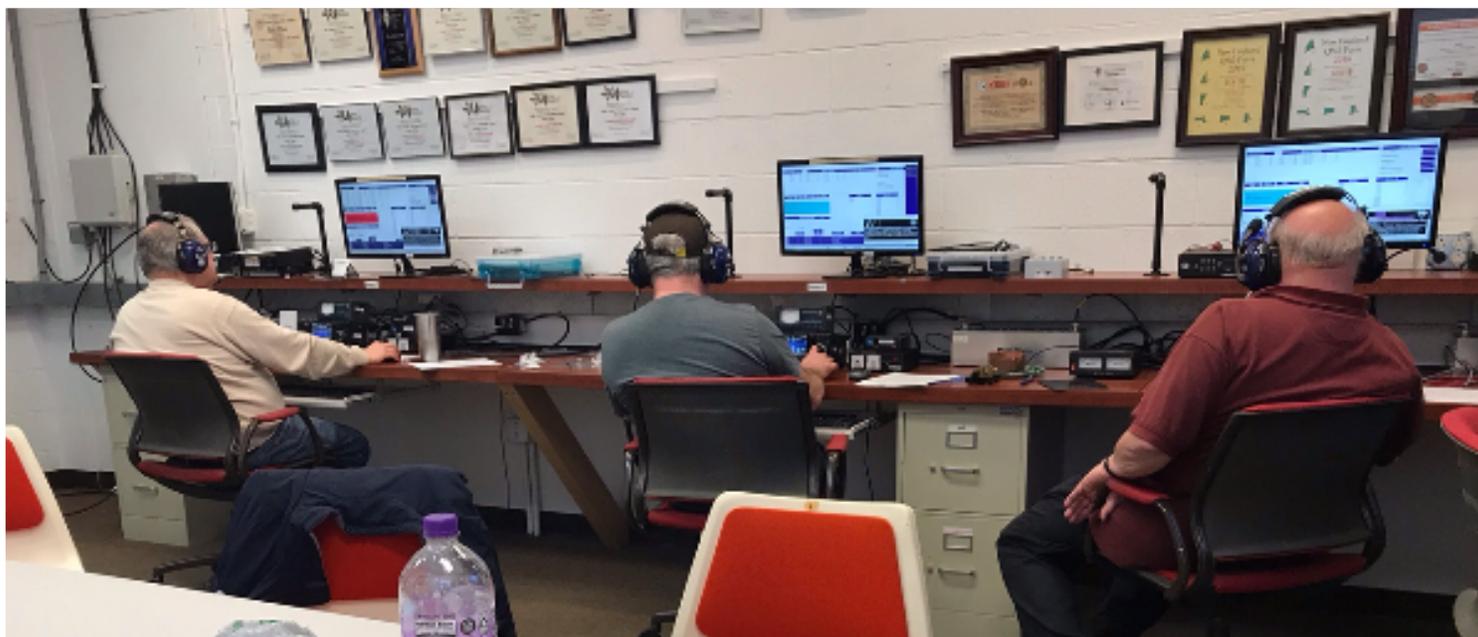
I still need one or two more volunteers to help out with communications support for the Headwaters Adventure Race on Saturday June 7th from 7:00 PM to approximately 12:30 PM. If you can help, please let me know as soon as possible by email at k8cav.coms@gmail.com

Just For Laughs...



Hat tip to Gene W8NET

NEQSOP & 7th Call Area QSOP Pictures



POTA Special Interest Group

Hi POTA fans!

Our next POTA SIG meeting will be on Tuesday, June 10, 2025 at PCARS World Headquarters in Ravenna @7:00pm.

We will be discussing our next POTA event - the Summer POTA Support Your Parks Event on Saturday July 19, 2025. We have reserved a shelter at West Branch State Park. More details coming after the meeting in a QST.

Cya in Ravenna!
73 de W8NET, Gene

Gene, W8NET
POTA SIG Coordinator



Digital Special Interest Group

There is no Digital Special Interest Group meeting for June.

The next meeting will be on Tuesday, July 1st at 7:00 PM. Details will be announced in the next newsletter and via QST email.

Rick, K8CAV
Digital SIG Coordinator



Linux and Raspberry Pi Special Interest Group

Welcome to the new Linux & Raspberry Pi SIG!

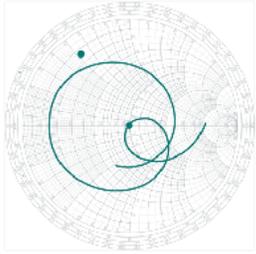
The inaugural meeting will be on Tuesday June 3, 2025 @7:00pm at PCARS World Headquarters in Ravenna. We will discuss Linux distribution options, Raspberry Pi models, and any other topics you might have.

I will have my Linux laptop and a couple of Raspberry Pi's. I will set up one. Some members have said that they will be there and willing to part with an extra Raspberry Pi! So, no excuses! This is your chance to get a Raspberry Pi and get your questions answered!

Gene, W8NET
Linux & Raspberry Pi SIG Coordinator

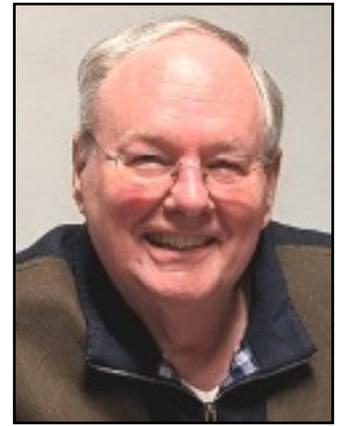


Antenna Special Interest Group



The next Antenna SIG will be held Tuesday June 17th at 7 PM at PCARS World Headquarters. This month we will be talking about Smith Charts, how they are used, and matching using SimSmith software. These are very useful tools and should help getting antennas we have built working better and designing new antennas easier. Come join in the fun.

Jim, AC8NT
Antenna SIG Coordinator



If you can't attend in person, please use the Zoom information below to join on line.

<https://zoom.us/j/96686108444?pwd=hN5hDgTGWwdLBLXkLSeAfVOfSa4nGq.1>

Meeting ID: 966 8610 8444
Passcode: 915088

DX & Contesting Special Interest Group

Greetings PCARS DXers and Contesters:

On Tuesday, May 27, we held our DX/Contesting Special Interest Group meeting at our World Headquarters. We had 10 attending either in person or by ZOOM.

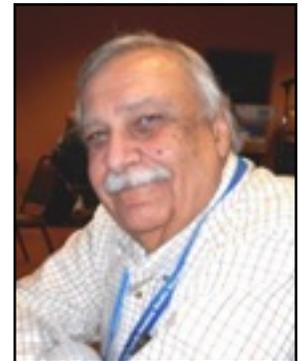
We reviewed what contests will be coming up in June that might be of some interest to us. The Kentucky QSO Party held the first full weekend of June as well as the West Virginia QSO Party held the weekend of June 21-22, are the only state QSO parties this month. As I have said before, these are perfect contests for the beginner since they are much slower paced than most other contests. You can hone your contesting skills by taking part in these types of events.

Of course, the big event is ARRL Field Day which always takes place the last full weekend of June. And of course, K8BF will be in full swing that weekend. So I'm hoping that we see a multitude of members taking part in this big event.

However, there is an event that also happens the first full weekend of June and that is the ARRL International Digital Contest. K8BF will be on the air from our HQ. The plan is to use this event as a training exercise for those who will be planning on manning the Digital station during Field Day. Rick, K8CAV, will be present for this event and Bob, N8QE and Ken, WA8LRW are going to be giving presentations and training as I understand it. So I encourage those who are interested in learning how FT8 works, to come out for this event. I know I will be there.

Until next month, 73
Chuck W8PT, PCARS Contest Coordinator

Chuck, W8PT
DX & Contesting SIG
Coordinator



PCARS Flex Net

Rick, K8CAV
Flex Net Coordinator



There is no PCARS Flex Net scheduled for June.

The next Flex Net will be on Wednesday July 8th at 8:00 PM. Details will be announced in the next newsletter and via QST email.

Charlie the Tuner's DX High-Lites

Chuck, W8PT
aka "Charlie the Tuner"



Greetings to all DXers:

Summer is in full swing. And that's only if it has stopped RAINING!! For crying out loud, you would think that we need to start building arks. My front and back yards have been mistaken for lakes by many creatures. I've seen raccoons washing their food in the ponds created by the rain. Well, maybe that's an exaggeration but enough is enough. Like many other HAMS, I have things to complete in the yard and I can't do that if it's raining or if the ground is so saturated that I have to wear Wellies to walk around.

Be that as it may, the DX is building and more DXpeditions are being announced. Let's hope they get to use something with a better signal than some I have tried to chase. Let's take a look at what will be happening in June and the near future.

As always, big thanks to: HA7VK, W2GD, JA1GZV, K6EI, DL5ON & The DX News Letter, DXNews.com, DX-World.Net, 425 DX News, DXNL.

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

Here's ClubLog's Top 10 Most wanted DXCC entities:

1. P5 DPRK (NORTH KOREA)
2. BS7H SCARBOROUGH REEF
3. CE0X SAN FELIX ISLANDS
4. BV9P PRATAS ISLAND
5. KH7K KURE ISLAND
6. KH3 JOHNSTON ISLAND
7. 3Y/P PETER 1 ISLAND
8. FT5/X KERGUELEN ISLAND
9. YV0 AVES ISLAND
10. 3Y/B BOUVET ISLAND

June...

3A, MONACO. Special event call sign 3A100A will be QRV until June 30 to commemorate the centenary of the IARU. Activity will be on 80 to 10 meters using CW, SSB, and various digital modes. QSL via LoTW.

3X, GUINEA. Reminder - Jean-Philippe, F1TMY is QRV as 3X1A from Conakry until mid-2026. Activity is on 80 to 6 meters, and on Satellite QO-100. QSL via ClubLog.

5R8, MADAGASCAR. Gianpi, IK1TTD will be active from Madagascar as **5R8TD** until June 11, 2025. Activity will take place from the following locations:

- **Nosy Be Island**, AF-057 – until June 4.
- Tsarabanjina Island, AF-057 – June 4-11.

QRV holiday-style on HF bands using vertical / end-fed antennas.

7P, LESOTHO. Reminder - Mark, KW4XJ and Arina, KO4PZT are QRV as 7P8AB and 7P8NB, respectively, until mid-2025. QSL via KW4XJ.

A9, BAHRAIN. Reminder - Members of the Bahrain Radio Club are active with special call sign A9100IARU the **first five days of each month** to celebrate the IARU's 100th anniversary. QSL via EC6DX.

BY, CHINA. Members of the Chinese Radio Amateurs Club are QRV as B100IARU until June 17 to commemorate the centenary of the IARU. QSL via LoTW.

C2, NAURU. Reminder - Phill, FK1TS is QRV as C21TS and plans to extend his stay until September 2025. Activity is currently on 80, 40, and 30 meters using FT8. QSL via LoTW.

DA, FEDERAL REPUBLIC OF GERMANY. Special call sign DM0LIMES is QRV until July 1 for German World Heritage Day. QSL via bureau.

EA5, PENYETA del MORO. EU-151 is an island off the east coast of Spain. Emil, DL8JJ got in touch to say he hopes to be active from Penyeta del Moro EU-151 as **EA5/DL8JJ** during June 7-9, 2025. QRV on 40-10m; SSB & CW (mainly CW) using an Elecraft KX2, IC-705, Eremit LiFePo4, Rick Westerman Inv. L special antenna.

FO, FRENCH POLYNESIA. Didier, F6BCW is QRV as TX5U from Tikehau Island, IOTA OC-066, until June 8. Activity is on 40 to 6 meters using CW and SSB. QSL via LoTW.

FP, MIQUELON IS. Eric, FP/KV1J will be again active from Miquelon Island, IOTA NA-032, 28 June - 14 July 2025. He will operate on 80 - 6m SSB, RTTY, CW, FT8 and FM Satellites. He will be active in Canada Day, Marconi Memorial and IARU Contests. QSL via home call, LOTW.

KH8, AMERICAN SAMOA. Bob, K0NR and Joyce, K0JJW will be QRV as KH8/K0NR and KH8/K0JJW, respectively, until June 9. Activity is primarily on 20 to 10 meters using SSB, FT8, and FT4 while activating various SOTA and POTA locations. QSL via LoTW.

J6, ST. LUCIA. Matts, SM0FPR will again be active from St Lucia as J6/SM0FPR until June 8, 2025. QRV holiday-style on CW, some SSB. Logs uploaded to Club Log. QSL via LoTW.

JD1, MINAMI TORISHIMA. Take, JG8NQJ is QRV as JG8NQJ/JD1 until June 20. Activity is in his spare time on the HF bands using CW and FT8. QSL via LoTW.

OK, CZECH REPUBLIC. Members of the Czech Radio Club are QRV with special call sign OL100IARU until the end of the year to celebrate the 100th anniversary of the IARU. Activity is on all bands and modes. QSL via operators' instructions.

OX, GREENLAND. Bo, OZ1DJJ will again be QRV from Nuuk, Greenland as **OX3LX** during June 5-22, 2025. He plans activity on HF bands + 4 & 6m. This is a work trip so only active when time permits. QSL via OZ0J.

PA, NETHERLANDS. Special event station PA40MARAC is QRV until December 31 to celebrate the 40th anniversary of the Dutch Marine Radio Amateur Club. QSL via PA3CNI.

PA, NETHERLANDS. Peter, PD1RP is QRV with special event station PD80FREE until June 30 to celebrate the 80 years of liberation since World War II. Activity is on 40, 20, 10, and 2 meters using CW, SSB, and digital modes. QSLs sent to all contacts via the bureau. No QSL or request needed.

TI, COSTA RICA. Guy, N7ZG is QRV as TI8/N7ZG from Playa Zancudo. His length of stay is unknown. This includes being a Single Op/All Band/High Power entry in the CQ World Wide WPX CW contest. QSL via EA3GL.

TR, GABON. Roland, F8EN is QRV as TR8CR until mid June. Activity is on the HF bands using only CW. QSL direct to F6AJA.

V5, NAMIBIA. Remo, HB9SHD is QRV as V51/HB9SHD until June 15. Activity is holiday style on 40 to 6 meters using SSB and various digital modes. QSL via LoTW.

VP8, FLAKLAND ISLANDS. Gerard VK4BGL/G3WIP will be active as VP8DPD from Falkland Islands, IOTA SA-002, 10 May - 12 July 2025. He will operate on HF Bands. QSL via G3WIP buro, LOTW, eQSL.

VP9, BERMUDA ISLANDS. Kyle Chavis, WA4PGM will be active again from Bermuda Islands, IOTA NA - 005, 10 - 17 June 2025, as VP9/WA4PGM. He will operate on HF Bands. QSL via home call, LOTW. He is planning to activate some POTA references.

VR, HONG KONG. Members of the Hong Kong Amateur Radio Transmitting Society are active with special call sign VR100IARU until December 2025 to celebrate the centenary of the IARU. QSL via bureau.

ZC, CYPRUS. Dave, G4WXJ will be active as ZC4RH from Cyprus, IOTA AS - 004, 14 - 20 June 2025. He will operate on 40 - 6m Bands, FT8, FT4, SSB, CW.

ZS, SOUTH AFRICA. Special event stations ZS100SARL, ZS6SRL, and ZS9HQ are QRV during all of 2025 to celebrate the 100th anniversary of the South African Relay League. QSL via LoTW.

Looking Ahead & Other Reminders...

3G0, SAN AMBROSIO IS. 3G0XQ Team will be active from San Ambrosio Island, IOTA SA - 013, in October 2025. Team leader XQ7IR. San Ambrosio and San Felix Islands are small volcanic islands in the Chilean Oceanic Trench, located 900 km off the coast of Chile.

9U1, BURUNDI. 9U1RU Team will be active from Burundi, 31 October - 20 November 2025. They will operate on 160 - 6m, CW, SSB, Digital Modes. QSL via ClubLog OQRS.

D4, CAPE VERDE. A group of operators are QRV with special event call sign D450ICV until December 31 to celebrate the 50th anniversary of the independence of Cape Verde. Activity is on all bands and modes. QSL via LoTW.

JA, JAPAN. Members of the Japan Amateur Radio League are QRV with special commemorative station 8K3EXPO from the 2025 Expo in Osaka, Kansai until October 13. Activity will be on all bands. In addition, station JA3XPO is also active. QSL via operators' instructions.

OE, AUSTRIA. Special event call sign OE100OEVSU is QRV until December 31, 2025 to celebrate the 100th anniversary of the Austrian Amateur Radio Society. QSL via bureau.

PJ6, SABA IS. We are thrilled to announce that October 17-29, 2025, a dedicated team of 12-14 operators will activate **PJ6Y** from the stunning **Saba Island, IOTA NA-145**. This expedition represents a significant step in our ongoing mission to inspire and mentor the next generation of amateur radio operators through hands-on DXpedition experiences. The on-island team will establish three local stations plus two remote stations from the ground up, we will be active on CW, SSB, and FT8 on 160m to 6m, including operations from a satellite station.

T33, BANABA IS. In November 2022, the [Rebel DX Group](#) were QRV from Banaba as [T33T](#). This year, in September, they plan to return there staying for up to 3 weeks and active this time as T33TT. Full details to follow, but you can expect plenty of FT8 on HF bands plus some CW & SSB. QSL via Club Log OQRS / LoTW.

T88, PALAU. Yasu, JH2DFJ will be active again as T88DF from Palau, 2 - 17 September 2025. He will be active on HF Bands CW (QRSS), SSB, RTTY, SSTV, WSPR, JT65A. QSL via home call buro, direct, LOTW, eQSL.

V7, MARSHALL ISLANDS. Randall, KX4QD is QRV as V73HW for the next two years. Activity is in his spare time on 80, 40, 20, 15, and 10 meters using SSB and FT8. QSL direct to home call.

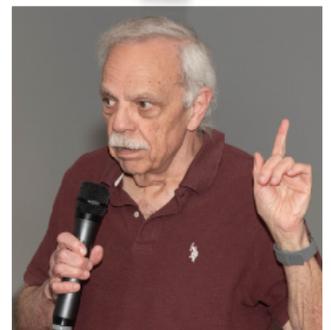
VR2, HONG KONG. Members of the Hong Kong Amateur Radio Transmitting Society are QRV as VR100IARU until December to commemorate the centenary of the IARU. QSL via bureau.

Disclaimer: As you know by now, these DX events can change due to various reasons that sometimes are out of the control of those who are doing the planning. Be patient. I'm hoping that you use this info to hunt down your ATNO or simply to work some DX before your rigs become boat anchors or you become a boat anchor!

Come on....get on the air and work some DX!! As I always say, "Wobble the ethers."
73 for now....*Chuck W8PT aka Charlie the Tuner*



PCARS May Meeting



Mark Your Calendar!

PCARS February 2025 Schedule of Events

June 2nd	PCARS Board Meeting
June 7th	VE Test Session
June 9th	PCARS Monthly Meeting - 7 PM
June 26th	Net Night at the Club Site - 6:30 PM - 10:00 PM
June 28-29th	ARRL Field Day

Special Interest Groups at the Club Site

1st Tuesday Odd Months	Digital Special Interest Group - Moderator: Rick, K8CAV
1st Tuesday Even Months	Linux & Raspberry Pi Special Interest Group - Moderator: Gene, W8NET
2nd Tuesday	Portable Ops Special Interest Group - Moderator: Gene, W8NET
3rd Tuesday	Antenna Special Interest Group - Moderator: Jim, AC8NT
4th Tuesday	DX & Contest Special Interest Group - Moderator: Chuck, W8PT
5th Tuesday	Could Be Anything Special Interest Group - Moderator: Rick, KD8WCK

Hamfest Calendar

06/07 – FCARC Summer Hamfest - Location: Delta, OH - <https://k8bxq.org/hamfest>

07/19 - NOARSfest - Location: Elyria, OH - <https://www.noars.net/hamfests/noarsfest/>



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 Red, Black, and Blue. Cost for a patch is \$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. Reach out to the club treasurer for details.



PCARS T-Shirts, Polo Shirts, Jackets, Hats, etc. can be obtained from:
Villager Business Solutions - attn. Michelle Zivoder - michelle@villagerbusiness.com - 330-472-7304.

PCARS Ham Radio License Plates Wanted!

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 over 80 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*.

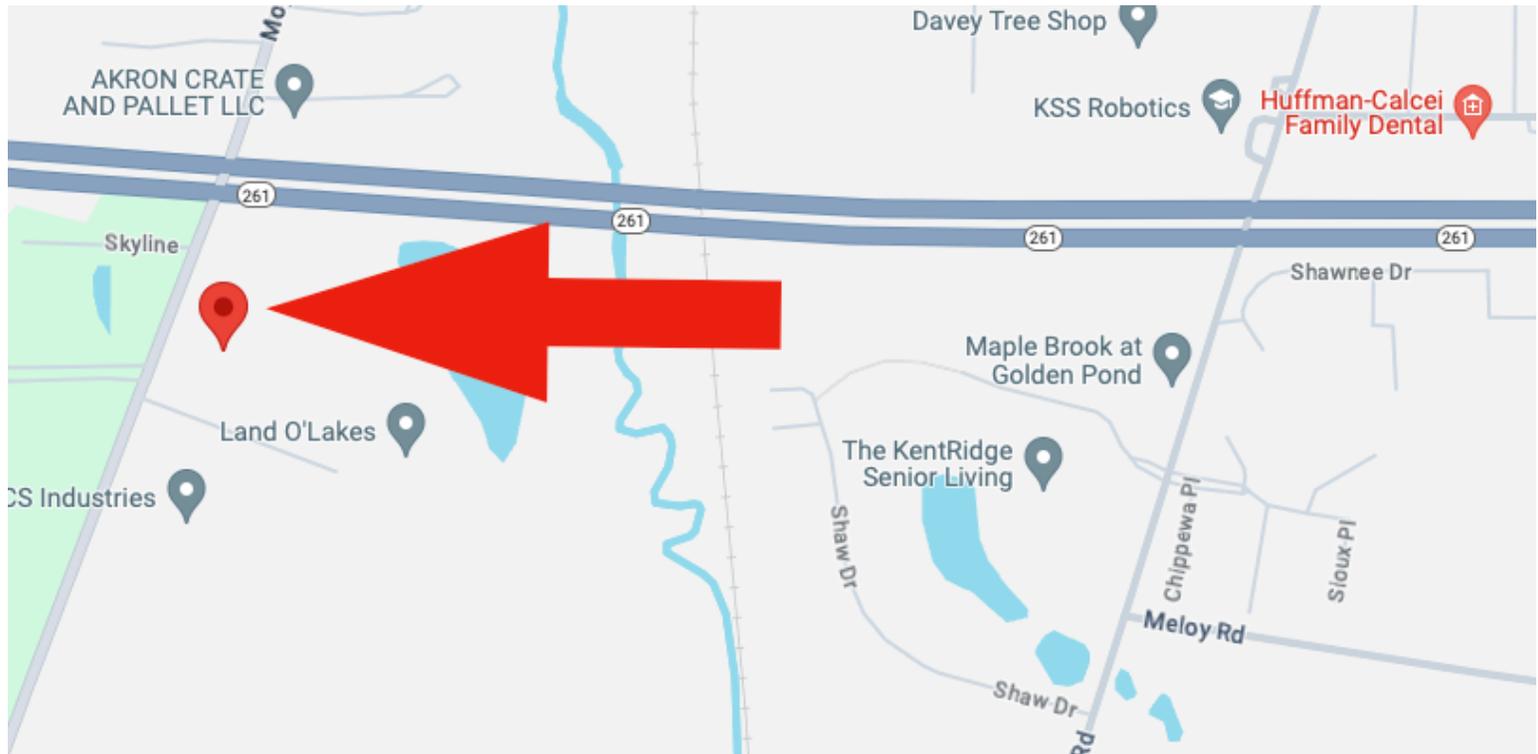
All plates will be mailed directly to the address on your registration card. The deputy will issue your registration card, stickers and provide you with a permit which will allow you to operate your vehicle while your plates are being manufactured. Special license plate applications are available at 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 Meetings



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

**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 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 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.

PCARS VE Testing Information & News



Future Dates:

- June 7th
- August 2nd
- October 4th
- December 6th

Check the website for the latest information

Tom, KB8UUZ
PCARS VE Team Liaison



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 or an upgrade to your existing license. Face masks are not State/County mandated at this time, but you are always welcome to wear one.

PCARS VE sessions are scheduled for **9:45 am** Registration, **10:00 am** Testing starts, on the first Saturday of every even numbered month at the PCARS club site in Ravenna.

Any questions? Contact KB8UUZ@gmail.com

Quick Facts

- **Yes**, PCARS VE test Sessions are held at the club site in Ravenna starting at 10 am - see schedule.
- **Walk-Ins are accepted**. Would appreciate an email to KB8UUZ@GMAIL.COM if you plan on attending.
- You **MUST** have an **FRN Number** (SSNs no longer accepted) **Taking Technician Test?** - You **MUST** apply for your **FRN** and get it prior to testing
- You **MUST** have a **valid e-mail address** for the FCC to be able to contact you.
- Picture ID required
- Original and Copy of your valid FCC license and originals of any applicable CSCE
- **VE fee is \$15** - Cash or Check payable to "ARRL-VEC"
- FCC License Fee \$35 - payable after FCC sends you a link. DOES NOT APPLY to upgrades
- **17 years old or younger? VE Fee is \$5** per the ARRL reduced CE fee Youth Program
- 17 years old or younger? ARRL will reimburse you the \$35 FCC Fee

Okay - Now **All** the Details:

- If you are sick, have a cough, a high temperature or have been exposed to COVID-19 or other communicable germs, or someone that has been infected - please, *do not* come to the club site. *Use of masks is optional*.
- No food or snacks allowed.
- 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).
- 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.
- Calculators are okay to use (if you need one) as long as the memories are cleared.
- NO cell Phones allowed.

First-Time Exam Applicants MUST Obtain FCC Registration Number BEFORE Taking Exam - 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/>

Email Addresses REQUIRED - All applications are 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 via regular mail.

FCC - \$35 Amateur Application Fee - The Federal Communications Commission (FCC) staff has clarified in response to an ARRL request that the new \$35 application fee will **not apply to upgrade to an amateur radio licensee's operator class and changes to club station trustees**. The new fees will apply only to applications for a **new license, renewal, rule waiver, or a new vanity call sign**.

VECs and Volunteer Examiner (VE) teams will not collect the \$35 fee at exam sessions. New applicants will pay the \$15 exam session fee to the ARRL VE team as usual.

When the FCC receives the examination information from the VEC, it will email a link with payment instructions to each successful candidate. The candidate will have **10 calendar days**, from the date of the application file number being issued, 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.

Youth Licensing Grant Program - The ARRL Youth Licensing Grant Program, in effect since April 19, 2022, will cover the one-time \$35 application fee for **new** amateur radio license candidates **17 years old or younger** for tests administered under the ARRL Volunteer Examiner Coordinator (VEC) program. The \$35 Federal Communications Commission (FCC) application fee will be reimbursed after the ARRL VEC receives the completed reimbursement form and after the new license has been issued. The reimbursement check will be mailed to the fee payer. Also, candidates 17 years old or younger would pay a reduced exam session fee of \$5 to the ARRL VE team at the time of the exam. The \$5 fee is for all candidates 17 years old or younger, regardless of the exam level taken. Proof of under 18 status is required.

Visit the ARRL website for the program instructions and reimbursement form at www.arrl.org/youth-licensing-grant-program.

Printing Your FCC License

Information provided by Anthony Luscre, K8ZT

As of February 17, 2015, the **FCC no longer routinely issues paper license documents** to Amateur Radio applicants and licensees. The Commission has maintained for some time now that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS). The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one.

Licensees also will be able to print out an official authorization — as well as an unofficial “reference copy” — from the ULS License Manager.

I've created a set of instructions on how you can request an “**official**” **printed copy of your license***
[Click here to download the instructions](#)

J.C., KC8JC
PCARS Newsletter Editor



It's hard to believe that it's June already! And we all know what that means: Field Day! I'd like to encourage every member of the club to get out to Field Day with PCARS in whatever capacity you can. It's a great time even if you only stop by for a little bit to say Hello. Bring along some friends or family to get on the GOTA station or check out the various stations. I know that I always enjoy a little time operating with AC8NT (aka my dad).

Along with Field Day, we have more daylight and better weather for getting out there and playing radio in The Big Blue Room. I highly recommend it for good mental health and general stress relief. For an additional challenge, bike out to the park if you can!

Thank you to all of those who sent inputs for this month's issue:

**AC8NT, K8CAV, KA8TOA, KB8UUZ, N8WCP, W8HFY, W8NET
W8PT, W8RID, WA8AR, WA8LRW, WG8X and the World Wide Web.**

Send all of your inputs to me at KC8JC@portcars.org in the form of plain text and full-size photos. We really want to hear what you're up to and what you've come across in the hobby that has your attention.

Remember: With **YOUR** continued help, **WE** can keep making this a **GREAT** newsletter!



Does the grease go on the bike chain or the paddles? I can't remember.

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 PL 118.8 in Sugar Bush Knolls. - EchoLink Node: K8BF-L

Check PCARS out on the web: www.PORTCARS.org

2025 PCARS Officers

President - Jim Wilson - AC8NT
 Vice President - Russ Williams - NR8W
 Treasurer - Paul Hyland - KE8EGF
 1 Year Trustee - Mike Ryan - KB8TUY
 2 Year Trustee - Gene Marsh - W8NET
 3 Year Trustee - Tom Parkinson - KB8UUZ
 Past President - Mike Gonzalez - KP4VZ

2025 PCARS Appointments & Committees

ARRL Awards DXCC	W8KNO	Joe Wehner
Club Site Management	K8CAV	Rick Kruis
Contest Coordinator	W8PT	Chuck Patellis
EchoLink	AC8NT	Jim Wilson
Field Day Chairman	WA8AR	Tony Romito
FYAO Chairman	W8PT	Chuck Patellis
K8BF Callsign Trustee	N8QE	Bob Hajdak
K8BF QSL Manager	N8QE	Bob Hajdak
Membership Chairman	-	-
Net Control Coordinator	KA8TOA	Greg Ash
Newsletter Editor	KC8JC	J.C. Wilson
OSPOTA Chairman	KB8UUZ	Tom Parkinson
PCARS Photographer	-	-
Public Information Officer	-	-
Secretary	AD8IR	Agnes Wagner
Social Media	N8WCP	Mike Szabo
Tech, Gen, & Extra Class Mgr.	AC8NT	Jim Wilson
Volunteer Examiner Liaison	KB8UUZ	Tom Parkinson
Webmaster	KP4VZ	Mike Gonzalez
POTA Coordinator	KE8ARB	Brandon Mercer



Active
PCARS
Volunteer
Examiner
Team
Members

KB8UUZ	Tom Parkinson
AC8NT	Jim Wilson
AC8QG	Nick Wagner
N8QE	Bob Hajdak
KA8TOA	Greg Ash
WA8CCU	Al Nagy
N8FUM	Dan Torchia
KC8JC	J.C. Wilson
W8EC	Mark Haas
K8IG	Fred Freer
W8HFZ	Tim McLeod
K8PJW	Phil Weiss
N8XTH	Deron Boring
K8IV	Ed Polack
N8AMY	Amy Leggiero
W8PT	Chuck Patellis
KP4VZ	Mike Gonzalez

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliation
April 20, 2006



Special Service Club
March 22, 2010

THE RADIOGRAM

The RADIOGRAM copyright ©2025, is the official newsletter of the Portage County Amateur Radio Service, Inc. (PCARS). The RADIOGRAM is an Award Winning newsletter: ARRL Ohio Section Newsletter - Fourth Place 2024 - Third Place 2015, 2022 - Second Place 2014, 2016, 2020 - First Place 2012, 2013, 2017, 2018, 2019, 2021, 2023. 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 KC8JC@portcars.org. The RADIOGRAM always obtains written permission for reproducing copyright material. The RADIOGRAM comes out the first day of each month (usually). 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. Legend has it that some of these little guys and gals got loose from Kent State University back in 1961 and they migrated and thrived throughout our county. Look into the black squirrel legends and see what you find! 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: KC8JC@portcars.org

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