



The **RADIOGRAM**

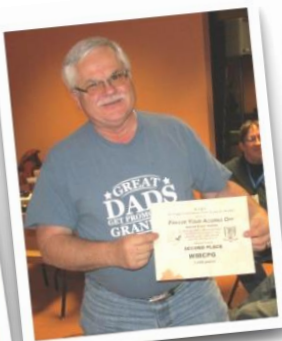
When All Else Fails ~ Amateur Radio Works

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

PCARS - the 2018 Hamvention® Club of The Year

March 2019 - Volume 14 Number 3

2019 FYAO Results are out



FYAO 2019

Feb. 9th
Fun in the park



Carole Perry
WB2MGP
to visit
PCARS



PCARS K8BF

The Club that puts the FUN in Ham Radio!



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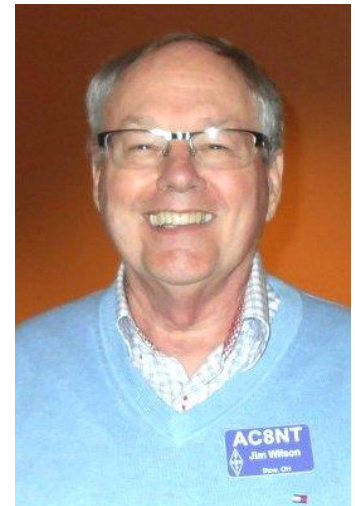
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From the President

Jim, AC8NT
PCARS President



Another month has passed. A short month with a lot of activity. We had FYAO; an outstanding presentation at the monthly meeting by Hans Summers; the start of one of our most diverse technician classes; and an event to show budding new hams what it takes to get on the air. All in a few weeks. Lots happened.

FYAO

Freeze Your Acorns Off was cold this year. We had a good turnout for operating QRP and some outstanding food to taste. A great time was had by all that attended. My LNR rig died the week before so I missed operating, but I sure enjoyed the conversation and food. We have a membership that loves to operate and have fun at these events. If you don't attend our events, you are missing some serious fun.

Meetings and Events



Nick our VP will cover upcoming events and meetings.

But I would like to note that we had an outstanding presentation by Hans Summers talking about his new QRP SSB transceiver from his home in Turkey. If you missed the presentation you can find see the slides at the following link:

https://drive.google.com/open?id=1h5OpPSeHPG42bKfi3yLuI9FB_Y3RbGVk

We have some great speakers coming up this year. We have presenters talking about getting more people involved in our hobby, some technical presentations and maybe even a Skype from far flung places including Antarctica and Australia. Lots to come at our upcoming meetings. If you know a ham that is not a member or someone that is interested in the hobby, please invite them to a meeting and introduce them to our membership. Everyone is welcome.

We have changed a couple of things in the way we run our monthly meetings. You will sign in at the sign-in table as you arrive; view the 50/50 prizes next to the sign-in table; and purchase your 50/50 tickets at the sign-in table as you enter. These changes will streamline our meeting and control the starting of our speakers.

Special March Meeting

Just a reminder we are having Carole Perry, WB2MGP as our speaker at the March monthly meeting. Her career as an educator has focused on including ham radio in the teaching of science and math classes. She has worked tirelessly to get more youth interested in our hobby and will be helping us understand just how we can grow our numbers in this age group. We are inviting anyone interested in science education or ham radio to this meeting. Her talk will start at 8:00 PM sharp. Those interested in her talk but that don't want to attend the business part of the meeting should show up a few minutes before 8. We will be holding the meeting in the big room of the American Legion to allow for ample seating.



New Technician Class

We started a new Technician Class this month. We have twelve students that range from young students to adults. A great class of people interested in our hobby for a number of reasons ranging from being able to talk with friends using 2 meters to using high power for First Person Viewing from drones. We also added a new event to our Tech Class offering. On Saturday February 16th we held a half-day session to show the students what it takes to get on the air and offered them a chance to make their first contact. We had demonstrations showing setup and the equipment required, antenna adjustment, FT8 operations, 20 meter operations and allowed them to make a simplex contact on 2 meters. I think everyone had a good time. I want to thank all our members that showed up to help make this a great addition to our training efforts. We are planning more of these events to introduce newcomers to the hobby and improve the number of new hams that actually get on the air.



Our New 7300's and Digital Modes

A few of us spent some interesting quality time getting our 7300 rigs setup for digital modes including



RTTY, FT8 and several messaging modes. I want to thank Rick, K8CAV and George, K3GP for their help in getting these modes operational. We discovered a few “undocumented” features of the 7300 including the need to reboot the rig after making certain changes to the settings. We are creating a library of these setups including both the files that are installed to configure the 7300 and instructions to setup the PC software to support these modes. It will help support the 7300's of our members and provide rapid setup for

club contests. I highly recommend you attend our Digital and Contesting SIGS to learn more about our new rigs and these great digital modes. We are also planning more training session in the use of our club rigs in the future. Watch the calendar and your QSTs for details.

Final Note

Please check our club calendar at our website (www.portcars.org) and our QSTs to see all our upcoming activities. I also highly recommend you attend any or all of our Special Interest Groups. There is a lot of help and information available through these meeting. Wish you all great contacts and hope you have a lot of fun with this great hobby.



From the Vice President

Nick, AC8QG
PCARS Vice President



We're already through February, but boy what a start to the year! We just experienced another excellent presentation for our second meeting of 2019, this time from Hans Summers G0UPL about his latest project for QRP-Labs! Next up for March is the highly anticipated Carole Perry WB2MGP! It was also had a lot of fun going out to Freeze Your Acorns Off! I didn't personally freeze anything off this year, but I still enjoyed the time as an observer.



A big thank you to all the volunteers for the ongoing Technician Class! I have two children who are participating and having a blast and more importantly learning a ton. They've really been inspired to put in the necessary work between classes, so hopefully, in a few weeks, they'll be holding CSCEs with their names on them. Sharing this hobby with my kids is turning into an absolutely incredible experience!

Over the next several months, there are a lot of opportunities to take advantage of everything PCARS has to offer. You're already reading this newsletter, so go a bit further and check out what's coming up for monthly meetings, SIGs, contests, and other events. Keep an eye out for QST emails, too. That system seems to be working well, and it's the best way to get last minute updates.

Fun is contagious, and this club is "big fun" in so many ways! I think that's why I can't stop coming back for more. I want everybody in PCARS to have a great time with me, so I welcome any and all ideas. Please let me know how I can help you have the best experience possible!

Upcoming Monthly Meetings

We're rapidly filling up the calendar for our monthly meetings. Here is the schedule for the next few months:

March: Carole Perry, WB2MGP will talk about how to get youth interested in ham radio. We've invited other ham radio clubs, IEEE members, and teachers throughout the area. There should be a good turnout!

April: Michael Kalter, W8CI will tell us all about the work required to make Hamvention possible.

May: Jim Storms, AB8YK is speaking about Youth DX Adventures.

There's a lot more to come in the months to follow, so stay tuned! Upcoming topics we're finalizing include a **presentation from Australia, Fox Hunting, a Skype from an Antarctica ham station, an AMSAT presentation on satellite modes and Bob Heil on audio.**

I want to thank everyone who helped build out this schedule. I appreciate all the work that several people have contributed to keep our meetings fun and interesting! We always welcome suggestions on future presentation ideas. Please let me know if there's a particular topic that interests you!

Schedule of Events



On the calendar for upcoming meetings and activities are:



- March 4th - Board Meeting at the club site - 7 pm
- March 9-10th - Wisconsin and Idaho QSO Parties - at the club site in Ravenna
- March 11th - PCARS Meeting at the American Legion in Kent - 7 pm
- March 23rd - 2 meter Yagi build at the club site - 9 am to 1 pm
- March 27th - VE Testing at the club site for Tech Class - 7 pm - walk-ins welcome
- April 1st - Board Meeting at the club site - 7 pm
- April 6th - VE Testing at the club site in Ravenna - Starts at 10 am - Walk-ins Welcome
- April 8th - PCARS Meeting at the American Legion in Kent - 7 pm
- April 27th - Florida QSO Party - at the club site in Ravenna

Special Interest Groups (SIGs) - Every Month at the Club Site in Ravenna - 7:00 pm



- | | | |
|-----------------|---|--|
| First Tuesday | - | Digital - Moderator: Rick, K8CAV |
| Second Tuesday | - | QRP/CW - Moderator: Terry, KB8AMZ |
| Third Tuesday | - | Antenna - Moderator: Tony, WA8AR - starts at 7:30 pm |
| Fourth Tuesday | - | DX & Contest - Moderator: Chuck, W8PT |
| Fifth Tuesday | - | Linux for Hams - Moderator: Terry, KB8AMZ |
| Fourth Thursday | - | Net Night at the club site - 6:30 pm |

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

Discover the many benefits of joining ARRL!

Membership Benefits

<http://www.arrl.org/join>

Make Amateur Radio Exciting in

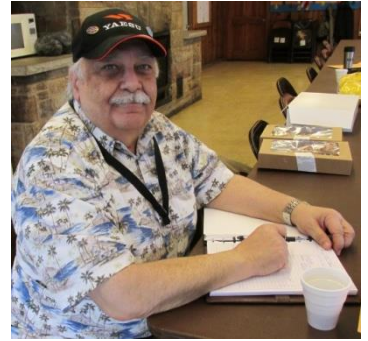
2019

Upgrade Today!

<http://www.arrl.org/shop/Upgrade/>

14th Annual FYAO - Fun in the Park

Chuck, W8PT
FYAO Chairman



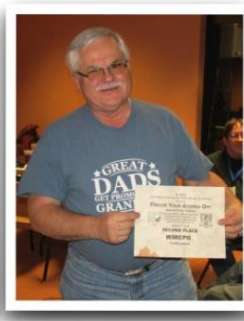
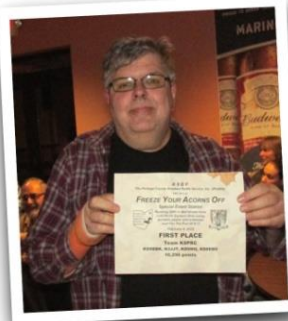
We held our 14th Annual **Freeze Your Acorns Off** QRP event on February 9th. The weather started out cold and clear but it turned overcast and started to snow fairly hard during the afternoon.

Thankfully, that didn't deter visitors and participants. We had at least 31 people sign the guest list, including those who set up 5 operating stations.

There was no way to tell how the bands were going to treat those who were operating but as you will see, the propagation was very good for at least one station. Here are the final results:

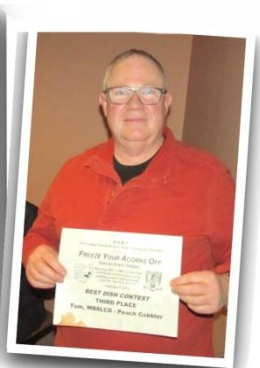
Operations Results:

- 1st Place - K8PRC (KD8BBK, N3JJT, KD8MQ, KD8ENV) Score: 10,296**
- 2nd Place - WB8CPG Score: 1,428**
- 3rd Place - WB8LCD Score: 722**
- 4th Place - WA8TSI Score: 149**
- 5th Place - WD8DAU - 41**



We also have a contest within a contest with our Best Recipe Cook-Off, and the results this year are as follows:

- 1st Place - K8IV - Sloppy Joes**
- 2nd Place - K8KSU - Sweet Kilbasi**
- 3rd Place - TIE - KD8MQ - Spicy Chili & WB8LCD - Peach Cobbler cooked on site**



Other Entrants in the Best Recipe Cook-Off: N8HUC - Buffalo Chili, WB8CPG - Meat Balls, Tie: WA8TSI - Pasta & AC8QG - King Cake, WB8CPG - Pistachio Pudding

All in all, we had a really great time and are looking forward to FYAO 2020. Plan on attending next year. You'll have fun and be well fed.



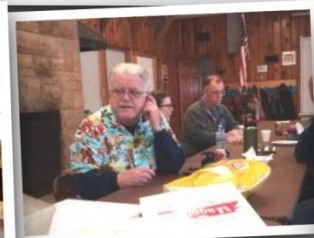
14th Annual FYAO - February 9th Pictures



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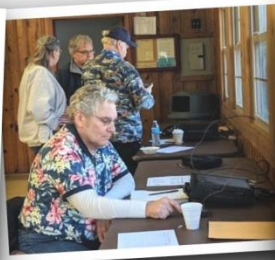


14th Annual FYAO - February 9th Pictures



FYAO-2019

14th Annual FYAO - February 9th Pictures



FYAO
2019

March Meeting

Tom, WB8LCD



We've been talking a lot about the March PCARS meeting (coming up in just a couple of weeks). Having a speaker such as Carole Perry – WB2MGP – come to present at our meeting is A VERY BIG DEAL! I would hope for nothing less than a huge turnout of PCARS members for this meeting. I know that everyone of you who attends will leave feeling it was time well spent. However, Carole's mission in coming to NE Ohio is much bigger than to just put on a nice show for the members of PCARS.



Carole's mission has always been to introduce a younger generation to the world of math, science and technology. She has found a unique way of presenting those (and all the other areas of study important to grade school and middle school aged students) to them by using Amateur Radio as a learning platform. Amateur Radio can be a fun and exciting way to help students enter in to the world of technology, leading them in to further formal education and career choices in math, science and engineering.

So, while I hope that as many PCARS members as possible will attend our March meeting, I also think that we can use this opportunity to have an important positive impact on our community and the younger generations. To that end, I want to enlist you to invite everyone you know who is involved with youth to attend the meeting with you. Especially Educators, Teachers, Scout Leaders, Youth Group Leaders – anyone who works with youth and is interested in finding ways to help them create an interest in science and technology. The meeting is open to everyone – even if you are not working directly with youth programs, it will be an interesting and educational experience.

Carole will not only describe her experience, working as a teacher for over 30 years, she will be showing how she incorporated Amateur Radio into her daily class planning. Additionally, and more importantly, she will be pointing out where curriculum, books and other support materials can be made available at little or no cost!

In the upper right-hand corner of the PCARS website home page, the countdown counter is counting the time to our March meeting. That shows you how much time you have to get the word out! Underneath the countdown counter is a link to the 2 page flier designed to share with anyone you are inviting to our meeting. (A copy is on the next 2 pages). The PCARS meeting will start at 7:00 PM, as usual, with Carole's presentation starting at 8 O'clock sharp! We will be meeting in the Underwood Hall at the American Legion for this special event)

This is an opportunity for PCARS to show our community that we are a successful organization working hard to share our hobby with as many people as possible – both young and old! Please, grasp this opportunity and make the best of it by personally inviting your friends and acquaintances to join us!

The April PCARS meeting will be another "You don't want to miss it" presentation! Michael Kalter, W8CI will be in representing the Dayton Amateur Radio Association (DARA). Michael will be talking about Hamvention and promises to give you some insights into what Hamvention has gone through over the past 10 – 15 years!

Keep your eyes on this space in next month's **The RADIOGRAM** for more information!



You are Invited to a Very Special Amateur Radio Club Presentation

On Monday, March 11, 2019 the Portage County Amateur Radio Service (PCARS) is proud to announce that Carole Perry, WB2MGP will be the guest speaker at the club meeting.

Carole Perry, WB2MGP is the recipient of the prestigious 1987 Dayton Ham of The Year Award, the 1987 ARRL Instructor of The Year Award, the 1991 Marconi Wireless Memorial Award, the 1993 QCWA President's Award, the 1996 Radio Club of America (RCA) Barry Goldwater Amateur Radio Award, the 2009 RCA President's Award, the 2012 RCA President's Award, and the 2015 Vivian Carr Award for Women in Radio. She is the winner of the 2016 SOAR (Sisterhood of Amateur Radio) Legacy award for Pioneering Women in Amateur Radio, and the 2016 recipient of the YASME Foundation Award for Excellence. In 2017 she was the winner of the Brooklyn College Milton Fisher Second Harvest Award for her volunteer work with young people and technology, around the world. In May 2018 Carole was inducted into the "CQ Amateur Radio Hall of Fame." In July "QST" magazine, Carole was the featured member in "Member Spotlight."



Carole is an RCA Fellow, and in 2007 she was elected to the RCA Board of Directors; a position she still holds, and she created the Youth Activities Committee which she now chairs. She serves on the RCA Scholarship committee as well. She also created the RCA Young Achiever's Award, given to students in grade 12 and below who have demonstrated excellence and creativity in wireless communications. One hundred and seven youngsters have received this award along with a stipend, so far. Carole is also presently a Director for QCWA (Quarter Century Wireless Association). The QCWA Youth Activities program was created and chaired by Carole.

Under Carole's leadership, the RCA Youth Activities Committee goes into schools across the country to set up radio/technology programs. Equipment, cash grants, books, and supplies are donated to the chosen schools or youth groups.

Carole has moderated the Dayton Hamvention Youth Forum and Instructors' Forum for 31 years. She is a member/director of QCWA and RCA. She is also a member of ARRL, DARA, (Dayton Amateur Radio Association) AWA (Antique Wireless Association), and Brandeis Women.

Carole is a contributing columnist for CQ Magazine's Youth Column.

=====

Carole will be with us at PCARS! She will be discussing how to get youth involved in Amateur Radio. We can't think of a more qualified person to talk with us on this topic. PCARS knows you'll want to be there. PCARS also wants to make sure it's on *your* calendar as a "not to be missed" meeting.



Carole Perry, WB2MGP's Presentation at PCARS

Carole Perry, WB2MGP will be the guest speaker at the March 11, 2019 meeting of the Portage County Amateur Radio Service (PCARS).

She will be speaking in her role as the Radio Club of America (RCA) Director and also as Chairperson of RCA Youth Activities. Carole will also be speaking about the Youth Activities initiatives which include supporting STEM classes, Scout Troops, ham radio in schools, radio classes in museums, and technology programs in Youth Groups.

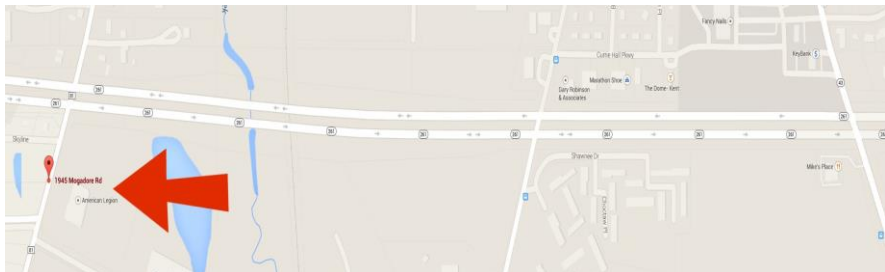


All curriculum, books, and other materials are offered FOR FREE through this program. She will also speak about RCA showcasing of talented young hams in high school and below. Young hams are sponsored to speak at Youth Forums and Technical Symposiums across the country.

All teachers, scout leaders, Youth Club leaders, and club members interested in starting or enriching a radio program for students 18 years and younger, or in making an ISS contact, will be given information about resources and free materials that are available. This will be an excellent networking opportunity.

=====

The PCARS meetings are held at The American Legion, Post 496
1945 Mogadore Road - in Kent. (Just South of Route 261) the meeting will start at 7:00 pm



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 to the east side of the building and enter through the doors near the Army Ambulance that is parked on display.

You can find out more information about the Portage County Amateur Radio Service by visiting the club web site at: **WWW.PORTCARS.ORG**

For questions or more information, please contact **Tom Sly, WB8LCD**
Phone: 330-554-4650 E-Mail: tomsly29@gmail.com

We hope YOU will join us at 7 pm on March 11th for this special presentation



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



Philip, KA4KOE



This Month's Stiff: **Georg Simon Ohm**
Entered Mortal coil: **16 March 1789**
Assumed Room Temperature: **6 July 1854**

Georg Simon Ohm

One of the favorite movies of my misspent youth was National Lampoon's *Animal House*. In this film, we see fraternity boys carousing, drinking, womanizing, gambling, and generally not taking anything seriously. Not surprising is the fact that most of the boys have abysmal grades, and that their fraternity has been placed on "super secret" probation. Georgy would have fit right in. Ohm's father, Johann, was a self-educated working class man, i.e. blue collar, who had apparently busted his chops getting Georgy into Erlangen University. The old man was fed up with rumors of his son's excessive dancing, ice skating, and pool playing. After only three semesters, Georgy was pulled out of school and sent to Switzerland where he more or less had to grow up.

What followed after this enforced leave of absence from Erlangen was a series of unsatisfying teaching posts as young Ohm drifted through life. All he wanted was a full professorship at a prestigious institution. Ohm further educated himself and conducted independent research while holding a teacher's position at the Jesuit Gymnasium of Cologne starting in 1817. Publishing his research, Georgy realized, would get him that coveted post....and research he did! In 1827, after a considerable amount of labor, head scratching, and experimentation, he published his results in the paper *Die galvanische Kette, mathematisch bearbeitet*. This was quite a mouthful, even in German (read Mark Twain's essay, "The Awful German Language", if you really want to laugh). Anyway, the end result of all that formal written Hun verbosity was

$$E = I \times R$$

Volts = Amperes times Ohms.

This simple little formula defines all things electrical and electronic. If you don't know it, learn it, or at least do a little bit of research on your own. I can't do everything for you kids, okay?

Unfortunately, this electrical thunderbolt out of the blue went largely unnoticed, and Ohm's theory was greeted with less than rampant enthusiasm from his professional peers. In 1841, the Royal Society awarded Georgy the Copley Medal, acknowledging his contributions in electrical research. In 1852, Ohm achieved his lifelong dream and became the Chair of Physics at the University of Munich. The Reaper had the last laugh as poor Ohm only got to enjoy the fruits of his labor for two years before being mowed down by the aforementioned Reaper's scythe in 1854. Poor Georgy!!!!

Ohm's Theory is now Ohm's Law. Learn it. Live it. Don't ever forget it!!!

Reprinted with permission from Philip Neidlinger, PE, KA4KOE From the series titled: "Dead Electrical Dudes"

Membership Information

Tom, WB8LCD
PCARS Membership Chairman



As of the end of February 2019, PCARS has a total “active” membership roster of 191 members. That’s as high as the “active” number has ever been, and we continue to add new members every month. **Fantastic!**

Out of that 191, 96 (50.3%) hold an Extra Class license, 55 (28.8%) hold the General Class license, and 44 (17.8%) hold the Technician Class license. (another 3 are Advanced Class and 3 are listed as Novice – or not licensed.) We are almost the exact inverse of the national average where most hams hold the Technician Class license and the fewest hold the Extra Class license.

With the addition of the Get On The Air (GOTA) events planned at helping new hams get active immediately upon getting their license at the club site, and providing motivation to upgrade, I believe our numbers will continue to grow, with less attrition. It should be every new hams goal to make it to the General Class license as quickly as possible – as that’s where the biggest chunk of spectrum allocation is earned.

The largest percentage of our members come from Ravenna (30 members, or 15.7% of the total) and the next 2 largest membership communities are Akron and Kent (Kent includes The Village of Sugarbush Knolls) tied at 17 members each!

I want to congratulate, and thank you all, for getting your membership renewals taken care of by January 31st. That’s a huge burden off the shoulders of the club Secretary and the Treasurer to know that that is finished for the year. Now we can all concentrate on making new hams, new PCARS members, and **Having Fun with the Greatest Hobby in the World!**

PCARS Patches & Stickers



New 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: **Paul, KE8EGF** or e-mail him at: phyland@neo.rr.com



Albert Into, K8NI - SK

Albert Norman Into Jr., 91, passed away Feb. 9, 2019.

Al was PCARS member # 271 during 2014.

Norm joined the Navy, receiving his wings and commission in 1949. He served five years on active duty as a carrier pilot and nine years in the Naval Reserve.

At RCA in Camden, N.J., he was product manager of avionics. This involved him in classified space and defense projects, including secure communications for the Navy, high frequency communications for the Strategic Air Command and astronaut communications for the first NASA Apollo landing.



From his listing at QRZ:

My Class A ham license, W9NTH, and my 1st class commercial phone licenses were issued in April 1945, my senior year in high school.

I went into Navy flight training that June and was commissioned in the regular Navy. Served in Fighter and Attack (carrier) squadrons as a pilot and as an Electronics Officer.

After gaining a B.S. in Engrg. from Yale worked for RCA in N.J. for 11 years, then several other firms, retiring in 1995.

About half the members of our South Jersey Radio Ass'n were RCA. Learned a great deal from my seniors there. RCA was the no. 1. electronics co. then, and a great place to work. I was very active in SJRA and was club president in 1965. Got my Extra in 1954, before there were any band privileges.

Moved to Conn. in 1968, where I was W1CCZ / W1RN and involved in starting several repeaters. Some of the members of our club, Talcott Mountain, were ARRL staff, including Dave, K1ZZ.

Moved to Chagrin Falls, Ohio in 1975 and got my present call, K8NI. Am still active in the club there, WRECS, where I was president for a couple years. I've enjoyed a wide variety of operation from Aero Mobile, over the years, QRP in Youngstown, to being DX at a variety of places in Europe (5 ops at 4U1ITU), Monaco, Mainland China, Caribbean, PJ9 and KP2. I held the call G5ASW for a while.

Since retiring and moving to Youngstown, OH, in 1996, I've "returned to my roots", building a variety of tube and contemporary gear. Of course, I still use my "appliances", mostly Icom and Collins. I'm a new member of the Mahoning Valley Club (MVRA) and have enjoyed meeting and making some friends here.

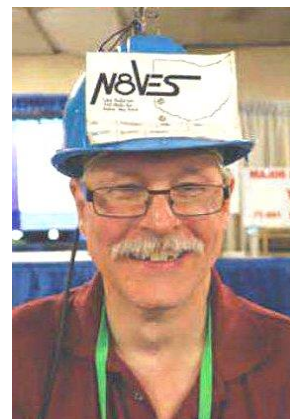
Recently I built the club station, K8YSU, at our local college, Youngstown State University, which is now on the air on 160 thru 70cm.

FT8 Crowned King of Modes in 2019

Sam Anderson, N8VES

Editor - RF Carrier

Dayton Amateur Radio Association



The cartoon shown on this page is a startling representation of just what has happened on the Amateur Bands in the past year. When Rob Lunsford KB8UEY released the W8BI station logs for 2018, this image popped into my head. I just couldn't believe the number of FT8 contacts made in just the last year. When I wrote *Diving Into Digital* and had Jerry Miller WD8QAI (SK) publish it in his last edition as editor of the RF Carrier last February, I had no idea the impact that FT8 would have on Amateur Radio operating habits. Consider this, in 1988 Peter Martinez G3PLX introduced PSK 31 as a mode using a computer sound card for digital signal processing. There were other digital modes at the time but most required the use of an external (and expensive) modem. Even so at the time, computers were starting get cheap enough for just about any amateur to afford and use in the shack. In the years that followed, dozens of other digital modes were developed and sound card interface prices fell significantly. Digital modes became popular with Amateurs. Even RTTY and SSTV became easier to use because they no longer required ancient and expensive teletype terminals or surplus radar CRT screens. With so many modes available, it took almost ten years for PSK 31 to rise to the top of the digital domain. In 2003 Joe Taylor K1JT introduced JT65 in his WSJT package for EME (moon bounce). Operators soon found the mode useful on HF. And for the first time in history CW had a serious competitor in weak signal DX work. But the software and mode were cumbersome to setup and work. Contacts took several minutes to complete and the instructions were written in Rocket Science. Despite this, the mode gained in popularity and use; but not enough to de-throne PSK 31 from the top spot in digital. All that would change 15 years later. In June of 2017, Joe introduced WSJT-X which featured FT8. With easier instructions, a waterfall display and plenty of You Tube videos, the mode takes only a minute to complete a contact (about the same time it takes to complete the average CW contact). Not to mention that it can be perfectly copied UNDER the noise level. The mode EXPLODED in popularity. By the time *Diving Into Digital* was published in the February 2017 RF Carrier, PSK 31 contacts were already falling off fast. Eleven months later on the Saturday before New Years Day, I took a survey of the bands in the middle of the afternoon. On 6, 10, 12 and 15 meters the ONLY mode I found in operation was FT8. No CW, No SSB. On 17 Meters I found just one SSB conversation and several FT8 contacts. On 20 and 40 meters I found maybe a dozen CW contacts, all at the lower section



of the CW sub-band and all at or greater than 20 WPM. On sideband, nearly all the conversations were in the Extra sub band. On 20 meters, I found NOTHING in the General sub band, not even SSTV. There was one PSK 31 contact on 40 meters and the rest were all FT8 – DOZENS of them. On 20 meters the mode was spread out from its normal spot at 14074 up to 14080, the doorstep of RTTY, and thus the cartoon of the shoe shadowing over RTTY. On 160 meters I copied W1, W2 and VE9 calls at 3 in the afternoon – two hours before sunset here in Dayton. No other mode in history has taken off with such widespread popularity and acceptance as that of FT8. The reality is this: If your (other) club does not set up a radio and antenna system dedicated specifically to FT8 during Field Day 2019, they may find themselves at a serious disadvantage in points at the end of the contest. It would not surprise me to see FT8 on 20 meters operating from 14050 right on up to 14110 during Field Day 2019. Really pushing CW and SSB aside like my cartoon shows. It used to be that CW was the easiest way to obtain your DXCC. Today? If you are not working FT8, you're about to left behind in the dust.

PCARS VE Test Sessions

Tom, KB8UUZ
PCARS VE Team Liaison



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 6th, June 1st, August 3rd, October 5th

Also - March 27th at 7 pm (end of Tech Class)

Saturday, June 22nd at the Field Day site - 4 pm

What to Bring to the Testing Session

- \$15 is the current test fee. We prefer the exact amount in cash or a check made out to: **ARRL-VEC**
- A government photo ID (**driver's license or state ID card preferred**).
- Your Social Security Number or FCC Federal Registration Number. We are required to submit either your Social Security Number (SSN) or your FCC Federal Registration Number (FRN) with your application. If you are upgrading, your FRN is on your current Amateur Radio license.
- A pen (black ink) and pencil (we can loan you either or both)
- **If you already have an Amateur Radio license: One copy of any current (*unexpired*) amateur radio operator license issued to you.**
- 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 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 re-instate your license.

Any Questions? Contact: KB8UUZ@gmail.com



Riley Hollingsworth - Volunteer Monitors Program

From the ARRL

Riley Hollingsworth, K4ZDH, will oversee the development and implementation phases of ARRL's new Volunteer Monitors (VM) program, which will replace the Official Observers (OO) program. Hollingsworth, who once handled Amateur Radio enforcement for the FCC, has stepped down as ARRL Atlantic Division Vice Director to avoid any appearance of a conflict of interest. The development phase of the program is already under way.

"I am grateful for the Atlantic Division ARRL members supporting me, but I think I can better serve the Atlantic Division and all ARRL divisions by working in the Volunteer Monitors program," Hollingsworth said in his resignation letter. A new Atlantic Division Vice Director will be appointed.



Riley Hollingsworth, K4ZDH

ARRL President Rick Roderick, K5UR, said that Hollingsworth was the ideal person to lead ARRL's efforts in the development and implementation of this joint program with the FCC.

"I support Riley's decision to concentrate his efforts on this very valuable project on behalf of the ARRL," Roderick said.

Approved by the ARRL Board of Directors last July, the Volunteer Monitors will work in cooperation with the FCC. Volunteers trained and vetted by ARRL will monitor the amateur bands for possible instances of misconduct or to recognize exemplary on-air operation. Cases of flagrant violations or noncompliance will be directed to the FCC for action, in accordance with FCC guidelines. The program, which aims to re-energize Amateur Radio enforcement efforts, was proposed by the FCC following the closure of several FCC regional offices and reductions in field staff.

Hollingsworth has identified three phases to the program -- development, solicitation and training, and implementation. The development phase will include drafting a mission statement, clearly defining ARRL's and the FCC's requirements and needs as part of the program, drafting a Volunteer Manager job description, and developing a training manual for volunteers.

The solicitation and training phase will involve identifying the geographical locations where volunteer monitors will be most needed, soliciting applications, and screening applicants. Current Official Observers will be invited to apply for appointment as Volunteer Monitors (VMs). The ARRL Board has expressed its appreciation to the OOs for their dedicated volunteer service over the years.

Implementation will involve having the volunteers provide field reports, and ARRL staff offering guidance to volunteers to ensure that the information gathered meets FCC requirements. Continuing education will be provided to the volunteers as part of the program.

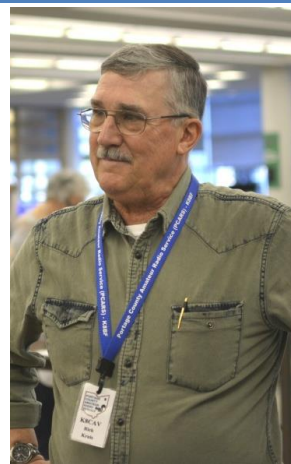
Hollingsworth has committed to ensure training adequacy for new VMs, to review the quality and utility of Volunteer Monitor submissions to the FCC for enforcement action, and to advocate for rapid disposition of cases appropriately submitted to the FCC.

ARRL officials estimate that it will take 9 - 12 months before the first Volunteer Monitors begin filing reports.

Portage County Coms Unit - Help Wanted

Rick, K8CAV

Portage County Coms Unit Commander



The mission of the Portage County OHS/EM Communications Unit, also known as the Coms Unit is to provide communications support to the EMA, and to first responding agencies using public safety equipment and frequencies and when needed, amateur radio equipment and frequencies. The Coms Unit trains regularly on training nets, monthly meetings, table top exercises and field exercises to gain and maintain proficiency in tasks needed to support the Coms Unit mission. They also train in large scale exercises such as Operation Guardian Shield at Camp Ravenna, now known as Camp James A. Garfield, the LEPC Unified Command exercise in Shalersville, and others that provide higher level training challenges for the Coms Unit.

In August of this year the Coms Unit will be working with the Portage County OHS/EM, the Ohio National Guard, and local First Responders in a large-scale exercise at Camp James A. Garfield. Coms Unit support will include providing radio operators to Incident Commanders and Unified Command, radio system patching, planning documenting radio communications, and demonstrating amateur radio delivery and receipt of conventional e-mail by RF using the Winlink 2000 system.

Membership in the Coms Unit is open to all local area amateur radio operators who can meet the legal, moral, technical, training, and participation requirements. If you are interested in becoming a member of the Coms Unit, please contact me at k8cav.coms@gmail.com and you will be provided information and an application.

Shack Shot - N8XTH

Deron, N8XTH



My antennas are a homebrew 2m/70cm J-Pole, a G5RV at about 40 ft, a homebrew wire 30m Vertical up about 15 feet, a 1/2-wavelength 160m dipole at about 80 ft and a beverage on ground receive antenna for 160m.



The receive antenna is a huge help, I've worked Belarus, Belize, Paraguay, Hawaii, Alaska, Greece this already this year on 160. The week after Christmas I worked a large part of the EU on 160 in just a few nights. FT8 is amazing.

Last year I added a red lamp to my shack and it's a huge help when I'm contesting all night. The light helps with the keyboard and note taking but is easier on my eyes with all of the computer screens for hours on end.



Good Bye Yahoo - Hello IO

John, KD8MQ



Over the next 30 days, we will be phasing out the PCARS Yahoo Group. We have set up a new reflector at Groups.IO.

In the last few years, Yahoo seems to have been declining in its support for groups. Several groups have left Yahoo, and made the switch to Groups.IO. The Ohio State Parks On The Air (OSPOTA) Yahoo group made the switch last month. Think of Groups.IO as "Yahoo done right".



This is a great place to post requests to other members. Maybe you need help with an antenna install, or a question about what-ever, this is a really good resource to use to reach out to other PCARS members for assistance.

Since the PCARS e-mail reflector is a **members-only** benefit of your PCARS membership, we've sent invitations to everyone on the PCARS roster.

Just reply to the e-mail you received, or click on the "accept the invitation" link in the e-mail to start the process.

If you didn't receive an invitation, just go to <https://groups.io/g/PCARS>, to sign up.

If you have problems signing up, or have questions, just e-mail me at kd8mq1@gmail.com.

Groups.IO has a ton of awesome features for groups. All files, and pictures that were in the Yahoo group file section have been transferred over to the new group.

In the near future, the old PCARS Yahoo Group will shut down.

PCARS Group IO

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

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

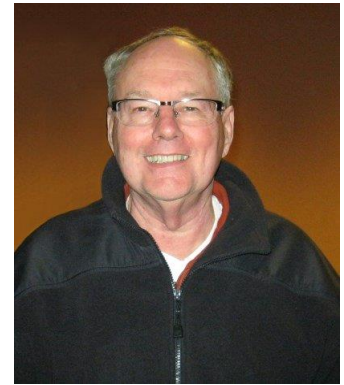
Two things every member should do.

1. Check the PCARS web site every day, maybe a couple of times a day to see new information that is posted.
2. Another thing to do is to join the PCARS Group IO. 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!!



How To Make Projects Simpler Using Modules

Jim, AC8NT



For the past couple of months I have been playing with logarithmic amplifier projects. Three projects have been completed and were a lot of fun to build and test.

1. A wide dynamic range field strength meter covered in a QEX January/February 2019 article by Thomas Alldread, VA7TA (link below). It has a dynamic range of 90-dB! Very handy.
2. A 1 μ W to 1 kW 50 Ω power meter using a logarithmic amplifier and a low noise variable gain amplifier good to 80 MHz. Great for bench testing a lot of projects from QRP to full power.
3. A HF through UHF SWR bridge that uses logarithmic amplifiers instead of diodes for detectors. Again a great measurement tool and the heart of a very nice antenna analyzer.

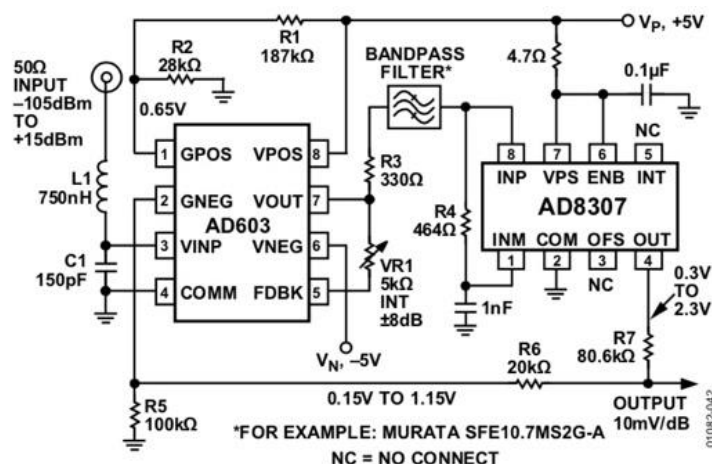
The details of these projects will be the subject for future articles and build days. However I thought I would explain how I found ways to simplify these projects using modules that I found on Amazon or eBay as key elements. Let's use the field strength module as our starting point.

If you have read the article you will see the project requires a dip version of the Analog Devices AD8307 logarithmic amplifier. A part that is expensive and hard to find. The project involves Manhattan style construction with wires connected directly to the dip part. Although the circuit was simple, the construction required more than a little work. As I was searching for the 8307 part, I came across a module on both Amazon and eBay that made the use of the 8307 part a snap.



Using this module and a little perf board and the project was easily assembled. Note the board came with an SMA connector as input, making integration very easy. I still needed to make the input network and complete the analog circuit using, as I mentioned, perf board construction. I built the case from two sided circuit board as did the author and the unit has tested fine.

The second project was a modification to a circuit found in the AD8307 application note. The circuit is shown below.

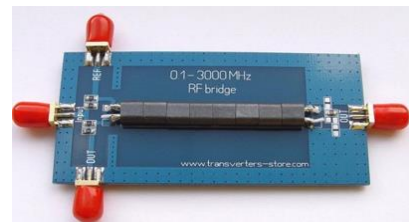




This project required the AD8703 board covered above and a nice board containing the AD603 shown. Again the board was found on eBay.

A few relatively simple modifications had to be made to the boards, but the projects were made much simpler using the modules. This was a very cool project completed in a couple of days. It can easily measure mixer and oscillator output without a problem.

The SWR bridge project utilized a bridge board I found on eBay. This \$12 board and two of the 8703 boards made the project a lot simpler. Again, with minor changes to the boards, the project was much easier to complete and get running.



These projects created some really useful tools and the use of these inexpensive board modules eliminated the need for soldering surface mount parts. We will cover the construction details of these projects in future build day events. If you are interest in any of these projects let me know.

The link to the QEX article is: http://www.arrl.org/files/file/QEX_Next_Issue/Jan-Feb2019/Alldread.pdf

Hamfest Calendar

03/03/2019 - WINTER HAMFEST - Location: Lorain County Community College - 1005 North Abbe Road - Elyria, OH 44035 - Website: <http://www.noars.net/hamfests/noarsfest> - Sponsor: Northern Ohio Amateur Radio Society - Public Contact: Tom Porter, W8KYZ - 161 Herrmann Drive Avon Lake, OH 44012 - Phone: 440-930-9115 - Email: tporter161@oh.rr.com

04/13/2019 - 65th Annual Cuyahoga Falls Amateur Radio Club Hamfest - Location: Emidio & Son's Party Center - 48 East Bath Road - Cuyahoga Falls, OH 44221 - Website: <http://cfarc.org> - Sponsor: The Cuyahoga Falls Amateur Radio Club, Inc. - Public Contact: Pat Morrow, N8OQP - 627 Brewer Avenue Akron, OH 44305 - Phone: 234-206-0270 - Email: retired_guru@neo.rr.com

05/17-19/2019 - 2019 ARRL National Convention at Dayton Hamvention® - Location: Greene County Expo Center - 120 Fairgrounds Road - Xenia, OH 45385 - Website: <http://hamvention.org> - Sponsor: Dayton Amateur Radio Association - Public Contact: Henry Ruminski, W8HJR - PO Box 964 Dayton, OH 45401 - Phone: 937-232-9272 - Email: media@hamvention.org

06/01/2019 - Breeze Shooters Amateur Radio Club - Location: Big Butler Fairgrounds - 1127 New Castle Road - Prospect, PA 16052 - Website: <http://www.breezeshooters.org> - Sponsor: Breeze Shooters Amateur Radio Club - Public Contact: Cathy Heiles, KB3OYS - 134 Easley Road Pittsburgh, PA 15237 - Phone: 412-600-3846 - Email: kb3oys@breezeshooters.org

08/03/2019 - Columbus, Ohio Hamfest - Location: Aladdin Shrine Center - 1801 Gateway Circle - Grove City, OH 43123 - Website: <http://www.columbushamfest.com> - Sponsor: Voice of Aladdin Amateur Radio Club - Public Contact: John Lehman, K8PJ - 7415 Hagerty Road Ashville, OH 43103 - Phone: 614-571-5179 - Email: k8pj.john@gmail.com

09/22/2019 - Cleveland Hamfest and Computer Show - Location: Cuyahoga County Fairgrounds - 164 Eastland Road - Berea, OH 44017 - Website: <http://www.hac.org> - Sponsor: Hamfest Association of Cleveland - Public Contact: Glenn Williams, AF8C - 4134 Stoney Ridge Road Avon, OH 44011 - Phone: 440-934-5566 - Email: af8c@arrl.net

Daylight Saving Time Starts March 10th

SPRING FORWARD - FALL BACK

Yep, Sunday March 10th Daylight Saving Time starts. At 0200 local, turn your clocks **ahead** 1 hour.

Remember UTC (Zulu, GMT) time does NOT change.



Examples:

March 9th - we are still on **EST** (Eastern Standard Time).
At 0800 EST (8 am for you non-military people) it is 1300 UTC (1 pm) - That is a five hour difference between Ravenna, OH and Greenwich, England.

March 10th - we are now on **DST** (Daylight Saving Time).
At 0800 EDT (Eastern Daylight Time) it is 1200 UTC (noon) - That is a four hour difference between Ravenna, OH and Greenwich, England.



Happy Birthday PCARS Members

PCARS members having a birthday in **March**:

W8KNO	Joe	Wehner	KE8KCJ	Montie	Hardman
WB8HYO	Andrew	Bowell	K8SRR	Steve	Randlett
KD8NLQ	Rick	Preisendorfer	N8FUM	Dan	Torchia
AE8YL	Erica	Pelz	KB3GXB	Jennifer	Williams
WA4WGA	Ray	Mahorney	WX1DER	Daryl	Stout
KE8BBI	Doug	Daniels	K8QF	Russ	Conklin
K1LTZ	Raiden	Ehrenfried	WB8LCD	Tom	Sly
W8CYN	Jim	Shoemaker	W0KGB	Kirk	Baxter
N8KEV	Kevin	Settle			



PCARS
www.portcars.org



Swap-N-Shop

FOR SALE: Icom 756 Pro III - With box, manual, microphone and power cord. Selling since I upgraded to a 7600. Asking \$1000.00 or best offer - let's talk.

Contact Richard KA8OAT - Phone 330-506-7068 or email: RCMBASS@AOL.COM [06/02/19]

For Sale: Two Velvet Vernier Drives, Large 4" dia. Vernier drives used for precision adjustment of air variable capacitors. \$60.00 for the pair.

For Sale: Two (2) Hammarland transmitting capacitors, for a large antenna tuner. Rated 300 pf at 7500 Volts. They would make the ideal capacitor pair for a high power tuner. 13-7/8" L x 5-1/2" W x 4" H. One of the capacitors has had a single plate removed from the rotor. This has had the effect of reducing the capacitance by 4% or 12 pf. Therefore, one of the capacitors measures 288 pf while the other one measures 300 pf. However, 250 pf is all that is required to tune 160 meters in a T-network tuner so this should not be a problem. \$150

For Sale: 4" Coax Entry Port, This 4" entry panel complete with stainless steel mounting hardware, boot and cushion for four cables up to 1/2" in dia. The cushion can be changed out so any combination cable sizes can be accommodated. Two of the holes have removable plugs. \$30.00

For Sale: Andrew Helix Prep Tool Set, One set consisting of a prep tool for Andrew LDF4-50 1/2" Helix and one almost new, (used once) Helix cutter. This special Helix cutter is designed keep the cut end perfectly round so it will easily fit into prep tools and result in a properly prepared cable end ready for the installation of a connector. \$130 for set

For Sale: Andrew Helix Prep Tool, Two (2) new prep tools for Andrew LDF4-50 1/2" Helix \$100 each
James, KD8VT 330-206-4909

Contact James. KD8VT - 330-206-4909 [04/02/19]

FOR SALE: Diawa Cross Needle Antenna Tuner - Model CNW 419 - Asking \$175

Contact David, WV8P - email: WV8P@roadrunner.com [05/02/19]



For Sale: Collins 100 Watt Dummy Load DL-1 S/N-5288 dummy load will handle 100 watts for tuning up your rig, can work with any radio transmitter. \$150

For Sale: Used KT-88 Amplifier tubes that just came out of service in a McIntosh MC-2102 100 watt stereo amp. \$150

For Sale: Collins SM-2 microphone with original box, packing, cable, connectors, and mounting stand. \$350

For Sale: Used Collins SM-2 microphone with mounting stand no cable included. \$150

For Sale: Drake B-line Restored - Drake R-4B receiver S/N-14602B, T-4XB transmitter S/N-19769B, AC-4 power supply S/N-38653, MS-4 speaker (1972 Vintage), EV-638 microphone, RED LED digital readout, plus extra range crystals for all WARC bands & 160 meters, cooling fan on T-4XB.

Restored, aligned using sweeping method. Many new parts too much to list here. AC-4 re-built. \$1200, no trades, no Pay-Pal, Prefer pickup (NE Ohio Cleveland) or plus UPS Shipping 48 States

For Sale: Swan WM-1500 Wattmeter - Swan WM-1500 large 4-inch wattmeter, with scales of 5, 50, 500, 1500 watts analog only (no peak reading). Just a nice LARGE meter that works well.

Contact: Jeff, WA8SAJ at (440) 951-6406 is best for more info, no E-mails [04/02/19]

FOR SALE: WIMCO 2 Meter Wagon Wheel Antenna - Also known as a cloverleaf antenna. As new, plus save expensive shipping from Germany \$60.00

Contact Al, WA8CCU - email: radioflyer73@roadrunner.com [03/02/19]



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



Charlie the Tuner's HF High-Lites

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



Greetings to all DXers:

Well, March has now come and if we are being positive, Spring is on the horizon. If we are being real, then we know that it will still be rotten WX well into April. Hopefully, I am wrong and we will have an early Spring. Then maybe I can get my antennas up and working. In any event, there seems to be a lot of DX events going on and I listed many for the next few months. So let's get to them.....

As always, thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, AB5K & the AR TelNet Clusters Network, AF1G/C6ATH, NJ1Q & W1AW, NG3K & ADXO, W3UR & The Daily DX, K6VVA, K8GI, K8YSE, W8GEX & 60m DX News, W9ILY, DL1SBF, DL7UXG & The DX News Letter, DxCoffee.com, DXNews.com, DX-World.Net, ES1CW, F5NQL, F6AJA & Les Nouvelles DX, HA1AG, I1JQJ/IK1ADH & 425 DX News, I2MQP & DX Italia News, JI1LET, OZ1ADL, OZ6OM & 50 MHz DX News, 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.

DXCC'S MOST WANTED (ClubLog). The "DXCC Most Wanted" entities list has been updated on ClubLog as of January 29th. The list contain 340 entities and here are the top 10 entities:

1. P5 DPRK (North Korea)
2. 3Y/B Bouvet Island
3. FT5/W Crozet Island
4. CE0X San Felix Islands
5. BS7H Scarborough Reef
6. BV9P Pratas Island
7. KH7K Kure Island
8. KH3 Johnston Island
9. FT5/X Kerguelen Island
10. 3Y/P Peter 1 Island

3B8, MAURITIUS. Nigel, G3TXF, will once again be active as 3B8XF from Mauritius (AF-049) during the 2019 Commonwealth Contest (BERU) [March 9-10th]. QSL via G3TXF or ClubLog's OQRS (for both Bureau or direct QSLs). DO NOT SEND QSLs THROUGH THE BUREAU.

3D2, FIJI. Jim, WB2TJO is QRV as 3D2JS from Taveuni Island, IOTA OC-016, until March 7. Activity is on the HF bands using CW, SSB and various digital modes. QSL direct to home call.

3W, VIETNAM. Jean-Pierre, F6CTF, will be active as 3W9JF from two different locations in Vietnam until April 6th. His schedule is as follows: February 19th-March 6th -- From Phu Quoc Island (AS-128). March 16th-April 6th -- From Hoi An. Activity will be on 80/40/20/17 meters using CW and SSB. QSL via direct or eQSL.

3Y0I BOUVET DXPEDITION NEWS. Again nothing has been posted on any of the 3Y0I media Web pages during the past three weeks. Last post was on January 25th. It has been very quiet. The DX community continues to be anxious for this DXpedition to take place. Nothing else to report this week and no other details. Departure dates are still not known. It is still a mystery... *Ed Note: These folks may have the best intentions, but frankly at this point if this ever happens I will be very surprised.*

5X, UGANDA (Callsign Update from OPDX.1400). The Italian Dxpediton Team (IDT) will be using the following callsigns for their DXpedition to Uganda between March 13-25th: 5X3C (not 5X0T) for CW,SSB and RTTY 5X3E (not

5X0X) for FT8 QSL via I2YSB, direct, OQRS or LoTW. For more details on the IDT team and an online survey for "needs/wants", see their Web page at: <http://www.i2ysb.com/idt>

6W, SENEGAL. Willy, ON4AVT, will be active as 6W/ON4AVT from Mbour, Senegal, until March 30th. Activity will be on 40/20/10 m using CW, SSB, PSK31 and PSK63. Equipment is a Yaesu FT891 transceiver into a Buddipole antenna. This time Willy will also take an end-fed for 3 bands (40/20/10m). It's also possible, he says, that he will give FT8 a try from there. Equipment is a Yaesu FT891 transceiver into a Buddipole antenna. QSL via his home callsign.

7P, LESOTHO (Update). The 7P8LB Team is now well established as they near their departure date in a few week's time. Operators Svein/LA3BO, Piotr/LA7RRA, Rune/LA7THA (Team Leader), Arne/LA7WCA, Svein Jarle/LA9KKA, Thor/LA9VPA, Harald/LB2HG, Chris/OE5CWO and Phillipp/OE7PGI will be active as 7P8LB from Molengoane Lodge (WW Loc. KG30VO), Lesotho, between March 8-16th. They plan to have 2-3 stations running 24/7 on all HF bands using CW, SSB, with the focus on low bands and FT8. QSL Manager is Charles, M0OXO. QSL is via M0OXO's OQRS: <https://www.m0oxo.com/oqrs/logsearch.php> Logsearch can be found on Clublog: <https://clublog.org/logsearch/7P8LB> Not in log: Use the busted callsign facility on the OQRS page. For more details and updates, see: <http://www.la9vpa.com/7p8lb/index.html>

9G, GHANA (Reminder). IZ4YGS, is active as 9G5GS from Sanzule, West Takoradi (Western Region), Ghana. Matt informed OPDX of the following [edited]: "I'm travelling to Ghana almost every month for work reasons and it will be so throughout 2019. I'd like to be on-air from 80-6m, but it will take some time to be operational on all bands. I'll start with an FT-891 and wire antennas, SSB and FT8, mainly in the evening after work. Ham radio won't be my main activity in Ghana, but I'll do my best to let everybody have fun." QSL via IZ4YGS, direct or eQSL.

A5, BHUTAN. Look for A5A to be active again until March 9th. Zorro/JH1AJT (A5A), will travel to Bhutan with Franz/DJ9ZB (A52ZB) and Champ/E21EIC (A52IC). The main purpose for Zorro is to meet with the Foreign Ministry to continue discussions on outcomes and progress on their collaborative project for the youth development program SEISA working for BOC. He will also meet the official of the Ministry of Health, sports federations, BOC Olympic and Paralympic committees (also collaboration of sports, education and medical issues). Activity will be on 160-10 meters using CW, SSB and FT8. The team will focus on 160 meters FT8. Suggested FT8 Frequencies/Modes are:
160M : 1840 QSX 1908 for JA (FT8 normal mode) 80M : 3567 DXpedition mode 17M : 18095 DXpedition mode
40M : 7056 DXpedition mode 15M : 21091 DXpedition mode 30M : 10131 DXpedition mode
12M : 24911 DXpedition mode 20M : 14090 DXpedition mode 10M : 28091 DXpedition mode
QSL via JH1AJT: P.O. Box 8, Oiso, Naka-gun, KANAGAWA 255-0003, Japan OQRS will be available at ClubLog after Zorro's return to Japan. Support FGC – Foundation for Global Children: <http://www.fgc.or.jp/english>

C5, THE GAMBIA (Update). Don, G3XTT, will be in The Gambia from March 5-12th. He will mainly operate in the RSGB Commonwealth Contest over the weekend of March 9-10th. The callsign will be C56DF, and Don hopes to do some operating before and after the contest. This will be a CW only operation, low power (IC-7300 and wires) from a rooftop apartment. It is unlikely there will be space for 80 or 160m antennas, but Don hopes to use the trip to get possible opportunities for a larger operation later in the year or early next year. He will, of course, upload logs to LoTW and ClubLog, but possibly only after his return to the UK. QSL direct to Don's home callsign or via ClubLog's OQRS.

CE, Juan Fernandex Islands Group, SA-005. RRC operators Vasily/R7AL, Vasil/RA1ZZ, Vladimir/RK8A, Aleksei/RL5F, Leonid/RW9JZ and Marco/CE1TBN will be active as XR0ZRC from Robinson Crusoe Island (WW Loc. FF06oi), in the Juan Fernandez Islands (CE0Z) group, between March 11-27th. The DXpedition Pilot will be Victor, UA3AKO. Activity will be on 160/80/40/30/20/17/15/12/10 meters using CW, SSB and FT8. QSL via R7AL, direct, ClubLog's OQRS or LoTW. For more details and update, see: <https://dxpedition.wixsite.com/xr0zrc>

D4, CAPE VERDE. Operators Helmut/DF7EE, Andrea/HB9DUR, Marco/IK2LFF, Kris/YL3JA and Ljubomir/YU5EEA will be active as D4C from Cape Verde Island during the CQWW WPX SSB Contest (March 30-31st) as Multi-Op entry. Operators HB9DUR and YU5EEA are YOTA members. QSL info: <http://d4c.cc/qs>

DU, PHILIPPINES. Christian, F4EBK is QRV as DU3/F4EBK from Luzon Island, IOTA OC-042, until March 31. Activity is on 80 to 10 meters using CW, SSB and various digital modes. QSL direct to home call. In addition, Bodo, DF8DX plans to be QRV as DU1WQY/1 on Palawan Island, IOTA OC-128, from Feb 4-14. QSL direct to home call.

DU, PHILIPPINES. Press, N6SS, will be active as DU6/N6SS during the CQWW WPX SSB Contest (March 30-31st) as a Single-Op/Single-Band (80m) entry. QSL via his home callsign.

E5, NORTH AND SOUTH COOK ISLANDS. Operators Dagmar/DM7PQ, and Rainer/DL1AUZ will be active as E51NPQ and E51AUZ, respectively, during Mar and Apr. Activity will be from the following scheduled islands: Mar 9-11 - Rarotonga Island (OC-013), South Cook Islands. Mar 13-25th -- Manihiki Island (OC-014), North Cook Islands. Mar 27-31- Aitutaki Island (OC-083), South Cook Islands. Apr 2-11- Rarotonga Island (OC-013), South Cook Islands. Activity will be holiday style on various HF bands. QSL via their home callsigns.

E5, SOUTH COOK ISLANDS (Update). Hans-Martin, DK2HM, will be active as E51HMK from Rarotonga Island (OC-013) [on the north-west side of the island], South Cook Islands between March 14-22nd. Activity will be holiday style on 80-10 meters using mainly SSB, but also Digital modes (FT8). Equipment will be an Icom IC-706MK2G with a HLA300+PA into a Windom Dipole (80-10m) and an EFHW 80-10 longwire by "MyAntennas". QSL via his home callsign, direct, by the Bureau, LoTW, ClubLog's OQRS or eQSL. For more details and updates, see:

<http://southcook2019.com> Also watch Twitter at: <https://twitter.com/@e51hmk>

E5, SOUTH COOK ISLANDS. Doug, W6HB, will once again be active as E51DLD from either Jim/E51JD or Bob/E51BQ's shack on Rarotonga Island (OC-013) between April 21-28th. Activity will be holiday style on 160-10 meters. QSL via his home callsign.

EI, IRELAND. Members of the Kerry Amateur Radio Group are QRV as EI100YXQ during 2019 to mark the hundred years since the first transatlantic voice transmissions from Ballybunion, Ireland to Louisbourg on Cape Breton Island, Canada. QSL via EI9FVB.

EM1, ANTARCTICA. Roman, UT7UA, will soon be active as EM1UA and/or EM1A from the Ukrainian Antarctic Akademik Vernadsky Base base station (EM1U) on Galindez Island (AN-006, WASA UR01). His license is good until February 1st, 2020. Activity will be on various HF bands and modes. QSL via UT7UA.

FK, NEW CALEDONIA. Arnaud, JG1XMV, will once again be active as FK/JG1XMV from New Caledonia until March 10th. He will have his friend Yves, FK4RD, again with him. His activity will be from Grand Terre Island (OC-032), but may also visit Lifou (OC-033) and Mare (OC-033) islands during his stay. Operations will be on 40/20/17/15 meters SSB. QSL via home call direct, LoTW and eQSL.

FY/TO2, FRENCH GUIANA. Hartwig, DL7BC, will once again be active as TO2BC from French Guiana between March 21st and April 2nd. He will be active during the CQWW WPX SSB Contest (March 30-31st). Activity will be holiday style before and after the contest, and will probably be on 40-10 meters (possibly 80m) using a Kenwood TS590SG into a Spiderbeam for 20-10m with WRTC-40m-extension and a Triple-Leg for 40m. QSL via his home callsign, direct, by the Bureau, Club's OQRS or LoTW. Watch his Web page for updates at: <http://www.qlsnet.de/dl7bc>

HP, PANAMA Special event station H31A will be QRV from Jan 1 to Aug 15 to celebrate the 500 years since the founding of the nation. Activity on 80 to 10 meters using SSB, RTTY, FT8 and some PSK31. QSL via HP1AVS.

HS, THAILAND. Special event station HS55RAST is QRV until March 31 to commemorate the 55th anniversary of the Radio Amateur Society of Thailand. QSL via HS5NMF.

HS, THAILAND. Lars, SM6NT is QRV as HS0ZME until April 9. Activity is on the HF bands. QSL to home call.

JA, JAPAN. Special event stations 8J0M, 8J2M and 8J9M are QRV until April 30 to mark the 30th General Assembly of the Japan Medical Congress in Chubu. QSL direct to JP7FSO.

KG4, GUANTANAMO BAY. David, AC8AY, is now active as KG4AY from Guantanamo Bay (NA-015) until March 21st. Activity will be on 80-10 meters using only SSB. QSL via AC8AY, direct, eQSL, LoTW or QRZ.com Log Book.

MJ, JERSEY. Kazu, JK3GAD, will once again be active as MJ0CFW from Jersey (EA-013) between March 15-17th.

Look for activity in the Russian DX Contest (March 16-17th). In the contest he will sign MJ5Z. QSL via LoTW, M0CFW or via the OQRS (ClubLog).

PJ2, CURACAO. Operators Jeff/K1ZN, Chuck/AE4CW, David/AG4F, Nathan/K4NHW, Bill/KV4UD, Barclay/WT4BT, Robert/NF5F and David/VA7AM will be active as PJ2T from Curacao Island (SA-099, WLOTA LH-0942) at the Signal Point Station during the CQWW WPX SSB Contest (March 30-31st). QSL via K1ZN.

V3, BELIZE. Paul, VE3AXT, is once again active as V31AX in the northern part of the country, Consejo Shores, Corozal, until mid-May. His rig is an IC-7300 with 100 watts into a Hexbeam G5RV dipole. QSL via M0URX and OQRS. Bureau QSLs are via OQRS ONLY at . Please do not send YOUR QSL card via the Bureau. For more info and pictures, see his V31AX QRZ.com Web page.

VK, AUSTRALIA. Taka, JA8COE, will be active as VK4/JA8COE from Wangai Beach Hotel on Horn Island (OC-138) between March 14-17th. Activity will be on various HF Bands. QSL via JA8COE. For more details and updates, watch: <https://blog.goo.ne.jp/takaja8coe>

VK9N, NORFOLK ISLAND. Operators Chris/VK3QB, Luke/VK3HJ, Patrick/VK2PN and David/VK3BDX will be active from Norfolk Island between April 1-14th. Their main focus will be on low bands using CW and FT8, but will also be active on various HF bands on SSB. The team plans to include some SOTA activation from "Mt. Bates" and "Jacky Jacky" summits. Look for more details to be forthcoming such as callsign, QSL, Clublog and FaceBook info.

XV, VIETNAM. Andy, DL3YM, active as XV9YM on a job trip to Ho Chi Minh City until Mar 18. Activity limited to his spare time on 40-10 m using mainly CW. All QSOs will be confirmed with a card and uploaded to LoTW.

XV, VIETNAM. Jacek, SP5APW, will once again be active from Vietnam during March. Look for him to be active as XV9JK/p (pending) from Mui Ne City between March 6-8th, and as XV9JK (pending) from Cu Lao Thu Island (AS-157) between March 10-16th. Activity will mainly be on 20/17 meters using SSB, and possibly FT8 on 40/30 meters. QSL via his home callsign, direct, by the Bureau or LoTW.

Z8, SOUTH SUDAN Diya, YI1DZ is QRV as Z81D from Juba and is here for the next six months. Activity is in his spare time on 80 to 10 meters using SSB and various digital modes. QSL via OM3JW.

IOTA NEWS...

AF-019. Members of the ARI Modena will be active as IG9MO from Lampedusa Island (IIA G001, WLOTA N. 2312, WAIP AG) between March 28th and April 2nd. Activity will be on various HF bands using CW, SSB, RTTY and other Digital modes. They plan to be in the CQWW WPX SSB Contest (March 30-31st). QSL via info on QRZ.com.

AF-118. (New IOTA) Toufelaz, CN8QY, is planning to lead a team to activate Los Farallones Island, Morocco, between July 25-30th. Callsign will be 5C9A. Operators mentioned are Zidane/CN8CE, Toufelaz/CN8QY, Hamid/CN8HDZ, CN8PA/CN8PA, Ferti/CN8RAH, Leopoldo/I8LWL, Bruno/IK2PZG, Simon/IZ7ATN, Col/MM0NDX and possibly 1-2 more. They are looking for support. Details are on QRZ.com.

OC-016. Jim, WB2TJO, will once again be active as 3D2JS from Taveuni Island, Fiji, between early February and March 10th. Activity will be on 40-15 meters using mainly CW, but also SSB and the Digital modes. The rig will be an ICOM 706 MK IIG with an MFJ 971 manual tuner. QSL via his home callsign.

OC-150. Members of ORARI Lokal Lombok Timur Club Station, YB9ZGD, will be active from Lombok Island, Indonesia, during the CQWW WPX SSB Contest (March 30-31st) as a Multi-Single entry. Team leader as Ahbab/YB9JA and supported by Adi/YB9GV. QSL via YB9ZGD, direct, eQSL or ClubLog.

OC-183/ Operators Andy/VK6MAV and Vlad/ER1PP will be active as VK5MAV/6

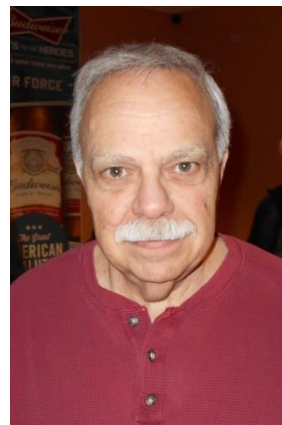
OC-211. from both Houtman Abrolhos Island (OC-211) and Favorite Island (OC-183) between April 15-25th but it's not final; it depends on Vlad's visa conditions and international flight's availability. Also third party's interests and plans are involved. For more details and updates, watch: <http://vk5mav.wixsite.com/dxpedition/next-expedition>

Yes I know that I have given you a lot of DX opportunities. But we have to understand that some of these folks are using low power and small antennas, so if they are heard it will be a miracle. But we have to keep believing and get on the air. Until next month, 73 and Gud DX!!

Antenna Special Interest Group

Tony, WA8AR

The Antenna Special Interest Group will meet at 7:30 PM in the PCARS club site radio room on the third Tuesday of every month. Please note that our regular meeting time of 7 PM has been pushed back to 7:30 to accommodate Field Day planning meetings which will be held from 6:30 to 7:30, January to June. ALL PCARS Members are invited to attend Field Day meetings as well. Our February Field Day and Antenna Special Interest Group meetings will be held on 3/19/2019. All PCARS members and guests are welcome to attend the Antenna Special Interest Group (the Field Day meeting is only open to PCARS members). We will be discussing all antenna related topics including selection, design, construction, trouble shooting and safety for all Amateur Radio bands.

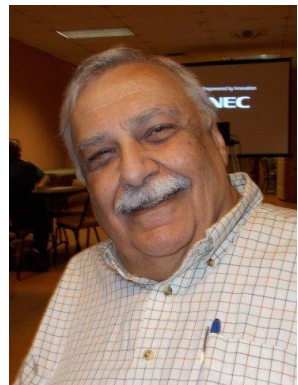


Please note that the PCARS QST email system is functioning very well, so please watch for PCARS QST's for last minute announcements prior to all Special Interest Groups. And, always check the PCARS web site for Antenna Special Interest Group updates or last minute cancellations before going to the club site for a meeting.

DX & Contest Special Interest Group

Chuck, W8PT

Our next meeting of the DX/Contest Special Interest Group will be on March 26 at 7PM. Since we will have just participated two weeks prior to the meeting in the Wisconsin and Idaho QSO Parties, we will be reviewing our efforts in those two contests and we will also be discussing our up-coming participation in the Florida QSO Party that will take place on April 27-28.

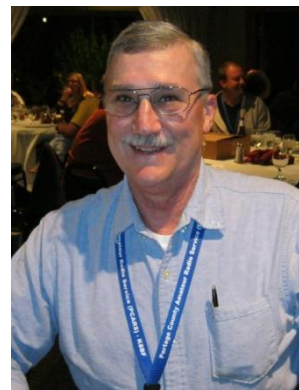


As always, I encourage anyone who would like to help in our efforts in putting K8BF on the air, to come out and have some fun with your fellow PCARS members. Keep in mind that we have brand new rigs and unless you are fortunate to own a new ICOM 7300, where else can you get to operate one in a laid back contest format.

So come on out and help us put K8BF on the air during the Idaho and Wisconsin QSO Parties that take place on Mar. 9 and 10 and then attend the meeting to add your 2 cents into the discussion. Hope to see many of you there on these dates.

Digital Special Interest Group

Rick, K8CAV



The Digital Special Interest Group will be holding its next meeting on Tuesday March 5th at 7:00 PM at the PCARS Club Site in Ravenna. This month is a get-on-the-air month and now that the club's IC-7300's have been configured, they will be available for use. Each of the stations will have both fldigi with flrig, and WSJT-X set up to use computer rig control. We should be able to operate at least two different bands at the same time.

If you're looking to add to your contacts for WAS or other awards, just want to enjoy making some digital Q's, or make that first digital Q, this is a great place to give it a whirl. We'll also be making time available to help with questions or problems involving digital operations. If you want, please feel to bring your computer, radio, or other equipment you may have issues with and we'll do our best to help out.

CW/QRP & Linux Special Interest Groups

Terry, KB8AMZ



CW & QRP SIG

A Switchable Balun Build is the project the SIG has decided to go with for the group's next build. Doug, WA8UMV suggested the switchable balun 1:1 or 4:1 that Jim, AC8NT had as a build project a while ago. This project is both for QRP transceivers and QRO transceivers but the limit for the higher power transceiver is 100 watts. This covers most transceivers up to 100 watts output. Where or why would you use a switchable balun? You might use a switchable balun when away from your home shack and you are not sure which balun will give the best SWR but you're fairly certain you don't need an UNUN or 9:1 BALUN.

I was beginning to have doubts that this project would not begin next month because my source for toroids, KitsandParts.com, had not responded to an email that I sent 10 days ago. I sent another email before tonight's Antenna SIG and found a pleasant response when I arrived home. The required toroids are available. Doug, WA8UMV provided the source of the project build from N1LO at this web site: <https://www.qsl.net/n1lo/build.htm> showing a schematic and BOM (bill of materials). The toroid used in this project is the Amidon FT140-61 and the switchable kit requires 2 toroids. I will order enough toroids for 10 kits.

There are 4 commitments from the QRP-CW SIG now leaving 6 sets of toroids. If you are interested in joining us for the build then contact me at terry.kb8amz@gmail.com to put on the list. The toroids I order will cost you \$2.25 each, or you can order them from kitsandparts.com at 2 for \$6. If you plan to join this build you will need to dig into your box for the other items or purchase them for the build. Whether your kit box is plastic or metal you need to have the openings drilled/cut before coming to the SIG for assembly.

I hope to see you March 12th for the "Switchable Balun" build.



Contest Calendar

March Contest Calendar	
Contest Name	Times
ARRL Inter. DX Contest, SSB	0000Z, Mar 2 to 2400Z, Mar 3
Idaho QSO Party	1900Z, Mar 9 to 1900Z, Mar 10
Wisconsin QSO Party	1800Z, Mar 10 to 0100Z, Mar 11
BARTG HF RTTY Contest	0200Z, Mar 16 to 0200Z, Mar 18
CQ WW WPX Contest, SSB	0000Z, Mar 30 to 2400Z, Mar 31

YES - There are MANY More Contests out there - Check the internet.

Contests that will be active at the PCARS Club Site in 2019	
Date	Contest
Mar 9-10	Idaho and Wisconsin QSO Parties
Apr 27-28	Florida QSO Party
May 4-5	7th Call Area; Indiana; Delaware; New England QSO Parties
Jul 20-21	NA QSO Party RTTY
Aug 24-25	Ohio QSO Party/ BBQ
Oct 5-6	California QSO Party
Oct 12-13	Arizona QSO Party



Some Notes About Field Day 2019

Tony, WA8AR
Field Day Chairman



The March Monthly Field Day Planning meeting will be held on Tuesday 3/19/19 at 6:30 to 7:30 pm in the radio room at the PCARS Club site. All Field Day Station Captains and Field Day Staff should attend. Our monthly meetings are also open to all PCARS members who wish to participate. These meetings will end at 7:30 sharp to accommodate the following Antenna Special Interest Group Meeting.

As previously stated, our goal this year is to be #1 in the nation in our 4A operating Class. We are making a number of tweaks and upgrades to our 2018 operating effort that we expect could move us up from #4 to #1. But it all comes down to the work that our members put in to make this happen. This is a Team effort.....Come Join the Field Day Team, even if you can only make a small contribution to the effort, it all adds up and can help us reach our goal.



Flex Station - Field Day 2019

Rick, K8CAV
Field Day Flex Station Captain



Cold, snow, and ice typical of February makes it difficult to think of the hot humid days of June when Field Day occurs but it's just a bit more than eleven weeks until our Field Day dress rehearsal occurs on May 11th, and a bit more than 17 weeks until Field Day on June 22nd and 23rd. One of the keys to success for the Flex Station has been to try to the greatest extent possible, to have operators and loggers volunteer for assignments at the Flex Station well before Field Day occurs. Having this information allows participants to prepare personally, and to participate in training and a simulated Field Day on-the-air session before Field Day so we can really optimize Flex Station operations.

So, what does the Flex Station do? Unlike our other three HF stations who operate on only one mode and/or band, The Flex Station, subject to a few limitations is band and mode agile. Let's talk about the limitations first. PCARS has two phone stations in our class, one on 40 meters and one on 20 meters. The rules only allow one station in a given mode on a given band to operate at the same time so the Flex Station can't operate on either of these bands in phone. The CW station operates in multiple bands, and CW and digital are considered separate modes. Due to their proximity in the CW/digital sub-band interference issues are such that the CW and Flex Stations limit operations on the same band at the same time. Outside of those limitations the Flex Station is free to operate on HF bands and modes available for Field Day. Given conditions at this point during the current sun spot cycle it makes sense to concentrate efforts on 80m, 40m, and 20m, scheduling bands and modes appropriate to the time of day, while not ignoring 15m or 10m for openings.

In order to maximize the success of the Flex Station, there are some key things that are planned for this year's operation.

- Fill all operator/logger slots well before Field Day. This is the most important path to a successful Flex Station. The schedule to date is shown in this article so if you're thinking about participating, and I hope you are, look it over and let me know where and when you'd like to participate. I'm especially looking for proficient digital and CW operators to fill the open slots we have.
- Maximize 'Hold/Run the frequency'. This is a proven technique of maximizing contacts during any contest operation, Field Day included, and unless circumstances dictate otherwise, should be the primary and preferred way to operate.
- Conduct training at the PCARS club site before Field day. The training will focus on FT8 and fldigi (primarily PSK-31 and RTTY) operations using the club's IC-7300 in dummy loads to do actual on-the air training and operation. The IC-7300 is the radio that will be used at the Flex Station and the training will include how to use filter settings and other items to help with gaining more contacts. I would also like to conduct training using the N3FJP logging program for operators and loggers.
- If possible, set up monitor only capability to monitor 15m and 10m during daylight hours for openings on those bands, and to let Flex Station operators know of those openings to determine if it is worthwhile changing to either of those bands for operations.

This is an ambitious program but I think that if it can be accomplished, it will go a long way towards getting the Flex Station to contribute a significant number of contacts for PCARS Field Day. I really want to make this a record-breaking year for the Flex Station so let me know if you're willing to help.

<i>Flex Station Schedule - Field Day 2019</i>				
DAY	TIME	MODE	OPERATOR	LOGGER
SAT 23	1400-1600	40M FT8 DIGITAL	Jim AC8NT	Rick K8CAV
	1600-1800	20M DIGITAL	Steve K8SRR	Rick K8CAV
	1800-2000			
	2000-2200	80M CW	Terry KB8AMZ	
	2200-0000			
SUN 24	0000-0200	80M PHONE	Deron N8XTH	
	0200-0400			
	0400-0600	80M DIGITAL	Rick KD8WCK	
	0600-0800			
	0800-1000	80/40/20M DIGITAL	Gene W8NET	
	1000-1200			
	1200-1400			



□ *The Ghostly Station No One Claims to Run*

Zaria Gorvett
BBC



“MDZhB” has been broadcasting since 1982 - No one knows why

In the middle of a Russian swampland, not far from the city of St Petersburg, is a rectangular iron gate. Beyond its rusted bars is a collection of radio towers, abandoned buildings and power lines bordered by a dry-stone wall. This sinister location is the focus of a mystery which stretches back to the height of the Cold War.

It is thought to be the headquarters of a radio station, “MDZhB”, that no-one has ever claimed to run. Twenty-four hours a day, seven days a week, for the last three-and-a-half decades, it’s been broadcasting a dull, monotonous tone. Every few seconds it’s joined by a second sound, like some ghostly ship sounding its foghorn. Then the drone continues.

Once or twice a week, a man or woman will read out some words in Russian, such as “dinghy” or “farming specialist”. And that’s it. Anyone, anywhere in the world can listen in, simply by tuning a radio to the frequency 4625 kHz.

It’s so enigmatic, it’s as if it was designed with conspiracy theorists in mind. Today the station has an online following numbering in the tens of thousands, who know it affectionately as “the Buzzer”. It joins two similar mystery stations, “the Pip” and the “Squeaky Wheel”. As their fans readily admit themselves, they have absolutely no idea what they are listening to.

Anyone can listen to the Buzzer, simply by tuning a radio to the frequency 4625 kHz (Credit: iStock)

In fact, no-one does. “There’s absolutely no information in the signal,” says David Stupples, an expert in signals intelligence from City University, London.



What’s going on?

The frequency is thought to belong to the Russian military, though they’ve never actually admitted this. It first began broadcasting at the close of the Cold War, when communism was in decline. Today it’s transmitted from two locations – the St Petersburg site and a location near Moscow. Bizarrely, after the collapse of the Soviet Union, rather than shutting down, the station’s activity sharply increased.

There’s no shortage of theories to explain what the Buzzer might be for – ranging from keeping in touch with submarines to communing with aliens. One such idea is that it’s acting as a “Dead Hand” signal; in the event Russia is hit by a nuclear attack, the drone will stop and automatically trigger a retaliation. No questions asked, just total nuclear obliteration on both sides.

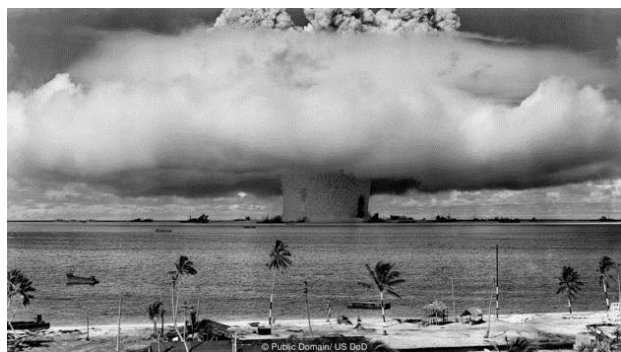
There are clues in the signal itself

This may not be as wacky as it sounds. The system was originally pioneered in the Soviet era, where it took the form of a computer system which scanned the airwaves for signs of life or nuclear fallout. Alarming, many experts believe it may still be in use. As Russian president Vladimir Putin pointed out himself earlier this year, “nobody would survive” a nuclear war between Russia and the United States. Could the Buzzer be warding one off?

As it happens, there are clues in the signal itself. Like all international radio, the Buzzer operates at a relatively low frequency known as “shortwave”. This means that – compared to local radio, mobile phone and television signals – fewer waves pass through a single point every second. It also means they can travel a lot further.

While you’d be hard pressed to listen to a local station such as BBC Radio London in a neighboring

county, shortwave stations like the BBC World Service are aimed at audiences from Senegal to Singapore. Both stations are broadcast from the same building.



If the "dead hand" system did not detect signs of a preserved military hierarchy it would automatically trigger a retaliation (Credit: Public Domain/ US DoD)

It’s all thanks to “skywaves”. Higher frequency radio signals can only travel in a straight line, eventually becoming lost as they bump into obstacles or reach the horizon. But

shortwave frequencies have an extra trick – they can bounce off charged particles in the upper atmosphere, allowing them to zig-zag between the earth and the sky and travel thousands, rather than tens, of miles.

Which brings us back to the Dead Hand theory. As you might expect, shortwave signals have proved extremely popular. Today they’re used by ships, aircraft and the military to send messages across continents, oceans and mountain ranges. But there’s a catch.

The lofty layer isn’t so much a flat mirror, but a wave, which undulates like the surface of the ocean. During the day it moves steadily higher, while at night, it creeps down towards the Earth. If you want to absolutely guarantee that your station can be heard on the other side of the planet – and if you’re using it as a cue for nuclear war, you probably do – it’s important to change the frequency depending on the time of day, to catch up. The BBC World Service already does this. The Buzzer doesn’t.

Another idea is that the radio station exists to “sound” out how far away the layer of charged particles is. “To get good results from the radar systems the Russians use to spot missiles, you need to know this,” says Stupples. The longer the signal takes to get up into the sky and down again, the higher it must be.

There is a station with some striking similarities

Alas, that can’t be it either. To analyse the layer’s altitude the signal would usually have a certain sound, like a car alarm going off – the result of varying the waves to get them just right. “They sound nothing like the Buzzer,” says Stupples.

Intriguingly, there is a station with some striking similarities. The “Lincolnshire Poacher” ran from the mid-1970s to 2008. Just like the Buzzer, it could be heard on the other side of the planet. Just like the Buzzer, it emanated from an undisclosed location, thought to be somewhere in Cyprus. And just like the Buzzer, its transmissions were just plain creepy.

At the beginning of every hour, the station would play the first two bars of an English folk tune, the Lincolnshire Poacher.

“Oh ‘tis my delight on a shining night - In the season of the year - When I was bound apprentice in famous Lincolnshire - ‘Twas well I served my master for nigh on seven years...”

After repeating this 12 times, it would move on to messages read by the disembodied voice of a woman reading groups of five numbers – “1-2-0-3-6” – in a clipped, upper-class English accent.

To get to grips with what was going on, it helps to go back to the 1920s. The All-Russian Co-operative Society (Arcos) was an important trade body, responsible for overseeing transactions between the UK and the early Soviet Union. Or at least, that’s what they said they did.

After the Arcos raid in London, the Russians realized they needed a better way to communicate with spies hiding abroad
(Credit: Getty)



In May 1927, years after a British secret agent caught an employee sneaking into a communist news office in London, police officers stormed the Arcos building. The basement had been rigged with anti-intruder devices and they discovered a secret room with no door handle, in which workers were hurriedly burning documents.

It may have been dramatic, but the British didn’t discover anything that they didn’t already know. Instead the raid was a wake-up call to the Soviets, who discovered that MI5 had been listening in on them for years.

“This was a blunder of the very first order,” says Anthony Glees, who directs the Centre for Security and Intelligence Studies at the University of Buckingham. To justify the raid, the prime minister had even read out some of the deciphered telegrams in the House of Commons.

The upshot was that the Russians completely reinvented the way messages are encrypted. Almost overnight, they switched to “one-time pads”. In this system, a random key is generated by the person sending the message and shared only with the person receiving it. As long as the key really is perfectly random, the code cannot be cracked. There was no longer any need to worry about who could hear their messages.

Enter the “numbers stations” – radio stations that broadcast coded messages to spies all over the world. Soon even the British were doing it: if you can’t beat them, join ‘em, as they say. It’s quite difficult to generate a completely random number because a system for doing so will, by its very nature, be predictable – exactly what you’re trying to avoid. Instead officers in London found an ingenious solution.

They’d hang a microphone out of the window on Oxford Street and record the traffic. “There might be a bus beeping at the same time as a policeman shouting. The sound is unique, it will never happen again,” says Stupples. Then they’d convert this into a random code.

Of course, that didn’t stop people trying to break them. During World War Two, the British realised that they could, in fact, decipher the messages – but they’d have to get their hands on the one-time pad that was used to encrypt them. “We discovered that the Russians used the out-of-date sheets of one-time pads as substitute toilet paper in Russian army hospitals in East Germany,” says Glees. Needless to say, British intelligence officers soon found themselves rifling through the contents of Soviet latrines.

Now North Korea is getting in on the act, too

The new channel of communication was so useful, it didn't take long before the numbers stations had popped up all over the world. There was the colorfully named "Nancy Adam Susan", "Russian Counting Man" and "Cherry Ripe" – the Lincolnshire Poacher's sister station, which also contained bars of an English folk song. In name at least, the Buzzer fits right in.

It also fits with a series of arrests across the United States back in 2010. The FBI announced that it had broken up a "long term, deep cover" network of Russian agents, who were said to have received their instructions via coded messages on shortwave radio – specifically 7887 kHz.



Messages encrypted using one time pads cannot be cracked (Credit: Getty)

Now North Korea is getting in on the act, too. On 14 April 2017, the broadcaster at Radio Pyongyang began: "I'm giving review works in elementary information technology lessons of the remote education university for No 27 expedition agents."

This ill-concealed military message was followed by a series of page numbers – No 69 on page 823, page 957 – which look a lot like code.

It may come as a surprise that numbers stations are still in use – but they hold one major advantage. Though it's possible to guess who is broadcasting, anyone can listen to the messages – so you don't know who they are being sent to. Mobile phones and the internet may be quicker, but open a text or email from a known intelligence agency and you could be rumbled.

It only becomes a numbers station in moments of crisis, such as if Russia were invaded

It's a compelling idea: the Buzzer has been hiding in plain sight, instructing a network of illicit Russian spies all over the world. There's just one problem. The Buzzer never broadcasts any numbered messages.

This doesn't strictly matter, since one-time pads can be used to translate anything – from code words to garbled speech. "If this phone call was encrypted you'd hear "...enejekdhejenw..." but then it would come out the other side sounding like normal speech," says Stupples. But this would leave traces in the signal.

To send information over the radio, essentially all you're doing is varying the height or spacing of the waves being transmitted. For example, two low waves in a row means x, or three waves closer together means y. When a signal is carrying information, instead of neat, evenly spaced waves like ripples on the ocean, you're left with a wave like the jagged silhouette of an ECG.

During the Cold War, Soviet spies were instructed via shortwave radio (Credit: Alamy)

This isn't the Buzzer. Instead, many believe that the station is a hybrid of two things. The constant drone is just a marker, saying "this frequency is mine, this frequency is mine..." to stop people from using it.



It only becomes a numbers station in moments of crisis, such as if Russia were invaded. Then it would function as a way to instruct their worldwide spy network and military forces on standby in remote areas. After all, this is a country around 70 times the size of the UK.

It seems they're already been practicing. "In 2013 they issued a special message, 'COMMAND 135 ISSUED' that was said to be test message for full combat readiness," says Maris Goldmanis, a radio enthusiast who listens to the station from his home in the Baltic states.

The mystery of the Russian radio may have been solved. But if its fans are right, let's just hope that drone never stops.

This story is featured in BBC Future's "Best of 2017" collection.

<http://www.bbc.com/future/story/20170801-the-ghostly-radio-station-that-no-one-claims-to-run?fbclid=IwAR0rsFXG5RjgFOgzBmbb0wlUTJHoBQ6Ly6GEEeE11VH7-ossao0Mr9pc08E>

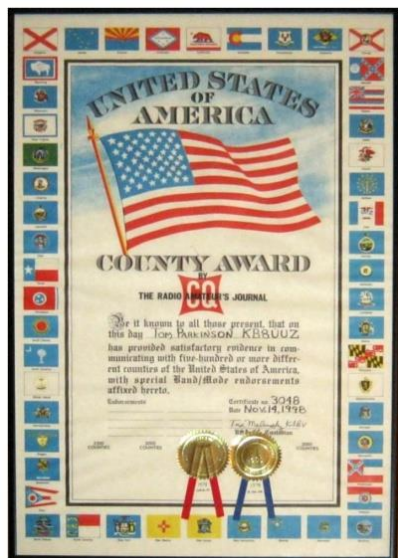
Join 800,000+ Future fans by liking us on Facebook, or follow the BBC on Twitter. If you liked this story, sign up for the weekly bbc.com features newsletter, called "If You Only Read 6 Things This Week". A handpicked selection of stories from BBC Future, Earth, Culture, Capital, and Travel, delivered to your inbox every Friday.

Paper Chase

Joe, W8KNO

If you receive CQ magazine and read "AWARDS", you already know this. If you do not, please read on:

K1BV Bids Farewell



With this issue of CQ, I'm "retiring" as USA-CA Custodian and "Awards" columnist. What 20 years ago started off by sending the actual award in a manila envelope accompanied by a floppy disk. There was a fairly large backlog of USA-CA awards, which had to be taken. At that time, and for 15 years after, we were still using the original certificate that was printed in 1962. We finally ran out of these certificates historic documents and ordered a new printing just three years ago.

I never got tired of receiving USA-CA applications, and sending the congratulations in an email or telephone call. It was an exciting event to send that message, as all of you worked so hard to complete the program; some for many years.

While only a small percentage of permanent award certificates were addected, I enjoyed the shift towards free or very low cost awards for short period certificates. Postal rates helped there.

I would like to thank everyone for suggesting new awards. You will have been exposed to some very interesting people, learned a good deal of history and achievement.

- Ted Melnosky, K1BV

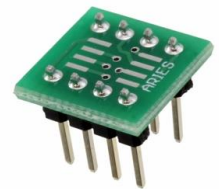
Tech Tip - Living With Surface Mount Devices

Jim, AC8NT



Elsewhere in this newsletter you may have read about a couple of projects using the AD8307 logarithmic amplifier chip. These projects looked simple enough only requiring a few parts and some simple construction. They screamed build me. However, there were problems. The dip AD8307AN used in the field strength meter article was not easy to find and those available were expensive (almost \$14). The construction method used for the project was a version of the Manhattan style making connections directly to the dip part. Not easily done without a dip part. I found a surface mount part for 93 cents, but I needed to find a way to use it. This tip explains how to make a dip part from a surface mount part.

I have soldered my share of surface mount parts and using what is called a surface mount breakout board can, with some care, make it possible use a surface mount part as a dip. How is this done? First buy a surface mount breakout board similar to Digi-Key A880AR-AD shown in the picture to the right. These can be purchased for about \$3. Next solder the AD8307 surface part to the board. This turns the surface mount part into a useable “dip” configuration that is much easier to handle. You do, however, need to know how to solder the part to the board. A couple of methods can be used to solder the part, standard iron soldering and the use of a hot air system.



The steps required for the standard soldering approach are:

- Lightly tin all pads with a minimum of solder
- If it is an IC or relatively large part, use a very small drop of crazy glue applied with a needle to glue the part to the board. If you have even the most modest case of the shakes, this is a very good idea. Remember you only get one chance to align the pads. Use a vacuum pick up tool to handle the part.
- Solder the opposing corner contacts first.
- Solder the rest of the pads.
- If you bridge pads by accident, use solder wick to remove the excess.
- Use a magnifier to see what you are doing and don't use too much heat.

You can also use solder paste/hot air method. This is the system I most often use. Here are the steps:

- Using a magnifier apply the paste to each of the pads. Don't over apply!
- Place the part on the board. You can use the crazy glue if you feel it is necessary to hold the part.
- Using a hot air soldering station heat the part and board using low velocity hot air until the paste is melted. You must use the tool to preheat the board and then apply more heat to the paste areas to complete the connections.
- Wait for the part to completely cool.
- At the bottom of this article is a link to a YouTube video that shows this process along with how a solder mask can be used for an entire board.

As I said, my favorite method is the paste method, but I have used both. I know this may sound too easy. It takes some time and practice, but it can be done. And the fact is most dip parts are disappearing from catalogs, so you will need to learn some new skills.

We already have the hot air station in the club lab and we will have ordered a vacuum pickup pen, some solder paste, flux and a board cleaner. For those of us that need a little help with seeing the work, we have

magnifiers to assist. The next build day, you may want to try your hand at your first surface mount project. Let me know if you need any help.

A future project for the club will be building a reflow oven that can be used for entire boards.

The QEX article: http://www.arrl.org/files/file/QEX_Next_Issue/Jan-Feb2019/Alldread.pdf

The YouTube Video: <https://www.youtube.com/watch?v=qqoHTKhIBRo>

https://www.youtube.com/watch?v=4Z1B_DbW-C0

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.**

Don't forget - 4th Thursday is NET NIGHT at the Club Site !!

March	
7	N8XTH
14	K8IV
21	K8CAV
28	WB8LCD

April	
4	AC8NT
11	KA8TOA
18	N8QE
25	WB8LCD

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

I am trying to get some new net control operators, anyone interested please contact me.

If you have not been a Net Control Operator for PCARS and would like to give it a try, *please* contact me at: gorgory999@roadrunner.com everyone who is a club member is welcome to have a turn - and have fun being the PCARS Thursday Night Net Control !

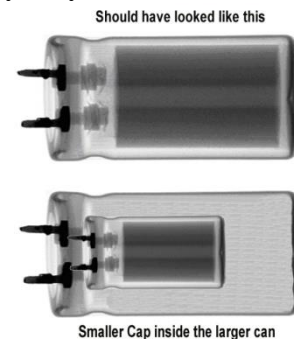
What's Inside? Hidden Parts

Jim, AC8NT



Just to show how far the use of surface mount has come, did you know that a lot of ceramic capacitors that have wire leads actually are made by attaching wires to a surface mount part and encapsulating the result in plastic. If you would like to see this, spend some time with a razor blade and a purchased wire lead capacitor. Not all are done this way, but most manufacturers are moving this direction for their wire parts. This is why they cost so much more than their surface mount brothers.

Editor's Note: I could not find a picture of a radial wire capacitor with a SMT cap inside, but I did have information on through hole Electrolytic caps. I ran into this when I was working at a PCB assembly company about 14 years ago. We had a failure and found out there was a smaller voltage rated capacitor INSIDE a larger capacitor can. I found this during an X-Ray inspection of the PCB.



PCARS Ham Radio License Plates Wanted !!!

Dig out an old 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 69 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 Yahoo 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.

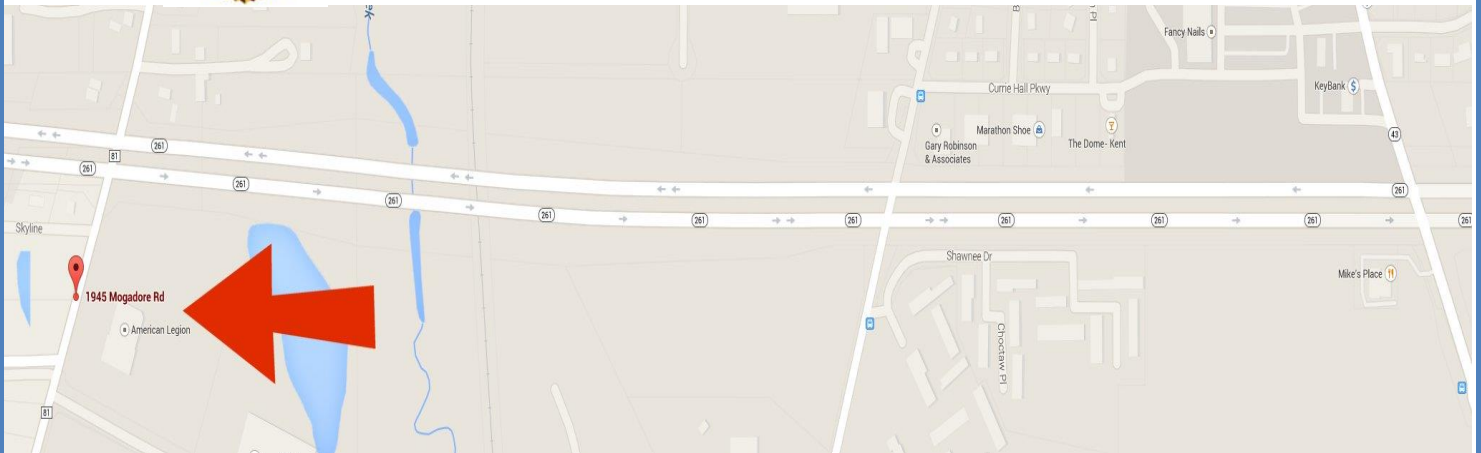


PCARS Meetings

The Portage County Amateur Radio Service (PCARS) 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.

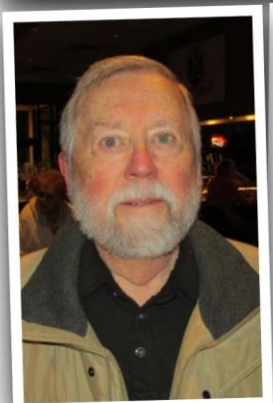
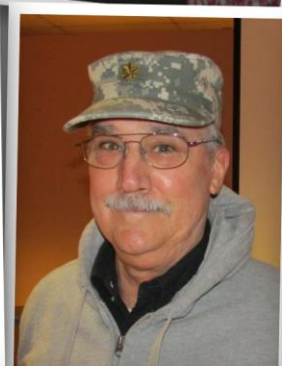
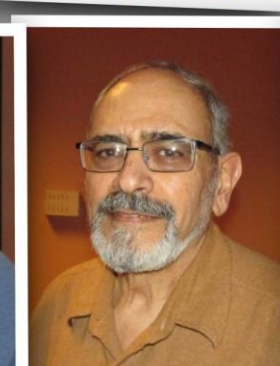
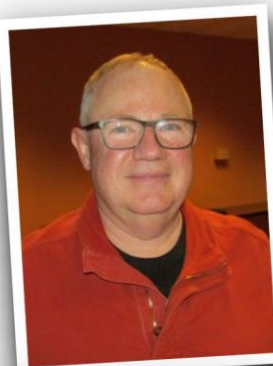


*The picture on the left shows
The American Legion Post 496
as viewed from Mogadore Road.
(looking East)*

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 PCARS February Meeting



PCARS Meeting - 11 February 2019



PCARS Meeting - 11 February 2019



PCARS Meeting - 11 February 2019





Pioneer Amateur Radio Fellowship, Inc.

Hamvention 2019

Saturday, May 18, 2019 - 5:30 AM



Don't miss this year's PARF Bus Trip to the world's largest topical conference and product exhibition. Save on gas, parking, and walking by riding with us! Leave the driving to us, and you can come and go to the flea market with your great purchases and leave them on the bus. This event takes place at the Greene County Fairgrounds in Xenia, Ohio.

You can save \$10* if you book before April 15th.

The cost of the **Bus & Entrance ticket** to the Hamvention:
\$72* before April 15, 2019

The cost of the **Bus Only** to the Hamvention:
\$55* after April 15, 2019

(You will need to get your own Hamvention Entrance Ticket at gate \$27, or order by phone & have held at Will Call--possibly getting Advanced \$22 price.)

The above pricing does not include driver's tip for which a hat will be passed.

P.A.R.F. reserves the right to cancel this trip should a minimum of 22 riders not be secured by April 15th. If that happens, a full refund will be made. Otherwise, cancellation by you at any time results in a \$5 deduction of refund for handling.

We will take riders right up to departure that morning (if there are seats available) on a first come, first served basis.

Departure time is 5:30 AM SHARP, so please be on time so you don't miss the bus!

There will be a stop for breakfast @ McDonald's & a dinner stop @ Golden Corral Buffet (both out of pocket expense).

To Order - Complete application & send with check/money order (*payable to "PARF"*) to:

Joy Spencer % PARF

2101 Bigelow St

Akron, OH 44314

Or call 330-745-5115

E-mail: KA8TDF@arrl.net

NEW THIS YEAR:

Transportation provider: Intimidator Tours & Motorcoach Services, LLC.

This bus is a smoke free bus, so there will be no smoking permitted.

Location of Departure - Walmart, 2887 S. Arlington Road, Akron OH 44312

(Park in spaces across from Applebee's.)

*Parking (as always) is **at your own risk**, but this location is commonly used by a variety of bus companies.*

Please pass the word out to all of your ham friends & computer geeks.

PARF Uses Repeater 147.135 & Owns Repeater 146.610

Web Site: www.qsl.net/w8ctt

Registration Open for Four Days In May



Registration is Open for QRP-ARCI Four Days in May 2019

Registration (<http://adatab.duckdns.org/QRPARCI/registration.cfm>) now is open for the QRP Amateur Radio Club International “Four Days in May” (FDIM), Thursday – Sunday, May 16 – 19, at the Holiday Inn, Fairborn, Ohio. The annual FDIM event for QRP enthusiasts and builders takes place in conjunction with Hamvention®. Registration begins the evening of Wednesday, May 15.

Most of Thursday will be taken up with seminars, “meet the speakers” opportunities, and an open room for casual show and tell. Most of Friday and Saturday are open to attend the Hamvention and visit the QRP-ARCI Toy Store.

Friday evening activities typically include “show and tell,” vendor displays, and a homebrew contest. Saturday evening features social activities and a banquet, while Sunday is open for Hamvention. Attendees are invited to display their QRP-related projects at FDIM. One evening will feature vendors offering QRP-related products, with some offering FDIM discounts. Dress is casual for all events.

Reservations and special room rates for FDIM will be available after January 1 through the **QRP-ARCI website** (<http://www.qrparci.org/>). For more information, **contact** FDIM 2019 Chair Norm Schklar, WA4ZXV (fdim@qrparci.org).

Registration Open for CTU 2019



Registration now (<https://www.contestuniversity.com/registration/>) is open for 2019 ConTest University (CTU), Thursday, May 16, 2019, at the Crowne Plaza in downtown Dayton, Ohio. This is the day before Hamvention® opens in Xenia.

More than 7,500 students have attended CTU sessions over the last 13 years in eight countries, and more than 100 CTU professors have shared their contesting experiences. The faculty lineup, posted on the CTU website, includes several new and returning members. Newcomer Bryant, KG5HVO, will present ideas for attracting youth into contesting, while Dan, N6MJ, and Chris, KL9A - the gold medalists at WRTC 2014 - will present advanced operating papers.

Not teaching but on hand to field questions will be CTU stalwart Frank, W3LPL. The 2019 CTU Dayton course outline will be posted soon. Scholarships (paid registration) are available for CTU attendees through a grant from the Northern California DX Foundation (NCDXF - <http://www.ncdxf.org/>) for students age 25 and younger. Click the “**Contact Us**” tab on the CTU website.

CTU Dayton 2019 registration information is on the **CTU website** (<http://contestuniversity.com/>). Prospective attendees who have given or will give a talk about Amateur Radio to any club, hamfest, or other group since May 16, 2018, qualify for a \$10 registration discount. Choose the “Registration with Club Talk Discount” option.

Thanks & 73



Parky, KB8UUZ
PCARS Newsletter Editor



All of our members (and others) look forward to getting this newsletter every month, so keep sending those inputs! I'm sure PCARS is known as the **BIG FUN** amateur radio club with plenty of activities. So chip in and send your report in to keep this newsletter great throughout 2019 and beyond.

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

AC8NT, AC8QG, KB8UUZ, W8PT, WB8LCD, KA4KOE, N8VES, K8CAV, N8XTH, KD8MQ, WA8AR, KB8AMZ, W8KNO, KA8TOA, Zaria Gorvett from the BBC, The ARRL and the World-Wide Web.

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



PCARS
www.portcars.org



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

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

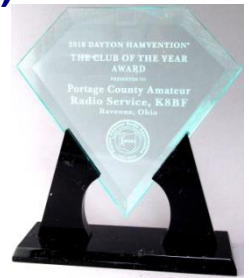


PCARS meets the second Monday of each month at the **Kent American Legion Post 496**, 1945 Mogadore Rd. - just South of Rt. 261 - enter the rear of the building for the meeting room.

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: **K8SRR**

Check PCARS out on the web: www.PORTCARS.ORG -or- www.K8BF.ORG



~ 2019 Officers ~		2019 PCARS Appointments & Committees		
President - Jim Wilson - AC8NT Vice President - Nick Wagner - AC8QG Treasurer - Paul Hyland - KE8EGF 3 Year Trustee - Terry Morris - KB8AMZ 2 Year Trustee - Ed Polack - K8IV 1 Year Trustee - Tom Parkinson - KB8UUZ Past President - Rick Kruis - K8CAV	ARRL Awards - DXCC WAS, VUCC, WAC	W8KNO	Joe Wehner	
	Club Site Manager/Liaison	K8CAV	Rick Kruis	
	Contest Coordinator	W8PT	Chuck Patellis	
	EchoLink & Web Guru	K8SRR	Steve Randlett	
	Field Day Chairman, 2019	WA8AR	Tony Romito	
	FYAO Chairman	W8PT	Chuck Patellis	
	Historian	KB8SZI	Peggy Parkinson	
	K8BF Callsign Trustee	KD8SKL	Amy Leggiero	
	K8BF QSL Manager	KD8SKL	Amy Leggiero	
	Membership Chairman	WB8LCD	Tom Sly	
	Net Control Manager	KA8TOA	Greg Ash	
	Net Night - Club Manager	WB8LCD	Tom Sly	
Newsletter Editor	KB8UUZ	Tom Parkinson		
~ Meetings & Net ~		OSPOTA Chairman	KB8UUZ	Tom Parkinson
2 nd Monday of each month. 7pm Thursday night Club Net at 8 pm on 146.895	Public Information Officer	WB8LCD	Tom Sly	
	Secretary	W8NET	Gene Marsh	
	Tech, Gen & Extra Class Manager	AC8NT	Jim Wilson	
	Volunteer Examiner Liaison	KB8UUZ	Tom Parkinson	
	Webmasters	KD8MQ	John Myers	
		K8SRR	Steve Randlett	



**PCARS
Active
Volunteer
Examiner
Team
Members**

KB8UUZ	Tom Parkinson
WB8LCD	Tom Sly
N8XTH	Deron Boring
N8PXW	Jim Korenz
N8QE	Bob Hajdak
K8IV	Ed Polack
W8RID	Robert Davet
WA8CCU	Al Nagy
NR8W	Russ Williams
W8EZT	Frank Tompkins
AC8NT	Jim Wilson
K8MSH	Mark Haverstock
KA8TOA	Greg Ash
KB3GXB	Jennifer Williams
W8PT	Chuck Patellis
AC8QG	Nick Wagner
N8FUM	Dan Torchia



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

NLC



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Ravenna, OH 44266 USA