



# 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

December 2019 - Volume 14 Number 12

**Center of Hope**  
**Donations**  
**Total \$8,350.00**

**Center of Hope**



**Field Day 2019**  
**Results are**  
**published**



**PCARS K8BF**

The Club that puts the FUN in Ham Radio!



Feature Articles	
From the PCARS President	3
From the PCARS Vice President	4
Errol Jordan, KC8RJR - SK	5
PCARS Christmas Party Meeting	7
ARRL Knight Distinguished Service Award	8
Newly Elected Club Officers for 2020	9
Fox Hunting	10
Case Western Reserve College Club Visit	14
Low Power & Portable Operation	15
Skywarn Recognition Day	17
From the ARRL Ohio Section Manager	18
News from the Portage County Coms Unit	21
Think [Box] Tour	22
More than a Million Contacts Made - FD 2019	23
Unusual Antenna Designs	29
Membership - New/Renew Application	38
Upcoming General Class Course Flier	39
Merry Christmas to ALL	40

Mark Your Calendar	
Schedule of Events	6
PCARS Christmas Party Meeting	7
VE Test Sessions	12
Hamfest Calendar	13
Contest Calendar	13
Skywarn Recognition Day	17
Net Info & NCS Schedule	20
Meetings, PCARS	36
FYAO 2020 Flier	37
Upcoming General Class Course Flier	39

Regular Departments	
Coffee Cup - Limited Edition	11
Happy Birthday	11
PCARS Patches & Stickers	12
Swap-N-Shop	16
Paper Chase	19
Charlie the Tuner's HF High-Lites	24
SIG - CW/QRP & Linux	27
SIG - Digital	27
SIG - DX & Contest	28
PCARS IO Group	28
Pictures from the last PCARS Meeting	30
Member Ham License Plates Wanted	34
PCARS on YouTube	34

Finals	
Thanks & 73	41
Fine Print	42



## Portage County Amateur Radio Service

# K8BF

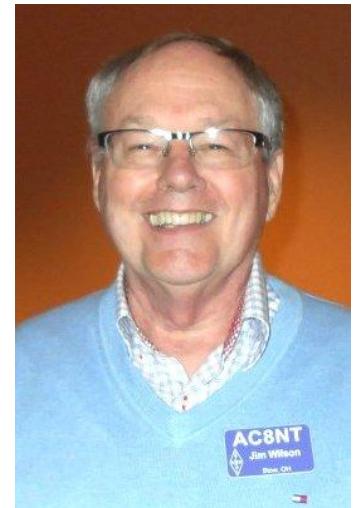
### 2018 Hamvention Club of the Year





## From the President

**Jim, AC8NT**  
PCARS President



### Center of Hope

We did an outstanding job collecting money for the Center of Hope. Our donation check for \$8,350 was presented to Mark Frisone on Tuesday November 19<sup>th</sup>.



Mark was all smiles at the generosity of our club. It will feed a lot of people this holiday season. I am incredibly proud of this club and its support of the Center of Hope. An important part of our mission is supporting our community with projects like this. Thanks again for all your help.

### Club Site

The last of the club site improvement projects for 2019 has been finished. That was the cleanup and reorganization of Bay 3. Every room in the club site has had a refurbishment project completed and the site looks great. We also gained some rough storage by cleaning up the storeroom attached to Bay 3. This will give us a place to store our less often used equipment. This has been a lot of work and I thank all of you that have helped. The task going forward is to keep it maintained and clean.

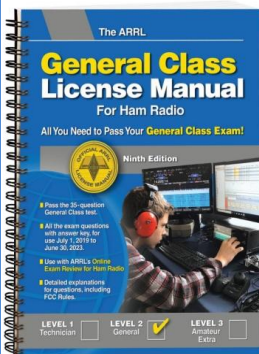
### December Dinner Meeting

Hope to see all of you at the December Christmas Dinner. A copy of the flier is in this newsletter. If you are interested in attending Tom WB8LCD needs to have your reservations by Monday December 2<sup>nd</sup>. You can make your reservation using the PayPal button on the club website or sending a check and your meal option to Tom in the mail. Full details are in the flier. This is always a lot of fun so please come out and enjoy the fellowship of our club.



### General Class

We are setting up a General upgrade class with a planned starting date in February. We are thinking about adjusting the class schedule and content to allow the course to be completed in 6 weeks instead of the usual 8. This will mean more self-study of rules, band edges and other topics that require memorization. We will have a flier out soon with all the details.



PCARS currently has 38 Technician Class holders. I would like to challenge each of them to upgrade so they can enjoy all those great HF privileges. I know all of you can master the material and with the help of our instructors we can help you prepare for the test. Please consider upgrading. The General Class license is the best way to enjoy ham radio.

If you or anyone you know are interested in taking the upgrade course let me know by sending me an email ([jawilson@j3solutions.com](mailto:jawilson@j3solutions.com)). We will need a minimum of 5 to hold the course.

## Technician Class

We finished our latest Tech class on November 6<sup>th</sup>. We had 4 students and 3 passed the test. The fourth plans to try again at our December 7<sup>th</sup> VE session. The class included two sons and their father, a real family experience. We were sorry that two students dropped out just after the course started. They both had scheduling difficulties. Our next class will be a General upgrade class planned to start in February.

## Thanks

I want to thank everyone in PCARS for making my time as President so enjoyable. Being President has been a privilege. It has been work, but I have enjoyed every minute of it. I know Tom, WB8LCD will do a great job leading our outstanding club going forward. Nick, AC8QG will do a great job as VP. John, KD8MQ will make a great Trustee. The rest of the cast remains unchanged. I am looking forward to a great new year containing a lot of activity and fun. I know you will support Tom and the entire team going forward. I will still be very active in the club but will have a little more time for other things I want to get done. Thanks again to everyone.

## From the Vice President

**Nick, AC8QG**  
PCARS Vice President

During this holiday season, I can't help thinking about how grateful I am for the time so many people have given to PCARS. Some have given a lot; some a little. Some have given for years; some for days. I am grateful for all of it. This club is a great club because of the time and attention all of you contribute. I am privileged to serve such an amazing community of friends. Thank you. Happy Thanksgiving and Merry Christmas!



At the November meeting, when we help raise money for the Center of Hope, everyone looks forward to winning the 50/50. Thanks to everyone getting a lot of tickets, this year it was my pleasure to give the winner, Melanie, K8KSU, \$1,001.00 !!

A few days later, I was on the receiving end of tremendous gratitude from the Center of Hope. Mark Frisone spoke glowingly about PCARS and extended his thanks to everyone who generously contributed this year and in the past. A huge thank you goes out to everyone who purchased 50/50 tickets, donated prizes and donated money. I'm proud to see the generosity of PCARS!

Welcome to our newly elected officers for 2020! This leadership team has been set up well by our outgoing officers, and we're primed for a fun and exciting year to come! There's a lot of work to be done, so to all our board members, officers, and volunteers: Enjoy the holidays and come back ready to get after it!

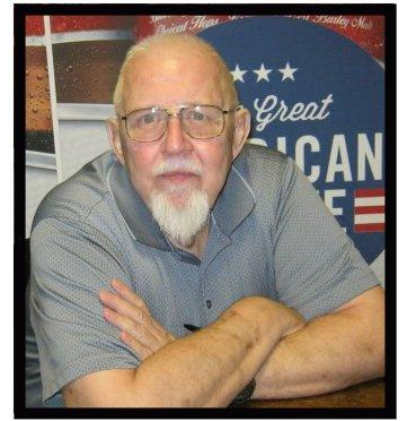




## Errol Jordan, KC8RJR - SK



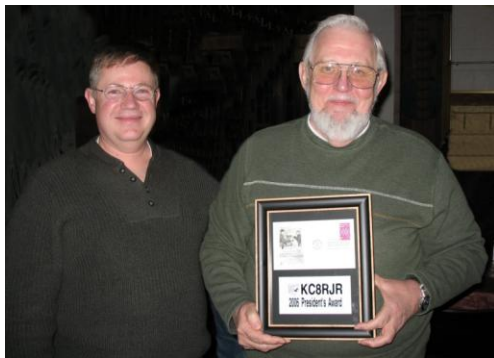
PCARS member Errol Jordan, KC8RJR passed away on November 6<sup>th</sup>. Errol was charter member #13 in PCARS and present at just about every club function. His smile and sense of humor will be missed by many of us in PCARS. Errol was the recipient of the first PCARS "President's Award" in December of 2006. The following was published in the Canton Repository on November 7<sup>th</sup>:



Errol L. Jordan –78, of North Canton, passed away Wednesday, November 6, 2019 in his home following a period of declining health. Born in Coal Run, Ohio, he was the son of the late Otis and Dorothy (Chester) Jordan. He was a Veteran having served in the United States Army; and had retired from the former Hoover Company in North Canton, where he had lived most of his life. He is survived by his former wife, Joanne Williman, who continued to care for him through his illness; two sisters, four nephews and one niece. In keeping with his wishes, he is to be cremated through the care of Geib's Tuscarawas Valley Crematory at Dover, Ohio and private family services will be held in Canada at a later date.



### From the Feb 2007 PCARS newsletter: **2006 President's Award - KC8RJR**



As president of PCARS, I decided that it was within my authority to honor a member of PCARS and decided to do so in the form of an annual "President's Award". This will be an annual award, given to a PCARS member (other than an officer), solely at the discretion of the President based on whatever criteria the President for that year chooses. PCARS is fortunate to have a dedicated and talented group of officers. That, in and of itself, does not make a club great. It doesn't even guarantee that the club will be a good one. A club is a Members organization, and it's the Members who



make it or break it. PCARS has flourished this past year because of the participation of the membership. When I thought of all the meetings, activities and nets we've done in the past year, I realized that we've done an awful lot in our first year. It would be hard to expect that any one member would have participated in everything. Yet, Errol, KC8RJR, was there for just about everything. Add to that, he probably drives farther than anyone to participate, I'm impressed. Add to that, he has contributed to any activity where help was needed (them field day steaks was good!). Add to that, Errol is really a great guy to get to know! It was my pleasure to present Errol Jordan, KC8RJR, with the 2006 PCARS President's Award, and all the rights and privileges that go along with it.



# Schedule of Events



On the calendar for upcoming meetings and activities are:

- December 2<sup>nd</sup> - Board Meeting at the club site - starts at 7 pm
- December 7<sup>th</sup> - VE Testing at the club site - 10 AM
- December 9<sup>th</sup> - PCARS Christmas Social Meeting at The American Legion, Kent
- January 6<sup>th</sup> - Board Meeting at the club site - starts at 7 pm
- January 13<sup>th</sup> - PCARS Meeting at the Kent American Legion - 7 pm  
Skype with the Radio Society of Great Britain from Bletchley Park
- February 3<sup>rd</sup> - Board Meeting at the club site - starts at 7 pm  
McMath Hulbert Observatory - Amateur Radio Astronomy
- February 8<sup>th</sup> - FYAO at Fred Fuller Park in Kent
- February 10<sup>th</sup> - PCARS Meeting at the Kent American Legion - 7 pm
- March 2<sup>nd</sup> - Board Meeting at the club site - starts at 7 pm
- March 9<sup>th</sup> - PCARS Meeting at the Kent American Legion - 7 pm  
Skype with HamSCI Founder Dr. Nathaniel A. Frissell, Hamvention®  
2019 "Amateur of the Year"

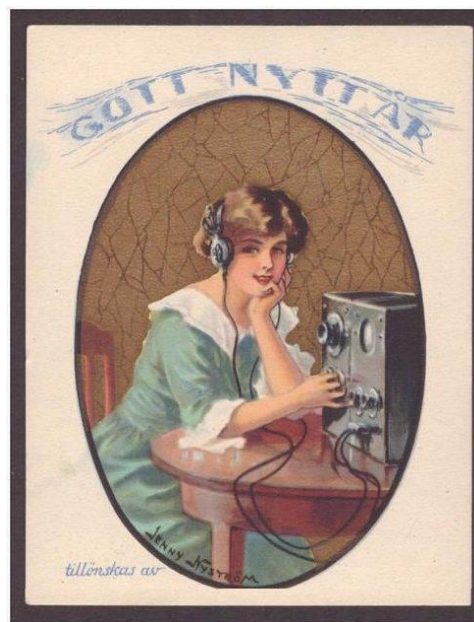
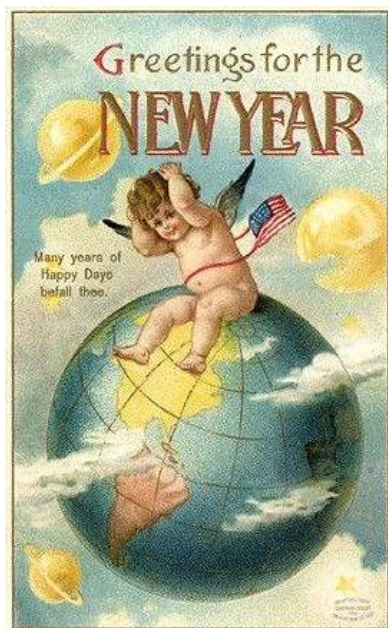


## Special Interest Groups (SIGs) - Every Month at the Club Site in Ravenna - 7:00 pm

- |                |   |  |
|----------------|---|--|
| First Tuesday  | - | <b>Digital</b> - Moderator: Rick, K8CAV          |
| Second Tuesday | - | <b>QRP/CW</b> - Moderator: Terry, KB8AMZ         |
| Third Tuesday  | - | <b>Antenna</b> - Moderator: Tony, WA8AR          |
| Fourth Tuesday | - | <b>DX &amp; Contest</b> - Moderator: Chuck, W8PT |
| Fifth Tuesday  | - | <b>Linux for Hams</b> - Moderator: Terry, KB8AMZ |



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





## PCARS Christmas Party Dinner Meeting



The PCARS December meeting will be held at the American Legion Hall on Monday, December 9<sup>th</sup>, 2018. The meeting will start at 7:00 PM - *sharp*.

This is our annual Christmas Dinner meeting, open to all PCARS members *and their families*.

The dinner will be catered by our friend Bert

from the Little City Grill of Kent. The cost will be the same as last year, \$19 per plate. (If you pay vial the PAYPAL button the cost will be \$20 to cover the PAYPAL fees.) The entrees for this year's dinner will be



your choice between Hawaiian Chicken, served with rice or a Strip Steak served with baked potato. (All strip steaks will be prepared on the rare side of medium.) All dinners will include green beans, a salad, and roll and butter. Chips and salsa will be available as an appetizer. Jim, AC8NT has told me there will be a cake for dessert! Coffee and water will be available with the dinner, all other beverages will be available from the American Legion Canteen. Don't forget, the dinner will be served at 7:00PM *sharp*. After the dinner, there will be a short PCARS meeting along with our PCARS Gift Exchange.

You can mail your reservation directly to:

Thomas Sly – WB8LCD  
1480 Lake Martin Dr.  
Kent, OH 44240



Along with your check payable to "PCARS", or, you can always give your reservation directly to me, be sure to indicate your choice of meal(s) and the names of all those you are making reservations for. There will be a PAYPAL button on the club website shortly. <<<< **RESERVATION DEADLINE IS 12/02 !!!!** >>>>

After dinner we will have the PCARS gift exchange! Please bring a ten-dollar gift and mark it for a HAM or a NON-HAM. (Non-ham gifts should be gender neutral.) If you are bringing children, please bring a special gift for your own children, and mark the child's name on the gift so we can make sure it gets to him or her.

There will be a table with two baskets, one labeled "HAM" and the other labeled "NON-HAM" with slips of paper in the front of them. Put your gift on the table, pick up a slip of paper, write your callsign and deposit in the "HAM" basket *if you brought a ham gift*, or, write your name on it and deposit it in the "NON-HAM" basket *if you brought a non-ham gift*. PLEASE: do not deposit a slip if you did not bring a gift for the EXCHANGE!



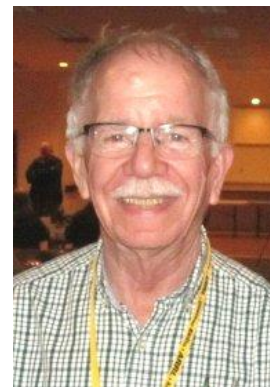
**Mark Your Calendars!**



## ARRL Knight Distinguished Service Award

**Dale, WA8EFK**

**ARRL Great Lakes Division Director**



### **ARRL bestows honor to Great Lakes Division ham.**

Each year, the ARRL offers an award to recognize someone who has served admirably as an ARRL Section Manager.

The Knight Distinguished Service Award recognizes exceptionally notable contributions by a Section Manager to the health and vitality of the League. The first such award was presented to Joe T. Knight, W5PDY (now SK) in 2003 -- for whom the award was named -- in recognition of his exemplary service not only as the ARRL Section New Mexico Section Manager for more than a quarter century, but also for his willingness to share his knowledge and skills.

The Knight Distinguished Service Award may be awarded to an ARRL Section Manager who has distinguished himself or herself in accordance with the following ideals:

- Exceptionally notable contributions over an extended period of time within his or her Section and beyond.
- Demonstrated efforts that have contributed to the health and vitality of the ARRL and its Field Organization.
- Displayed actions that are in the spirit of the unselfish contributions of Joe T. Knight, W5PDY.

Nominations may be made by any ARRL member and accompanied by a narrative of the accomplishments of the nominee identifying the long term contributions of the nominee to ARRL and its Field Organization. The nominations are reviewed by the ARRL Programs and Service Committee, which makes the formal recommendation to the ARRL Board of Directors.

With that background, I am truly pleased to announce to all, at its July meeting, the ARRL Board of Directors honored Ohio Section Manager Scott Yonally N8SY with the Knight Distinguished Service Award. Scott easily met all of the required criteria and most certainly has shown exemplary service to the members of the ARRL Ohio Section, Great Lakes Division and the entire ARRL Field Organization.

Please join Vice Director Tom Delaney W8WTD and me in congratulating Scott on this very special occasion.

**The award was presented to Ohio Section Manager, Scott, N8SY at the November PCARS meeting.**



**Tom, W8WTD**

**Scott, N8SY**

**Dale, WA8EFK**



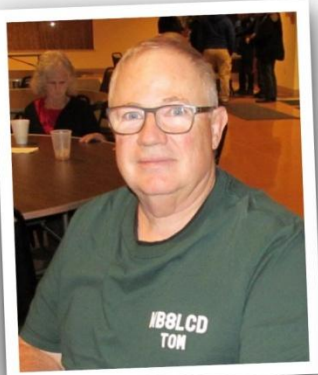


## ***Congratulations to the PCARS 2020 Officers***

The annual election of officers for PCARS was held at the November meeting. All of the candidates ran unopposed and will take over as our elected officials on January 1, 2020. Tom, WB8LCD was elected President. Nick, AC8QG was re-elected as Vice President and Paul, KE8EGF was re-elected as Treasurer. Jim AC8NT is now the Immediate Past President. John, KD8MQ was elected 3-Year Trustee, Terry, KB8AMZ goes to 2 -Year Trustee and Ed, K8IV goes to 1-year Trustee. These officers are also the Board of Directors for PCARS.

**CONGRATULATIONS**

# **PCARS 2020 Elected Officers and Board Members**



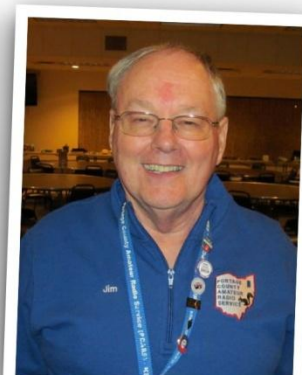
**President  
Tom, WB8LCD**



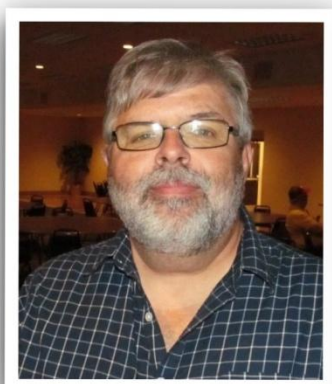
**Vice President  
Nick, AC8QG**



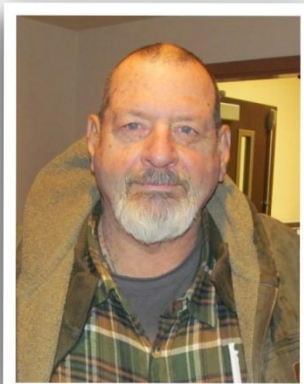
**Treasurer  
Paul, KE8EGF**



**Past President  
Jim, AC8NT**



**3-Year Trustee  
John, KD8MQ**



**2-Year Trustee  
Terry, KB8AMZ**



**1-Year Trustee  
Ed, K8IV**



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



## Fox Hunting

*Jim, AC8NT*



Fox hunting is a great part of the ham radio hobby. It is a lot of fun and can be done even if you are not yet licensed. It teaches antenna basics, operation of a handheld and even orienteering. At our club PCARS (Portage County Amateur Radio Service) we have broken down Fox Hunting into three types of events.

First we have an event to build a tape measure antenna that will be used in fox hunts. This event usually requires about 3 hours to complete and is great for a Saturday morning. Both adults and kids love a good hands-on event where something can be built and used. We have also include an attenuator unit in the build that makes the antenna more useful when you get close to the fox in the hunt. We also cover basic antenna theory as part of the event.

Next we train the hunters in how to use the Yagi antenna, attenuator, and a two meter handheld to point in the direction of the fox. This is not as simple as it sounds. They learn that many factors affect the direction to the fox including reflections of the signals from water towers, building and other structures. You can get a lot of exercise finding a good bearing to the fox.

Last is an actual hunt. Here one or more foxes are hid in trees and other structures that must be found in a given order. We use foxes that all transmit on the same frequency but send out different Morse Code identifiers. We give the ID of the first fox which when found has the ID of fox two and so forth. Each fox also has a written message that must be copied to prove it has been found. The first team to find all the foxes in the correct order wins. Even if you use only one fox, you can have a lot of fun with one of these events. At our last Field Day several kids spent hours running around the park finding a fox.

You can also step up to long distance fox hunts. Here an operator goes to a location and starts broadcasting the fox message, usually every couple of minutes. The hunters start from another location and as with all of these hunts tries to find the fox. Some sophisticated doppler equipment is usually used to locate the fox. It has a display that is supposed to point to the fox. Even with this equipment it takes some experience, skill and a little luck to find the fox. To give some idea of scale, the fox can often be many miles away from the hunt starting point and require some serious time to find.

Still, it is great fun.



Here are some hints that I have learned from my experiences.

- Remember that building the antenna is a great start. It cuts the cost of entry and it gives the builders a great sense of accomplishment. The leader of the build should be ready to answer questions and tune the finished products.
- We usually use Boefeng handhelds. If you are allowing unlicensed participants, these can be easily modified to only receive. These modifications can be reversed when the operator gets his ticket.
- Start with simple hunts. Use a single fox and pick a park where you can plant the fox on one of the trails. You don't want anyone to get hurt or lost.

Fox hunting builds interest in hams-to-be and shows hams are also makers. It is great fun for kids of all ages.





## PCARS Custom Coffee Cups - Limited Edition- Going Fast

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

**Supply is limited.** If you are a current (PAID) member of PCARS you get one coffee cup for **FREE** !! The only catch is you have to claim it in person from the **Treasurer - Paul, KE8EGF**.

Paul has a list of current members and will check off your name when you get your **FREE** PCARS coffee cup.

There are a limited number of extra coffee cups and they are for sale at \$5.00 each - **Again, see Paul for all of the details.**



### Portage County Amateur Radio Service



# K8BF

### 2018 Hamvention® Club of the Year



## Happy Birthday PCARS Members

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

KA8TOA	Greg	Ash
N8XTH	Deron	Boring
KD8RUQ	Mike	Collins
WA8GCF	Dave	DeSimio
KD8ICP	Tim	Gehri
KD8GYI	Pete	Hardin
KE8LWM	Holly	Knox

	Ellen	Kurta
KD8SKL	Amy	Leggiero
KB8AMZ	Terry	Morris
K8IV	Ed	Polack
KD8LLN	Mike	Polack
KB8UHN	John	Tomasik



# PCARS K8BF

The Club that puts the FUN in Ham Radio!



## 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.

**December 7<sup>th</sup> (10 am)**

**2020: Feb 1<sup>st</sup>, Mar 25<sup>th</sup> at 7 pm, Apr 4<sup>th</sup>, Jun 6<sup>th</sup>, Aug 1<sup>st</sup>, Oct 3<sup>rd</sup>, Dec 5<sup>th</sup>**

### 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 your 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.
- 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](mailto:KB8UUZ@gmail.com)



## PCARS Patches & Stickers



PCARS logo patches (**iron on**) & stickers (stick on) are now available!!

Put the patch on your hat, your shirt, your jacket and show off that PCARS logo!! The patch is about 3".

The embroidery on the white patch is in Red, Black and Blue. Cost for a patch is only \$2.00 each and can be obtained



at any PCARS meeting. There are 2 types of stickers available - a 4" x 6" oval and a 3" x 10" bumper sticker. Stickers are \$1 each. Show your pride in PCARS - Wear a patch, use the stickers! See the club Treasurer: **Paul, KE8EGF** or e-mail him at: [phyland@neo.rr.com](mailto:phyland@neo.rr.com)



## Hamfest Calendar

### 01/26/2020 - Tusco Amateur Radio Club's 30th Annual Hamfest, Electronics and Computer Show

Location: 965 N. Wooster Ave., Strasburg, OH - Sponsor: Tusco Amateur Radio Club - Contact: Janice Green, KD8YDK - Phone 330-340-4424, e-mail: [k8wfn@tusco.net](mailto:k8wfn@tusco.net) - Website: <http://www.tuscoarc.org>

### 02/16/2020 - Mansfield Mid-Winter Hamfest - Location: Mansfield , OH - Sponsor: Intercity Amateur Radio Club - Website: <http://WWW.IARC.CLUB>

### 03/14 &15/2020 - Toledo Hamfest, **ARRL Great Lakes Division Convention** - Location: Owens Community College - 30335 Oregon Road - Perrysburg, OH 43551 - Website: <http://www.tmrhamradio.org> - Contact: Rob Hall, KV8P - 8751 Oak Valley Road Holland, OH 43528 - Phone: 419-345-5759 - Email: [kv8p@kv8p.com](mailto:kv8p@kv8p.com)

College - 30335 Oregon Road - Perrysburg, OH 43551 - Website: <http://www.tmrhamradio.org> - Contact: Rob Hall, KV8P - 8751 Oak Valley Road Holland, OH 43528 - Phone: 419-345-5759 - Email: [kv8p@kv8p.com](mailto:kv8p@kv8p.com)

### 08/08/2020 - DX Engineering Hamfest, **ARRL Ohio Section Convention** - Location: **DX** Engineering / Summit Racing - 1200 Southeast Ave. - Tallmadge, OH - More details to follow !!

## Contest Calendar

December Contest Calendar	
Contest Name	Times
ARRL 160-Meter Contest	2200Z, Dec 6 to 1600Z, Dec 8
ARRL 10-Meter Contest	0000Z, Dec 14 to 2400Z, Dec 15
ARRL Rookie Roundup, CW	1800Z-2359Z, Dec 22
RAC Winter Contest	0000Z-2359Z, Dec 28
Stew Perry Topband Challenge	1500Z, Dec 28 to 1500Z, Dec 29

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

Contests that will be active at the PCARS Club Site in 2020	
Date	Contest
Jan 25-26	BARTG RTTY Sprint (This is our RTTY Training run)
Feb 29 - Mar 1	North American QSO Party-RTTY (Reason for the training)
Mar 14-16	Idaho and Wisconsin QSO Parties
Apr 25-26	Florida QSO Party
May 2-3	New England QSO Party
Jun 13-15	ARRL June VHF Contest
Jul 18-19	North American QSO Party-RTTY
Aug 22-23	Ohio QSO Party & BB-QSO Party
Sept 19-20	Washington State Salmon Run
Oct 3-4	California QSO Party
Oct 10-12	Pennsylvania QSO Party
Oct 17-19	New York & Illinois QSO Parties



# PCARS K8BF

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





## College Club Visit - Case Western Reserve ARC

*Jim, AC8NT*



Over the next few months I plan to visit a few college ham clubs and see how they are doing, what their needs are and learn their best practices. A lot of college clubs exist, but we need more. We need to be there for them if we can help. My first visit was to the Case club W8EDU.



I met with the current club president, a junior electrical engineering student, Aidan Montare, KB3UMD in their shack located on the roof of the Glennan building. To get to the shack you take the elevator to the 8th floor and then walk up steps to the roof, across the roof and into the shack. No one seems to know why this pill box was put on the roof, but some guess it was going to be used for astronomy but it is an outstanding shack location. All their antennas are at least 9 stories above ground and some are on towers above that. The shack has modern rigs and a couple of repeaters. The club was started at Case Institute of Technology in the 1940s with the original call W8URD. Its starting location was at the Case Club on Euclid Ave. In the 1960s the call was changed to W8EDU and in the 1970s it moved to its current location.

The club has about 60 members and a faculty advisor David Kazdan, Adjunct Assistant Professor in the Department of Electrical, Computer, and Systems Engineering. It does not hold formal meetings. They basically meet as necessary for operations and the shack is open every Thursday from 7PM to 9PM. Guests are welcome if you let them know in advance. Since the building is usually locked at night except for faculty and students, visitors need to be met at the lobby door to gain entrance.

The night I visited club members were meeting with members of the Case rocket team to assist with flight communications. It was nice to see the hams working with other student groups and sharing expertise. The club does take part in ham events including Sweeps, which it has one in the Great Lakes Division Student Category; takes part in Field Day which it holds at Case Farms; and is an active participant in the ARRL Collegiate Amateur Radio Initiative working with other clubs to support their efforts.

Aidan described one of the inter college projects. It was the establishment of a WSPR propagation network. They have a WSPR station on 10 meters along with several other colleges. They are looking at ways to use the data that is being collected. They have also let other colleges and universities know that the Case club is there to help them with projects and club growth. Networking is a very good way for college clubs to leverage resources and project funding.

When we discussed club growth, he said a few years ago the club went dormant and alumni helped it stay in operation for a while. It is critical that college clubs have good alumni organizations to support the continuation of the club during "dry spells". Clubs that don't have this support find continuity very difficult. Alumni are often more important to continuity than any direct university support. If the club is just starting, there must be a support group of Elmers to help it get started and support the clubs operations. Case has a great alumni support group.

I talked about PCARS and some of our events. I explained that we were using some of Britain's practical training in our Tech classes to get more new hams on the air. Aidan said thought that might be something for Case to consider. I showed them our website and we talked about their participation in OSPOTA. The timing of OSPOTA works well with their college calendar and he thought they would give it a try in 2020. I also invited them to FYAO in February.

I would like to thank David, Aidan and the entire W8EDU club for their hospitality. If you would like to learn more about W8EDU, please visit their website at <https://w8edu.wordpress.com>.

I am looking forward to visiting more college clubs after the holiday break.





## Low Power & Portable Operation

Tom, WB8LCD



WB8LCD's complete QRP station loaded in car ready to go

One of the things that I think separates Ham Radio from many of the other hobbies or activities that you *could* choose to participate in, is that Ham Radio has so many different areas and activities where you can participate, depending on your interests, ability, time and funding capability. Ham Radio is a lot of different hobbies all within the hobby. Two people could both be rabid Ham Radio Operators, both at the very top of their area of interest, but never run into each other because one is chasing DX and the other is chasing Satellite Q's. *Viva la difference!*

It's not necessary to "pick one". You can have varied interests and participate in any or all of them. Through the years (I've been licensed since 1967 – that's a lot of years!) I've played in many different areas of the hobby. Every one of them has been an interesting learning experience. I've had a chance to meet a lot of fascinating people who all do some pretty amazing things with Ham Radio. I've said it before, and I'll say it again: I've heard people claim that they've had "50 years of experience" with Ham Radio. For some of them, that's true. For others, all they've really had is one year of Ham Radio experience, repeated 50 times! Huge difference between the two of them. Don't be one of those guys! It's never too late to learn something new and to improve your abilities in those areas of the hobby you already know and love.



Operating portable from Chimney Rock State Park in NC

One of those areas of the hobby that has always interested me is QRP. One of the best advocates of QRP was Rev. George Dobbs, G3RJV (SK). The following link will take you to about a 45-minute presentation he gave which will benefit everyone who takes the time to listen to it. In fact, I'm making it mandatory for all PCARS members – and there will be a test!  
<https://youtu.be/bzSjoZoj1Is> You won't be disappointed. I'll be the first to admit, operating a KILLER station, where all you have to do is turn it on and point, has certain advantages. But, successfully working QRP takes a different skill set that will make you more effective no matter what your power level.

If you like "home-brewing" radio equipment, QRP is the place for you! There are more kits available in the low power world than anywhere else. Experimenting with discrete circuits and components is easy and fun to do. Have you ever heard of building circuit boards "Manhattan" style? Check it out. How about radio gear which uses an Altoids tin as a case? If you like operating on the trail, picnic table or just about anywhere on an "ad hoc" basis, having a QRP rig handy is always a possibility. I'm not going to make a list here, but there are a whole bunch of QRP clubs you can belong to. And that brings me to the whole point of all of this. You're already a member of PCARS (if not I invite you to join) and on the second Tuesday of each month, usually the day right after the PCARS general meeting, Terry, KB8AMZ – hosts the CW/QRP Special Interest Group (SIG) at the PCARS World Headquarters on Oakwood St. in Ravenna. This is a time for you to come out and meet with other like-minded hams to discuss and experience what QRP is really all about. Bring your QRP rig and put it on the air with the club's antennas. Learn Morse Code and operate CW. Bring your friends!

Oh yeah, don't forget about our annual QRP field event – **FREEZE YOUR ACORNS OFF** – coming up on Saturday February 8<sup>th</sup>.



2008 QRPARC Fireside - One of my favorite contests that used to always be run on Super Bowl Sunday.



KC8PD's "portable" station ready to load into the car



## Swap-N-Shop

**For Sale: ICOM IC-7000 Transceiver**, good condition, includes the following: HM-151 Hand Mic, Power Cable with Anderson Power Pole connectors, Heil Icom Pro Headset Adapter, USB CAT Control Cable, RTS Programming Software with USB Cable, MD-62 mounting bracket and hardware, MB-105 separation bracket, OPC-1443 separation cable, Original factory manual, Printed 4-1/4" x 5-1/2" manual (two), Nifty Mini-manual, MARS out of band transmit mod. \$700.00.

**Contact: Rick, K8CAV** at [k8cav.coms@gmail.com](mailto:k8cav.coms@gmail.com) or call 330-620-8826 [02/02/20]

**For Sale: Elecraft K2 s/n 5035 - KPA 100 Amplifier - KNB2 Noise Blanker - K160RX 160 meter module - KAF2 Audio filter and Real-Time Clock - KI02 RS-232 Interface and Aux I/O - K60XV and Transverter Adapter - KSB2 SSB Option - \$800**

**Contact: Bob, WB8OVQ** at 330-802-9562 [02/02/20]

**For Sale: 30' Aluminum Free-standing Tilt-Over Tower - \$200.00 - Full specs can be found at**

[https://docs.wixstatic.com/ugd/376c20\\_8bc492f5edcc4ffe8e6fcb94e3aca7a.pdf](https://docs.wixstatic.com/ugd/376c20_8bc492f5edcc4ffe8e6fcb94e3aca7a.pdf)

**Contact: John, KD8MQ** at 330-936-5021, or [kd8mq1@gmail.com](mailto:kd8mq1@gmail.com) [02/02/20]

**For Sale: Alpha 77DX** with all of the Dick Byrd upgrades. These upgrades include the following; higher voltage plate transformer providing 4300 Volts idle, 7500 Volt rectifiers, 5000 Volt 35 µf filter capacitor, wide spaced loading capacitors like are used in the 77SX, all new step start components, large 10x38mm fuse holders, all new electrolytic capacitors on timer & QSK boards as well as LED lighting for the meters. This amplifier has ZERO HOURS since being upgraded as it was my back-up amplifier. \$5000.00

**ALPHA 77SX/DX factory Peter W. Dahl transformer \$550.00** **YAESU FT-857D** radio is basically a new in box radio that was removed from the box to allow for the installation of the 2.3 KHz Collins SSB filter and the TCXO which allows for 0.5 ppm frequency accuracy. I also performed the MARS modification which allows for 1.8-30.0 MHz transmit. After the accessories were installed a MH-59A8J remote control microphone was connected to the radio to test operation and confirm the MARS modification was working as expected. The radio was programmed with the various frequencies I planned to use. Then the radio was returned to the original box. Since I had another FT-857 at the time I did not even touch the power cord. I will sell this radio along with the listed installed accessories and remote control microphone. Also included are the following; ATAS-120A auto tuning mobile antenna with a large 3 magnet MFJ mobile antenna mount, ADMS programming software & cable, Nifty Guide quick reference guide and custom printed spiral bound manual with plastic covers. About \$1500.00 invested selling for \$1100.00 cash only, No Trades. **Kenwood 4 PIN fused DC Power Cord \$15 ICOM 6 PIN fused DC Power Cord NEW \$20.00**

**Contact: James - KD8VT** - Call or Text to (330)-206-4909 [03/02/20]

**For Sale: Heil HM-10 XD Microphone.** \$139 new - will sell for \$110. Taken out of box, but never used

**Contact: Deron, N8XTH** - 330-715-8552 or email [deronmb@gmail.com](mailto:deronmb@gmail.com) [12/02/19]

**For Sale: Yaesu FT-890 Transceiver, Yaesu YD-148 mic and Pyramid Power Supply** – I think I paid \$700 - make me an offer. **Complete station - Heath SB-1400 Transceiver, Heath SBA-1400-4 Power Supply, Sure 444D Mic, MFJ Deluxe Versa Tuner II** – I paid \$400 – make me an offer. **A whole lot of other stuff to whoever wants it.** Downsizing to move to an Assisted Living with no ham access, so I need to sell or giveaway the above items - **MAKE ME AN OFFER !**

**Contact: Rod, N4PKW** - [rodandmary10@gmail.com](mailto:rodandmary10@gmail.com) [03/02/20]

**For Sale: Hustler 4-BTV** with the SO-239 adapter. I can help install it for you in Portage County and the surrounding area. \$75.

**WANTED: Hustler resonators.** Any band, any condition. Also, working hamsticks except 75m and 40m.

**Contact: Gene, W8NET** - 330-619-9194 or [w8net@me.com](mailto:w8net@me.com) [12/02/19]

**FOR SALE: ICOM IC-7610** - Brand New, *still in the box*. Decided to upgrade antennas instead of radio. Un-opened box \$2599.

**RC-28 - Remote Encoder** for the IC-7610 to easily operate the second VFO - Brand new - **\$200.** **8 Switch Memory External Keypad for the IC-7610/7850/7851.** Instant access to the 8 stored outgoing messages. Made in Germany by DM2RM. Brand new - \$60. **Cushcraft Ten-3** Three element **10 meter beam.** Cost new \$299.95 - **Sell for \$150.00.** This beam helped me make 7,651 ten meter contacts on a tripod on my roof. Great shape & ready to use. Had the roof replaced and took down the antennas. Will be putting up tower and Opti-Beam antennas - if the ground ever dries out..... well, maybe next Spring.....

**Contact: Tom "Parky", KB8UUZ** - [kb8uuz@gmail.com](mailto:kb8uuz@gmail.com) [02/02/20]

For Sale or Want Ad policy reminder: This is a PCARS *members only* benefit. Please don't ask to list items for a friend, relative or SK estate unless they are/were a member of PCARS. Requests come in from all over the USA (and beyond) to list items for sale or wanted items and we just cannot dedicate that much space to non-members. Listings are good for 3 months unless canceled or changed earlier. The date listed after the contact information tells you when the ad expires - example: [02/02/20] indicates the ad will run until Feb 2, 2020.





## Don't Miss SKYWARN Recognition Day - December 7<sup>th</sup>



SKYWARN Recognition Day ([SRD](#)) will mark its 20th anniversary on December 7, 0000 to 2400 UTC. ARES, SKYWARN and other amateurs will operate from National Weather Service (NWS) forecast offices across the country in a nod to the long relationship between the Amateur Radio community and the NWS SKYWARN program. Developed by NWS and ARRL staff in 1999, SRD is cosponsored by the organizations.

Participants exchange contact information with as many NWS stations as possible on 80, 40, 20, 15, 10, 6, and 2 meters, plus 70 centimeters. Contacts via repeaters are permitted. Stations should exchange call signs, signal reports, and locations, plus a quick description of the weather at your location (e.g., sunny, partly cloudy, windy, rainy, etc.). EchoLink and IRLP nodes, including Voice over Internet Protocol Weather Net ([VoIP-WX](#)), are expected to be active as well.

[WX4NHC](#) at the National Hurricane Center will also be on the air for SRD, 1300 - 1700 UTC. Event certificates are electronic and printable from the main website at the conclusion of SRD. Please see the [SKYWARN Recognition Day website](#).

- [Don't Miss It: SKYWARN Recognition Day December 7](#)
- [Southern California Hams Support Major Terrorist Attacks Response Drill](#)
- [Southern California County RACES Group Supports Hurricane Exercise in the Desert](#)
- [Arizona Club Takes Advantage of Low Bands to Support 100-Mile Endurance Run](#)
- [Inter-Sectional Cooperation for Atlanta Red Cross, ARES Drill](#)
- [Family Reunification - A New Frontier](#)
- [Correction, and New Alert System Employed in Northern California](#)
- [34th Year of Ham Radio Support for the Multiple Sclerosis 150-mile "Dat's How We Roll" Bike Tour in Gulf States](#)
- [Florida and Georgia Operators Support Rural Bike Ride Across State Border](#)
- [Major Station Burglary Demonstrates Need for Building, Radio Room Security](#)
- [History of Amateur Emergency Communications - Part Three](#)
- [ARES Resources](#)
- [ARRL Resources](#)



## From the Ohio Section Manager



Hey Gang...

**Scott, N8SY**  
ARRL Ohio Section Manager



Wow.. what a mixed-up week this was for sure. It seems that the weather just couldn't make up its mind if it wanted to be fall or winter.

I had a blast at the Grant and Massillon Hamfests visiting with all of you. I even got in a few days of riding my trike this week. It's really fun now that I have a bike that actually fits me. The motorcycle accident had a bigger impact on my legs than I wanted to let myself believe, so trying to ride a regular 2-wheeled bike is not an option for me anymore. But now with this new recumbent bike I can just sit down and start peddling, it's really great. Did you know that you can get those crazy 3 wheeled critters up over 40 miles an hour without even really breaking a sweat? It's amazing. I haven't got the DMR radio mounted on it yet, but that's coming. I do have to get a rack mounted on the back to fit the radio on and get an antenna mounted, but other than that, I'm ready. Oh yes, I do plan on being tricycle mobile for sure!!

Sliding down the band a bit... We've had quite a few advancements with ARES Connect recently. These advancements are to help you the user and Admin get the events entered and hours registered better. Our goal is to get everyone in the Ohio Section registered and using this new system by the end of the year! We want no one left behind.

Oh, there's another feature that I want to tell you about. If you've registered for an event and you forget to log your hours for that event after 24 hours, the system can, and if setup correctly, will send you an email thanking you for your participation. But, here's what I want you to really pay particular attention to.. there will also be a link in that email that if you click on it will take you directly to the area to get your hours logged!! Wow.. this is a real bonus, as that even if you forget to log your hours the system will remind you and even make it convenient for you to log them.

Sliding down the band a bit more... Have you gotten on the air lately? With winter here now, there's really no excuse for not getting on the air. I am still hearing from some of you that you just haven't taken the time yet to do anything with that newly acquired license. Why not? Do you need help? Hey, my best advice for you is to seek out a club and go and listen. You'll be amazed at how much knowledge is floating around that is just looking for a place to land. You got it, ON YOU!. Have fun with it! Get on the Air!!!

Whelp... That's going to do it for this time around. Stay safe, enjoy the sunshine while we have it, and most of all... have FUN!!



*In 2004, much to his amusement,  
Bill Leverette discovered  
that sending CQ in Morse code  
caused his neighbor's  
Christmas lights  
to blink in rhythm with  
"Hark! The Herald Angels Sing!"*

HamHijinks.com

#HamHijinksFacts

*Willard Burton's Christmas tree  
burst into flames in 1982, when his  
string of lights conducted most of  
the 1,000 watts coming from  
his attic dipole.*

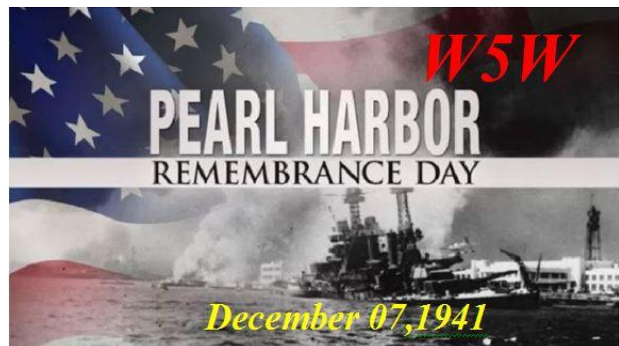
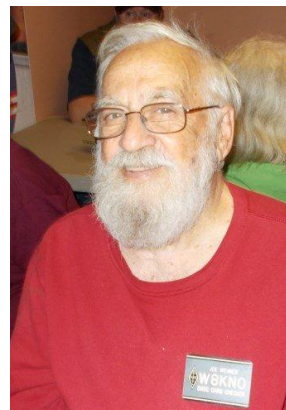
HamHijinks.com

#HamHijinksFacts



## Paper Chase - Pearl Harbor

**Joe, W8KNO**



I would like to focus on Pearl Harbor. I first visited there in November 1956 aboard the USS Toledo (CA-133). From the bow, you could look down upon the Arizona. It had had its superstructure and turrets, to below the roller ring, removed. To our stern, a capsized ship remained next to the pier. I was deeply impressed.

The Navy had placed the first permanent memorial, a 10-foot tall basalt stone and plaque, over the mid-ship deckhouse on December 7, 1955. I do not recall seeing it. President Dwight D. Eisenhower approved the creation of a National Memorial in 1958. Enabling legislation required the memorial, budgeted at \$500,000, be privately financed; however, \$200,000 of the memorial cost was government subsidized.

Principal contributions to the memorial included:

- \$50,000 by the Territory of Hawaii in 1958

- \$95,000 privately raised following a 1958 "This Is Your Life" television segment featuring Rear Admiral (ret.) Samuel G. Fuqua, Medal of Honor recipient and the senior surviving officer from the USS Arizona

- \$64,000 from a March 25, 1961 benefit concert by Elvis Presley

- \$40,000 from the sale of plastic models of the Arizona, in a partnership between the Fleet Reserve Association and the Revell Model Company

- \$150,000 from federal funds in legislation initiated by Hawaii Senator Daniel Inouye in 1961.

Construction of the Memorial commenced in 1962.

Upon leaving the Navy in 1971, I traveled to Hawaii and visited the Memorial. I thought nothing more about it until when traveling to Metropolis, Illinois for a reunion of the USS Hammerberg (DE-1015) I got lost. I stopped to get directions and while talking to the home owner telling her why I was there, she told me to stay, I had to met her gardener. "This is the rest of the story" He was a new seaman aboard the Arizona and was on his way from the shower to his bunking area when the attack occurred. When a bomb struck the ship, he was blown out of the ship and suffered a concussion. He was without his memory for two months after which he could tell officials who he was. It turned out that during that two month period, the Navy had notified his parents he had been killed in the attack and the parents had conducted a memorial service for him.



There will be many stations and ships on the air remembering the attack. One of them will be Club KC5NX, I choose this one because it should be heard in Ohio. For a QSL Card, send your QSL and SASE to:

Club KC5N

9200 Summit Court West

Cleburne, TX 76033-8212

Between December 5th and December 10th, listen all day for them as W5W, on 14.225 14.045 7.225 or 7.045.



## 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 - 4<sup>th</sup> Thursday is NET NIGHT at the Club Site !!**

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

December	
5	KA8TOA
12	AC8NT
19	WB8LCD
26	KA8TOA

January	
2	K8IV
9	K8YLK
16	KE8BWA
23	KA8TOA
30	AC8NT

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

If you have not been a Net Control Operator for PCARS and would like to give it a try, please contact me at: [grgory999@roadrunner.com](mailto:grgory999@roadrunner.com) everyone who is a club member is welcome to have a turn - and have fun being the PCARS Thursday Night Net Control !



**And - don't forget** - when you check in to the PCARS net 10 consecutive weeks - you are eligible for a Certificate - suitable for framing. But you have to make it 10 week in a row. Miss one, and you start over again. When you get those 10 check ins, contact me so I can check the logs and get the certificate made up for you.

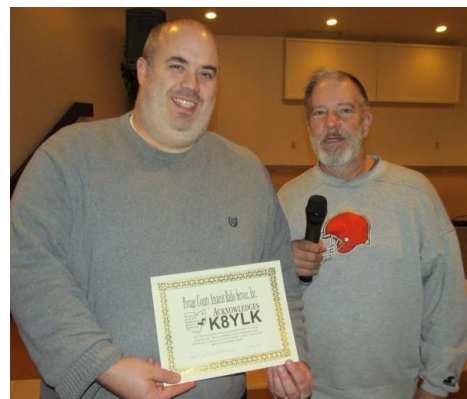
**At the last meeting Josh, K8YLK was presented with his 10 check in certificate.**

I would like to wish everyone Happy Holidays. A BIG THANKS for all those who participate in the nets whether it is checking into them or running the net.

I have a few stats that some of you might find interesting. For the months of Aug through Nov we had a total of 277 check ins, which averaged out to 20 check ins for the total weekly count for the period. For the 4 month average period, we had Aug 18; Sept 20; Oct 18 and Nov 22.

Overall I believe we do pretty good as a club. Let's keep it up. So again thanks to everyone who participates in club activities and helps run the club. We have some new leaders and new members and let's make next year better yet. We can do this by volunteering to pitch in, too ease some of the burden on everyone. Be safe enjoy your family your friends this holiday season and take a moment to remember those who have passed.

**Have a great New Year, 73 - Greg, KA8TOA**





## News from the Portage County Coms Unit

**Rick, K8CAV**  
Portage County Coms Unit



One Merriam-Webster definition of the word service is “an administrative division” and aptly applies to the title, “Amateur Radio Service” of Part 97 of the FCC rules and regulations. The FCC wastes no time in the very first section of Part 97 in using Merriam-Webster’s alternate definition of service as “contribution to the welfare of others”. Section 97.1 (a) Purpose and Basis states in full, “Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications”. Obviously there is more to the amateur radio service than just that statement, but it’s telling that service to the public is listed first.

As amateur radio operators, there are many ways we can be of service to the public. Some involve supporting public service events such as walkathons and other similar events. Others, such as ARES and RACES focus on emergency communications. In Portage County, amateur radio operators can become members of the Communications Unit of the Portage County Office of Homeland Security/Emergency Management, known in short as the Coms Unit. The Coms Unit is an official part of the Portage County EMA, sanctioned by both the Director of the EMA, and the Portage County Commissioners. The mission of the Coms Unit is to provide communications support to the EMA and to first responders during incidents and events. This support is provided using public safety communications equipment and infrastructure such as MARCS, and VHF narrow band, amongst others. When necessary the Coms Unit also uses amateur radio to augment public safety communications.

Structured training is an important part of the ability of the Coms Unit to accomplish its mission. All members of the Coms Unit are trained to operate within the Incident Command System. Bi-weekly training nets cover topics that are most easily presented in a lecture format. Monthly training meetings at the County Emergency Operations Center make use of presentation and hands-on training techniques. Field Training Exercises use numerous individual tasks to accomplish Unit level training and evaluation. When opportunities present themselves, the Coms Unit trains with other public safety organizations for larger scale training, such as the recent Guardian Shield exercise at Camp James A. Garfield. On-line and classroom training is available both through FEMA and the ARRL. A yearly Training Schedule is published and given to all members prior to the start of the new training year, with the emphasis on ensuring that training is pertinent to our mission, and that it makes productive use of the time volunteered by members.

There are a number of requirements for membership in the Coms Unit. Completion of the four base-line ICS courses as well as the ARRL Intro to EmComm course is required. Additional ICS classroom courses such as ICS-300 and ICS-400 are highly recommended, as well as others if opportunity to take them presents itself. Regular participation in Coms Unit training nets, meetings and field training exercises as well as incidents and events is required. All members are required to swear an oath upon approval of membership in the Coms Unit.

The Coms Unit is always looking for amateur radio operators interested in providing communications support for Portage County. It’s a great way to fulfill the expectations of the FCC in providing service to the public using our skills as communicators. If you think you might be interested in becoming a member of the Coms Unit, you are invited to attend one of our training meetings at the EOC, or check into one of our training nets as a guest. Send an e-mail to [k8cav.coms@gmail.com](mailto:k8cav.coms@gmail.com) if you would like more information.



## Think [Box] Tour

*Jim, AC8NT*

Have you ever wanted to do a project but just didn't have the skills or equipment to finish it? If you have you should consider taking advantage of a makerspace.

We visited the Case Western Reserve University Think[Box] for a tour with some of our PCARS members and their guests. Think[Box] is an amazing makerspace that is open to everyone. But as the members of our tour will tell you, you need to see it to believe it.



Services include a number of types of 3D printing, laser cutting and etching, material cutting using a water jet, woodworking including a 4 by 8 foot CNC ShopBot, metal machining, electronics assembly, most forms of welding and much more. The facility also provides all the necessary software to support all its equipment. Something just as important as equipment, the training necessary for its proper use is freely available. AND it is all FREE to anyone! Everyone in our tour, provided they complete training, can use any of these resources for only material costs. Remember the training is also free.

I have completed several of the training courses and can tell you it is just outstanding training. They also have support services. For example, if you are having trouble 3D printing a part, there are lots of students that will help you get your project completed. I have used help in machining and with the circuit board router and it has been a real asset. They really want you to have a successful project.



Quite a few of our tour expressed interest in using the facility and I am sure they will have a great time there. Visiting Think[Box] is a "must happen" in your plans. If more of you want to take a tour, let me know

([jawilson@j3solutions.com](mailto:jawilson@j3solutions.com)) and we will set it up.



More information on Think[Box] can be found at <https://engineering.case.edu/sears-thinkbox> .





## More than 1,000,000 Contacts During Field Day



*From the ARRL*

ARRL Contest Program Manager Paul Bourque, N1SFE, reports that nearly 1.1 million contacts were made during the 2019 ARRL Field Day -- the most popular operating event in North America. Bourque reported the 2019 ARRL Field Day results (<https://field-day.arrl.org/fdresults.php>), which are available starting on page 64 of the digital edition of the December 2019 issue of QST. Bourque says in his article that more than 36,000 radio amateurs took part in 2019 Field Day across all 83 ARRL/Radio Amateurs of Canada Sections, up slightly from the 35,250 reported last year. The total number of contacts was down by about 7% from 2018's 1.18 million contacts.

"This year, 3,113 entries were received from local clubs and emergency operations centers (EOCs), as well as individual portable, mobile, and home stations," Bourque wrote in QST. Most entries were in Class A -- club or non-club groups of three or more.

Of the nearly 1.1 million contacts, approximately 46% were made on phone, and 456,000 (42%) of contacts were made on CW. The remaining 138,000+ (12%) of the contacts were made on digital modes, such as FT8 and RTTY. "This is a substantial increase compared to 2018, when total QSOs on the digital modes numbered just over 56,000," Bourque reported. "With the late 2018 release of WSJT-X (which now supports Field Day exchanges), many participants made use of FT8's ability to communicate when band conditions weren't being cooperative."

Top 10 scores ranged between W3AO's Class 14A entry from Maryland-DC, with 32,356 points, to W1NVT's 14,876-point Class 2A entry from Vermont.

Bourque said that 95% of the 3,113 entries received came through the Field Day web applet.

"Not only is ARRL Field Day an opportunity to sharpen operating skills in temporary and portable locations, it's also an occasion to showcase amateur radio to the local community," Bourque wrote.

Soapbox comments (<http://field-day.arrl.org/fdsoapbox.php>) for Field Day 2019 are available on the ARRL website. ARRL Field Day 2020 will take place June 27 - 28.

### **PCARS turned in a score of 10,998 with 3,561 contacts running Class 4A.**

Here is what PCARS - K8BF did compared to other entries:

**For all of the USA - There were 3,112 entries in ALL classes: K8BF came in 20<sup>th</sup> Place**

**For all of the USA - There were 141 entries in Class 4A: K8BF came in 3<sup>rd</sup> Place**

**Great Lakes Division There were 17 entries in Class 4A: K8BF came in 1<sup>st</sup> Place**

**Ohio Section - There were 9 entries in Class 4A: K8BF came in 1<sup>st</sup> Place**



## Charlie the Tuner's HF High-Lites

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



### Greetings to all DXers:

This is the month that a lot of us kids wait to see what Santa is going to leave under the tree for us. Will it be a new key or tuner or antenna or maybe even a rig? I guess it depends on how much money Santa saved for our Christmas presents.

Now if only Santa could do something about those sun spots....! Someone said that Cycle 25 has started. Others are saying that we are in a Maunder Minimum, whatever that is. All I know is that there is still DX to be worked. It's just a little bit harder to do with the propagation acting as it is. The folks that are working FT8 are working DX as are CW ops. Us SSBers are somewhat at a disadvantage but that does not mean that we can't work some interesting DX.

You just have to get on the air and listen. After all, isn't the first rule of DXing – Listen, Listen, Listen!! So turn your rigs on and listen! Even if you are only in your shack to fill out a few QSLs or clearing up the clutter. Turn the rig on and tune around. You might be surprised at what you hear. Speaking of which, let's see what the coming few months have in store.

As always thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, the AB5K's AR Cluster Networks, ARRL Web Page, NJ1Q & W1AW, AA3B, NG3K & ADXO, NY3B, W3UR & The Daily DX, K5GS, AA7A, K8BL, K8GI, K8YSE, W8GEX & 60m DX News, W9ILY, DL1SBF, DL7UXG & The DX News Letter, DxCoffee.com, DXNews.com, DX-World.Net, F5NQL, F6AJA & Les Nouvelles DX, I1HYW, I1JQJ/IK1ADH & 425 DX News, OH2BH, Pete Rayer & ISWL, RN3RQ, 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.

**5H, TANZANIA.** Chas, NK8O/VE3ISD, will once again be active as 5H3DX from Zinga, Tanzania, between February 16th and March 16th. Activity will be from the pediatric hospital at Zinga. Usual operations will be holiday style. Power output will be the legal limit for Tanzania at 100w and the primary antenna should be a Hexbeam configured for 40-6 meters, including the WARC bands. Operations will be primarily CW, with PSK31, FT8 and possibly SSB. He states that he will use a simple wire antenna and his KX3 with a KXPA100 amp. See QSL info on QRZ.com. Also, QSL via LoTW and eQSL. NO Bureau.

**5I, TANZANIA (IOTA Op).** Silvano, I2YSB, informs that the Italian DXpedition Team (IDT) will be activating Zanzibar Island (AF-032) in Tanzania between February 4-18th. The IDT will be using two callsigns: 5I5TT for CW, SSB and RTTY; 5I4ZZ for FT8 and FT4. The Team will be comprised of 10 operators. Activity will be on 160-10 meters with 5 stations on the air. Suggested frequencies are: CW - 1826, 3530, 7025, 10115, 14030, 18068, 21030, 24890 and 28030 kHz SSB - 3775, 7090, 14240, 18130, 21310, 24950 and 28470 kHz RTTY - 14084 kHz FT4 - 3575, 7047.5, 10140, 14080, 18104, 21140, 24919 and 28180 kHz FT8 - 1845, 3585, 7056, 10131, 14084, 18095, 21091, 24911 and 28091 kHz

**8Q, MALDIVES.** Fabien, DF3XY, will be active as 8Q7XY from Maldives (AS-013) between December 10-23rd. Activity will be on 40/30/20/15/10 meters using SSB and FT8. QSL via his home callsign direct.

**A3, TONGA.** Masa, JA0RQV, will once again be active as A35JP from Tongatapu Island (OC-049) between November 24, 2019 and November 2020. He states, "This time, I will be stationed there as a resident supervisor of the international corporation project." Activity will be on 160-6 meters using CW, SSB and FT8. Equipment is an IC-7300 w/100W into a Vertical antenna. QSL via LoTW and ClubLog, or direct w/2 USDs or by the Bureau via his home callsign JA0RQV. He states, "If you need paper QSL, please be



patient to receive it because I will be able to issue paper QSL after I return to Japan in November 2020. Please do not send SASE to my home address." He also mentions, "During the period, if possible, I will try to activate some outer islands again such as Niuaotupapu (OC-191), Niuafo'ou (OC-123), Vava'u (OC-064) and Ha'apai (OC-169). Details will be announced once decided."

**AU2, INDIA** (Special Event). Look for special event station AU2JCB to be until December 16th. Activity will be on 80-6 meters using SSB. Suggested frequencies are (depending on the propagation): 3710, 7040, 7150, 14210, 14250, 14310, 21235, 21310, 21350, 28490, 28510 and 28545 kHz. On FM Mode: 6m - 50800 and 51500; 10m 29700 kHz. If higher bands are open, operations will be on those bands. The operator will be Surabhi, VU2DSI. QSL direct (with 2 IRCs) to VU2DSI. Operations are to celebrate the 160th anniversary of the birth (November 30th) of Sir Jagadeesh Chandra Bose, India's great scientist and inventor who they consider the "Father of Wireless Communication". ADDED NOTE: There will be other VU operators celebrating this anniversary.

**CE9/HF0/VP8, ANTARCTICA** (Update). Seba, SQ1SGB, will be active as VP8HAL (instead of CE9/SQ1SGB) and HF0ANT from Halley VI British Antarctic Research Station and the Polish Henryk Arctowski Station on King George Island (AN-010, WLOTA LH-0312), respectively, between December 20th and February 8th. Activity will mainly be in 40/20 meters using SSB and the Digital modes (FT8/JT65). QSL via his home callsign direct only.

**HB0, LIECHTESTEIN**. Kasimir, DL2SBY, will once again be active as HB0/DL2SBY from Masescha between December 21-28th. Activity will be on 80-10 meters using CW, SSB and the Digital modes. QSL via DL2SBY, direct or the OQRS (Bureau/direct) via ClubLog ONLY. Do not send your QSL via the Bureau! His log will be uploaded to LoTW later.

**HC5, ECUADOR**. Joshua, W9HT, will be active as HC5JLT from Ecuador between December 15-21st. Activity will be on various HF bands and 6m, using CW, SSB, and the Digital modes. QSL via his home callsign.

**T6, AFGHANISTAN**, Robert, S53R will be QRV as T6AA from Kabul from September to the Summer of 2021 while on work assignment. Activity will be on the HF bands using CW, SSB and various digital modes. He will be active as T6A during major contests. QSL to home call.

**T8, PALAU**. Kazuyoushi, JH6WDG, active as T88AQ from the VIP Guest Hotel (Free Radio Room) on Koror Island (OC-009) between Jan 7-13th. Activity will be on 160-6 meters using CW, SSB and the Digital modes. QSL via his home callsign or LoTW.

**TF, ICELAND**. Operators Col/MM0NDX (aka OJ0Y) and Jonathan/MM0OKG will be active as TF/OJ0Y and TF/MM0OKG, respectively, from the western side of the main island between Dec 31st and Jan 2nd. Depending on the propagation, operators will be on various HF bands using CW, SSB and FT8. QSL TF/OJ0Y via EB7DX or LoTW. QSL TF/MM0OKG via LoTW.

**TO3, MARTINIQUE**. Kan, JJ2RCJ, will be active as TO3FM from FM5BH's Ducos QTH on Martinique (NA-107) between February 3-8th. Activity will be on 80-10 meters (possibly 160m) focusing on FT8 (F/H). QSL via JJ2RCJ, direct, ClubLog's OQRS, LoTW or eQSL. All QSOs will be uploaded to LoTW and eQSL after operation. NO Bureau please.

**HU1, EL SALVADOR** (Update). Ops Andreas/DH8WR, Werner/DJ9KH, Frank/DL1KWK, Dietmar/DL2HWA, Bert/DL2RNS, Georg/DL4SVA, Olaf/DL7JOM, Rolf/DL7VEE and Franz/DL9GFB will be active as HU1DL from El Salvador between January 30th and February 13th. Activity will be on 160-10 meters using CW, SSB, RTTY and FT8. QSL via ClubLog's OQRS (direct and Bureau), DL4SVA direct or LoTW (see Web page for details). No eQSL.

**V4, ST. KITTS**. John, W5JON, active as V47JA from his Calypso Bay, St. Kitts, West Indies vacation home, located 200 feet from the Caribbean Sea, between Dec 10-19th. Activity will be on 160-6 meters (incl. 60m) using SSB and FT8. Equipment is a Yaesu FT1000MP, FT857D, Elecraft KPA500 Amplifier, Mosley Mini32A 10/15/20m, 33' Vertical 10-40m, 35' Top Loaded 80m Vertical, 160m Vertical and 6m 5 element Yagi. ALL QSLs go to W5JON direct or via LoTW. NO Bureau QSLs.

**VK9N, NORFOLK ISLAND (Update)**. Janusz, SP9FIH, will be active as VK9NK from Norfolk Island (OC-005) between January 12th and April 12th. He states, "It is my tribute to Jim Smith, VK9NS, who lived and operated from there for years. According to last internet poll VK9N is 85th most wanted entity." Activity will be on 160-10 meters using SSB, RTTY and FT8. Suggested frequencies are: SSB - 7095, 14195, 18140, 21195, 24940 and 28420 kHz RTTY - 1845, 3569, 7045, 10145, 14095, 18095, 21095, 24920 and 28095 kHz FT8 (F/H) - 1845 (1908 JA), 3569, 7045, 10145, 14095, 18095, 21095, 24920 and 28095 kHz Equipment will be an IC-7200 and Expert 1.3K-FA into a Spiderbeam and verticals. QSL via SP9FIH or ClubLog's OQRS.

**VP2M, MONTSEERRAT**. Duane, WV2B, will be active as VP2MDT from St. Peters, Montserrat (NA-103), between January 9-15th. Activity will be on various HF bands. QSL via WV2B direct.

**WWROF TO SUPPORT YOTA 2020 CAMP**. Tim Duffy, K3LR, reported on November 14th: The World Wide Radio Operators Foundation, Inc. (WWROF) has issued a grant to the organizers of Youth (YOTA) on the Air in IARU region 2, to support a summer camp for licensed amateur radio operators ages 15 through 25. YOTA 2020 Camp will take place June 21 through June 26, 2020 at the National Voice of America Museum of Broadcasting in West Chester Township (North Cincinnati), Ohio, according to an announcement on Ham Nation. WWROF Chairman Tim Duffy, K3LR, explains, "We're glad for this opportunity to support a pilot

project that will become the first of a series of much needed camps held at various sites throughout the Americas. Supporting YOTA 2020 Camp is consistent with WWROF's mission, by helping to improve the operating skills of those who are new to ham radio." About WWROF -- The World Wide Radio Operators Foundation is a non-profit, donor-supported organization dedicated to improving the skills and fun of amateur radio operators around the world by utilizing education, competition, advancement of technology and scientific research, promoting international friendship and goodwill. WWROF sponsors radiosport events, provides the infrastructure for log submission, log checking, and other services in support of many popular radio contests.

**W8S SWAINS ISLAND DXPEDITION (Update).** Upcoming DXpedition to Swains Island (OC-200) will take place between March 10-25th. The list of international operators signing as W8S are as follows: Hans/DL6JGN (Team Leader), Ronald/PA3EWP (Co-Team Leader), Uwe/DJ9HX, Axel/DL6KVA, Dieter/ DJ9ON, Steve/AG4W, Adrian/KO8SCA, Martin/PA4WM, Gerben/PG5M (QSL Manager) and Rainer/DL2AMD. Activity on all HF bands using CW, SSB, FT8 and RTTY, with 4 stations from 2 camps.

**XW, LAOS.** Bruce, 3W3B (HS0ZCY/XU7ADF/XW1B/AA4XR), who lives in Da Nang, will once again be active as XW4XR from Vientiane between December 4-14th. Activity will be on 40-6 meters (60m included) using CW, RTTY, JT65 and FT8. QSL via E21EIC and LoTW (preferred method).

**YJ, VANUATU.** Operators Will/AA4NC and AA4VK will be active as YJ0NC from Port Vila, Efate Island (OC-035) during of March. This is part of a South Pacific DXpedition which they will activate 8 country. Activity will be holiday style on various HF bands, but will include the ARRL DX Phone Contest (March 7-8th). QSL via AA4NC. Look for more details to be forthcoming.

**ZC4, UK SOVEREIGN BASE AREA CYPRUS.** Members of the Cambridge University Wireless Society (CUWS) will be active as ZC4UW from UK Sovereign Base Area on Cyprus (AS-004) between January 2-7th. Operators mentioned are Martin/G3ZAY, Simon/G7SOZ, Michael/G7VJR, Stavros/M0BBB (5B4AFM), Dominic/M0BLF, Robert/M0VFC, Dan/M0WUT and Will/M0ZXA. Activity will be on 160-10 meters using CW and SSB. QSL via ClubLog's OQRS or LoTW. Logs will be uploaded to ClubLog and LoTW. So please use ClubLog's OQRS and do not send any cards direct or via the Bureau.

**ZD8, ASCENSION ISLAND.** Darrin, N4WTN, who has been on the islands since October 1st, has finally received his permanent ZD8 callsign from the local government. Begin looking for him to sign ZD8DRP. QSL via: Darrin R Proehl, PO Box 4235, Patrick AFB, FL 32925, Ascension Island

## IOTA NEWS...

**AF-019.** Operators Silvo/S50X, S51V, Krajcar/S52P, Peter/S54W, Pavla/ S56DX, Berto/S56N, Slavko/S57DX and Drago/S59A will be active as IG9/homecall from **Lampedusa Island** between Jan 21-27th. Activity will be on 160-10 meters, and this will include the CQWW DX 160m CW Contest (Jan 24-26th) as a Multi-Op entry signing as IG9/S59A. QSL via their home callsigns.

**AS-015.** Rich, PA0RRS, active as 9M2MRS from **Penang Island, West Malaysia**, between Dec 2nd and Feb 28th. Activity will probably be on 40-10meters using CW, RTTY, PSK, FT8, FT4 and possibly SSB (he will have a microphone in the luggage, but normally no SSB [possible on request]). Rich will have a Yaesu FT450D with 100 watt into a G5RV dipole with bents on the balcony of the house and a MFJ automatic intellituner for all bands. QSL via his home callsign, ClubLog's OQRS, LoTW or eQSL.

**AS-153.** Members of the West Bengal Radio Club (VU2WB) will be active as 8T2G from **Ganga Sagar Mela** between January 10-17th. Activity will be on various HF bands. QSL via VU2NRO.

**OC-059.** Haru, JA1XGI, active as V6K from **Kosrae Island** between December 2-9th. Activity will be on 160/80/40/30/20 meters using mainly CW with some RTTY and FT8. Focus will be on EU/NA/SA/Middle East of Asia. He will also be in the ARRL 160m CW Contest (December 6-8th). Suggested frequencies are: CW - 1815/1822.5, 3525, 7025, 10115 and 14040 kHz RTTY - 7035, 10140 and 14080 kHz FT8(N) - 1840, 3573, 7074, 10136 and 14074 kHz FT8(F/H) - 7051, 10131 and 14085 kHz \*\* Frequency on the above will change by band condition. His equipment will be an Icom IC7300 with a DXV600L(Tiny PA) into two vertical antennas. QSL via his home callsign, direct, by the Bureau, ClubLog's OQRS or LoTW (available after 3 months).

Well there you have it for December and into the New Year. Let's hope that 2020 brings about a few sunspots and we can work DX a little easier.

Until next month, 73 and Gud DX!!





## CW/QRP & Linux Special Interest Groups

**Terry, KB8AMZ**



### CW & QRP SIG

The next QRP/CW SIG will be held on Tuesday, 10 December at the PCARS club site. We will be operating the club rigs for Get on the Air. All that is required of you is knowing Morse Code. If you don't have a straight for sending I have one to loan you for the night. The past couple months club members have come to the club site and worked CW QRP. I hope to see you at the club site the second Tuesday of December.

### Linux for Hams SIG

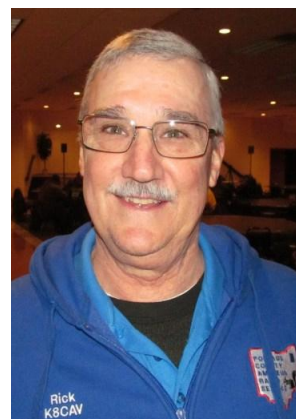
The next meeting of the group will be Tuesday, December 31 at 7 PM. Please bring your Raspberry Pi and peripherals. More stuff to learn using the command line and installing Amateur Radio software. We discovered after the ladies from Family Counseling left, the WiFi bandwidth was freed up and downloading resumed at a respectable speed. I have several software applications that you can install on your Raspberry Pi's such as rig control, fldigi, winlink, ARDOP. I want to present to you a couple pieces of hardware you might want to purchase so your Pi will have real time. Also, a nifty USB SD card reader/writer. As I stated at the November Member meeting I will be at the club site on New Year's Eve. We will be done by 2130 hours, so if you have plans on partying in the New Year you will have plenty of time to get ready following the SIG.

NOTE: We will meet again in the new year on March 31st.



## Digital Special Interest Group

**Rick, K8CAV**



The Digital Special Interest Group will be meeting on Tuesday December 3rd at 7:00 PM at the club site in Ravenna.

The mission of the Digital Special Interest Group is to provide training and presentations in digital communications, promote discussion of digital communications and related topics, and to provide help with any questions or problems involving digital communications. It also provides opportunity, using the club's station, to operate on digital modes.

This month I would like to get input from you, on what topics or areas of digital communications you would like to see presented. Please come if you can and give me your thoughts so I can work on getting things set up for 2020. If you can't make the meeting but have some ideas to share, please let me know at [k8cav.coms@gmail.com](mailto:k8cav.coms@gmail.com).



## DX and Contest Special Interest Group

**Chuck, W8PT**

Hello PCARS DXers and Contesters:

On Tuesday, November 26<sup>th</sup>, we held our last DX/Contest Special Interest Group meeting for 2019. I have to thank all those who came out to take part in our discussions. Needless to say, with all those present we had a really productive meeting.

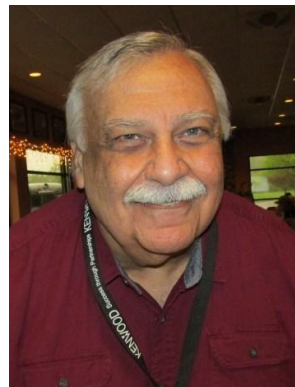
The main topic was how do we get more PCARS members involved and comfortable in contesting. The idea is to take part in some national contests where our members can work from their own QTHs, using their own call signs and still be part of the PCARS fun.

Our club participates in various state QSO contests and a few RTTY contests. In these contests, those who want to participate need to be at the club site and use the club call.

But there are several, and I do mean several, clubs who participate in national contests put on by the ARRL or CQ Magazine, where the various participants work from their own home and use their own call. When they send in their logs, they specify the club to which they belong. Then all the scores from those club members get counted together to get a total club score. This does not affect your score - it just adds to the Club Name score.

Now there are a lot of details that I cannot go into here. But suffice it to say that everyone present was very positive when we asked if we wanted to do this. So we will be picking out some bigger contests to play in, in this manner during our first SIG meeting for 2020 in January. We will also be publishing a list of ALL our contesting efforts not only in our newsletter but also on our website so that our membership will have a good chance to plan their involvement in our contesting program. So look for future announcements regarding the PCARS Black Squirrel Contest Group in The RADIOGRAM and on our website.

For now, 73 and Gud DXing.



## PCARS IO Group

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

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



**Two things every member should do.**

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





# Unusual Antenna Designs

*Jim, AC8NT*



I was asked a couple of weeks ago if I had any examples of unusual antenna designs. Over my years I have seen some unusual or even strange designs, so I thought I would tell you about some of them.



Figure 1

The first category I will call blow up designs. Not explosive but let's say very portable. There is the blow up 2 meter/70 cm antenna shown in Figure 1. This design can actually be purchased for about \$125. No pump is needed just a pair of good lungs. It folds into a envelope sized pouch that can be easily carried. Reports from fellow hams say its SWR is always well under 1.5:1, it works well and is very light. This is followed by blow-up towers. You heard me, towers. Figure 2 shows a couple of these. They are either vertical antennas or towers that can support up to about 20 pounds. Out west I have talked to hams that have used these to support NVIS dipoles. Properly anchored they are said to hold up well in winds, but so are "bouncy houses" that take off



Figure 2



Figure 3

with kids inside. Our entire club, taking turns, could not blow up one of these. You need a blower. They are also not cheap, running about \$500 dollars for a 10 meter vertical. Last but certainly not cheap are blow up dish antennas. I have seen these work first hand and they work very well. The antenna and electronics fit into a 30 pound total weight backpack for transport. Figure 3 shows one of these designs. Before you run out and pick one of these up for satellite work, you should know they start at \$49,000 dollars for just the antenna. Remember this was designed for the military. Maybe you should give your significant other a hint that you would like one of these three options for Christmas.

The next set of unusual antennas are antennas that use water. In a previous newsletter I showed the one in Figure 4. It uses a jet of sea water as an antenna. Using a pump the length of the "pee" stream can be changed to tune different frequencies. These are actually being used on ships to allow coverage of a large range of frequencies that are not used often enough for dedicated antennas. Students have built and tested these designs and found them to work well. A more recent design is shown in Figure 5. This design



Figure 4

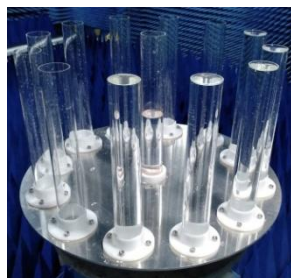


Figure 5

uses glass or plastic tubes filled with saltwater. The driven monopole is in the center is surrounded by parasitic elements. By filling the monopole and outer elements to specific levels, you can direct the pattern of the antenna. This design is being considered for pattern layout studies for the new 5G networks. The hard part of this design was engineering the pumps and control systems used to control the water levels. The levels need to be adjusted to change pattern, frequency, and because the permeability of saltwater changes with temperature. Lei Xing and her colleagues at the College of Electronic and Information

Engineering at Nanjing University of Aeronautics and Astronautics in China are credited with this design. I may build one of these for

70 cm operation.

Now for the really strange designs. Some make you say, "what the". The first is Figure 6. I have no idea where this was made or by whom. It just makes me laugh. I call it the grocery antenna for obvious reasons. Anybody have a guess what band this will work on? Maybe the Antenna SIG should build and test one of these. In a more serious vain, Figure 7 went into space. It is what is called an evolved design. These are computer generated designs

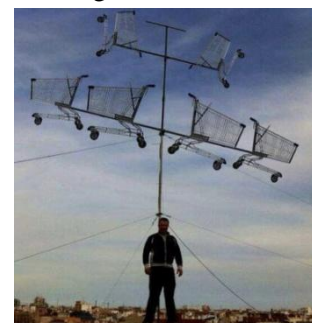


Figure 6

that often meet unusual design requirements. Say circular polarized wide bandwidth requirements in the SHF bands. Not a single length of element or angle in this design could have been done using standard antenna design methods. This antenna was on the Space Technology 5 satellite launched in 2006 and outperformed backup standard design that had been used on previous satellites. These evolve designs are being tried in the HF bands and may result in a “next generation” multiband antenna for ham radio. These should be interesting designs.

**Figure 7**



Elsewhere in this newsletter is an article about a visit to the Case Amateur Radio Club. They built an unusual antenna using a flute as the radiating element. It was called the Flutenna. This antenna was used to make the first flute-to-rubber-duck and flute-to-flute (also called Q-tutti-flutti) QSOs. The components of the antenna were one standard Boehm-system soprano flute, a flute stand from Amazon, some copper foil tape and four discarded violoncello strings for radials. Did I mention that four of the club officers are also flautists? Figure 8 shows the finished product being use for a rubber-duck-to-flute QSO and Figure 9 shows the first Q-tutti-flutti QSO. They also found that a piccolo works well on 70 cm. Future experiments include a two-flute dipole and using a Pingree flute in a microwave antenna. As a lover of classical music and ham radio, I think this was an outstanding project.



**Figure 8**



**Figure 9**

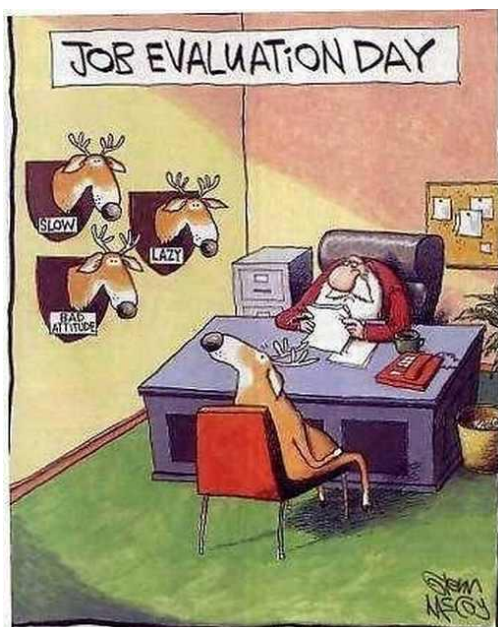
To close, each May there is a Strange Antenna Day where hams build antennas from just about everything and see how many QSOs they can make. You can't use any of the normal antenna materials (copper tubing, dipole wire etc.). Hams have used gutters, ladders, art installations, just junk and even an Army tank as antennas. The



**Figure 10**

tank antenna shown in Figure 10. A QSO of almost 900 miles was completed using this “military” antenna. This might give our Rick, K8CAV some other “antennas” to try. Maybe a really big piece of field artillery could be used. I plan to enter this challenge in 2020 just for the fun of it.

All hams need antennas. I hope this has been fun and helped you understand the incredible range of designs available. The next time someone says, “you can't load that”, you will know that may not be true.



**Break out the LEDs and freak out the neighbors!**





## Photos from the November PCARS Meeting







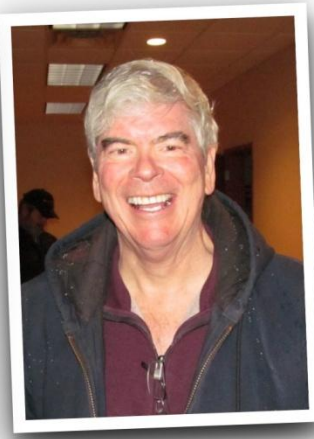
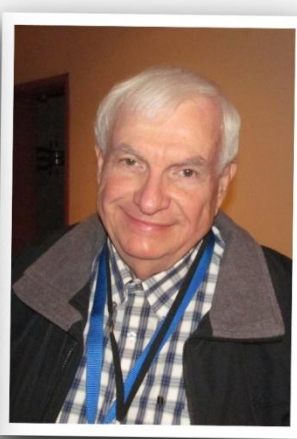
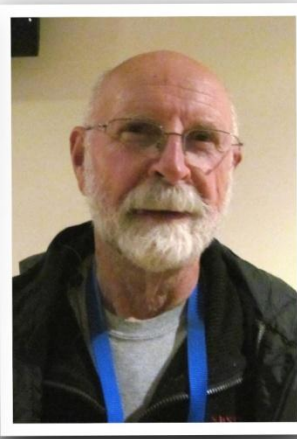
**PCARS Meeting  
November 11, 2019**





# PCARS Meeting - November 11, 2019





## PCARS Meeting November 11, 2019



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





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

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

We have 72 PCARS member's ham plates now, **but we can use more**. Don't have ham radio call plates on your vehicle? Well for those of you in Ohio, you can get the plates sent to you by going to any License Bureau office and filling out the special plate registration form. Have a copy of your current FCC license when you apply. The official form to obtain your Ohio Amateur Radio license plates is on the PCARS IO Group site. Then you'll have an old plate to bring in to get hung up as a **permanent part of PCARS history**.



### From the Ohio BMV:

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

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

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

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

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

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

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

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

## PCARS is on YouTube

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

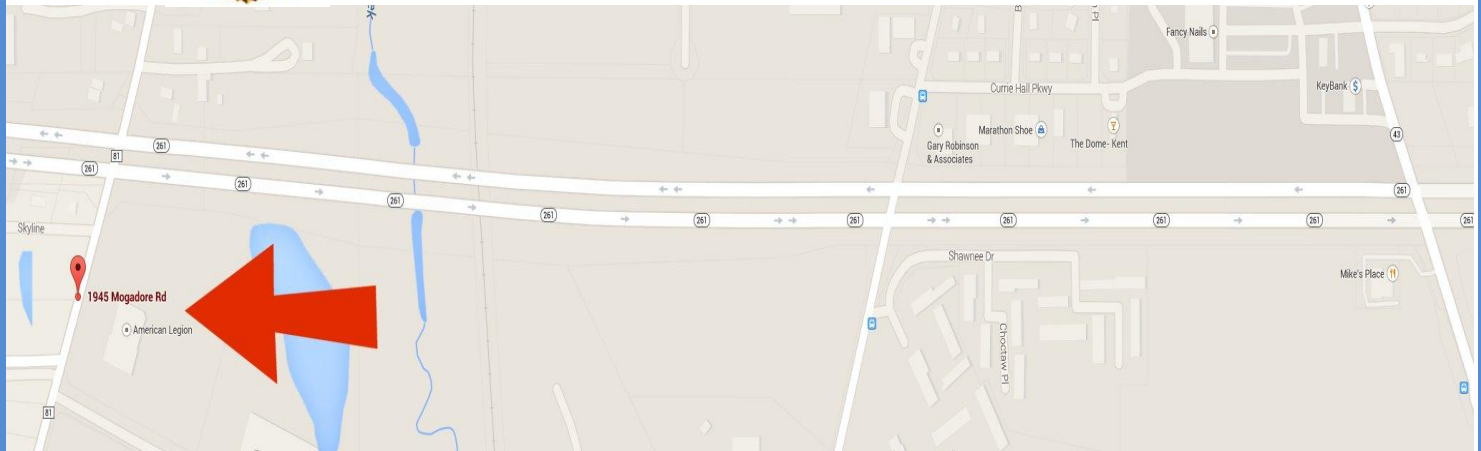


## PCARS Meetings

The Portage County Amateur Radio Service (PCARS) meetings are held the **2<sup>nd</sup> 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.



*Portage County Amateur Radio Service, Inc.*



**PCARS - K8BF**

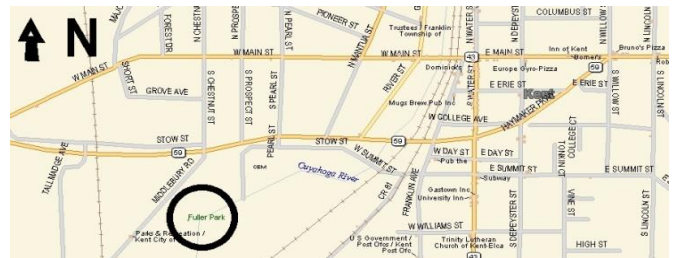
*15th Annual*

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



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

*When: Saturday - Feb. 8, 2020  
Set up: 9 am*



*Operating Time: 10 am - 3 pm EST*

*We will be active on CW & Phone in the General areas of the 6, 10, 15, 20, 40 and 80 meter bands (Repeater & Echolink on the K8SRR echo link node for a certificate) and anything else we can get working. Club Call Sign **K8BF** for a certificate. Other participating stations will be using their own callsign/FYAO, or calling "CQ FYAO" (only stations at the Freeze Your Acorns Off event should use the /FYAO designator). Yes, we'll be braving the cold snowy weather of North Eastern Ohio to set up QRP stations using portable power and antennas.*



*A beautiful color (suitable for framing) 8" x 10" certificate is available if you contact K8BF and send your QSL with a large SASE to the club call trustee:*

*Amy Leggiero, KD8SKL - 6229 Gladys St Unit B - Ravenna, OH 44266*

*So, from the comfort of your warm radio shack - give us a contact while we're out freezing. We'll need all the contacts we can make to help keep us warm. Your support will be very much appreciated!*



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





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

### Membership Application [ ] New [ ] Renewal

This form **MUST** be filled out for **any** membership transaction

Name: \_\_\_\_\_ Call Sign: \_\_\_\_\_ License Class: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

ARRL Member? [ ] Yes [ ] No ARRL Membership Expires Month: \_\_\_\_\_ Year: \_\_\_\_\_

Birthday: Month: \_\_\_\_\_ Year: \_\_\_\_\_

A \$5.00 initiation fee will be assessed in the first year of membership for all new members.  
Membership year is Jan 1 - Dec 31. Dues are due no later than Dec 31st. *If you don't pay by 12/31 - you are no longer a member and you will have to pay the \$5.00 fee again plus dues per the schedule below and you will be issued a new member number.*

Check One	Membership	Renewal & New Membership Rate **	New Membership Rate **
	<b>Life Member ***</b>	\$75-Founder \$175-Charter	\$250-Regular \$125-Senior
	<b>Regular Member</b>	\$20.00 Jan-Dec	\$15.00 July-Dec
	<b>Associate Member</b>	\$20.00 Jan-Dec	\$15.00 July-Dec
	<b>Senior Member (65+)</b>	\$16.00 Jan-Dec	\$11.00 July-Dec
	<b>Family Member *</b>	\$10.00 Jan-Dec	\$5.00 July-Dec

\*Family = wife, husband, brother, sister, son, daughter, father, mother that is a licensed amateur radio operator and who's FCC license has the same address as the paid regular member's FCC license.

\*\*The rate plus a \$5.00 initiation fee will be assessed for all new members.

\*\*\* Must have been a member in good standing for previous 5 consecutive years.

Checks can be made out to either "PCARS" - or - "Portage County Amateur Radio Service, Inc."

What are **YOUR** Ham Radio interests:

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

As a member in PCARS you agree to PCARS sending club related information to your e-mail address and allowing use of your photographs submitted or taken during PCARS events to be used for PCARS publications and ham radio related articles.

Mail to: Portage County Amateur Radio Service, Inc.  
705 Oakwood Street - Box 12  
Ravenna, OH 44266

Date Received:	<input type="radio"/> New	<input type="radio"/> Renew
Initiation Fee: \$	+	Dues: \$ = Total \$
Paid: <input type="radio"/> Cash -or- <input type="radio"/> Check	Check #	
-or- <input type="radio"/> PayPal Transaction Number:		
Date Voted:	Results:	Member Number:
<input type="radio"/> Database Updated		

Rev. 8 Nov 2019



# ~ Amateur Radio Instruction Class ~

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

is sponsoring an Amateur Radio **General Class** course

that will enable *You* to upgrade

*Your* FCC license to

## General Class



**When:**

Wednesday evening 7:00 p.m. – 9:00 p.m.  
February 5, 2020 through March 25, 2020  
8 weeks. Official Amateur Radio License testing  
will be held at the end of the course (March 25<sup>th</sup>).

**Where:**

At the **PCARS Club Site**  
Radio Room located in the Dietrich Building  
705 Oakwood Street in Ravenna

**Registration:** First night of class

**Cost:**

**\$25.00 Registration fee.**

(No Registration Fee for PCARS Members)

**\$33 Text – “General Class License Manual”**

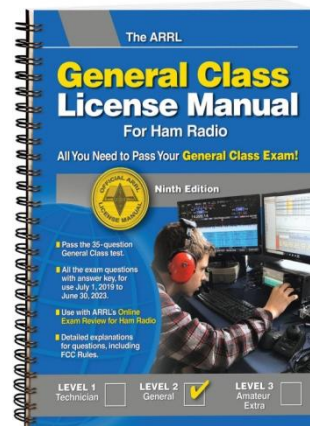
(text may be purchased first night of class)

**Information:**

Contact Jim Wilson, AC8NT

e-mail at: [jawilson@j3solutions.com](mailto:jawilson@j3solutions.com)

phone at: **330-342-8149**



As a licensed **General Class Radio Operator** you will be able to

- **Contact other ham radio operators on more frequencies around the world**
- **Serve your community – ham radio operators are the critical communication link during disasters and emergencies - local, county, state and world-wide**
- **Have a LOT of fun on-the-air**

**THERE WILL BE A FIVE STUDENT MINIMUM (or no class will be held)**

**Contact Jim Wilson, AC8NT to make your reservation NOW**

**Jim Wilson - AC8NT, at [jawilson@j3solutions.com](mailto:jawilson@j3solutions.com) or by phone at 330-342-8149**

# Merry Christmas from All of Us to All of You



WB8LCD	KC8LJY	W8SV	WD8RAY	KD8WCK	WA8SAJ	KE8HTL	KA8OAD	KD8MOF
KB8UJZ	KD8EPA	K8FS	W8RID	W8IFM	N1CJW	KE8IED	KC8YSU	WB3HUS
KB8VJL	K8FEY	KC8YYS	KD8PBL	KD8BBT	KE8BWA	W8AHC	W3CDG	KE8LJQ
W8KNO	WB2DFC	KD8VT	KD8ERY	AC8PR	K8SWJ	KE8HNK	N3BSN	W8LSQ
KB8SZI	KD8FLZ	N8HUC	K8JJM	K8BE	KD8WBC	N8SKN	KE8HQB	K8NYL
KD8EPF	N8XTH	KB3QV	WA4WGA	AC8QG	W8BBQ	KE8BBI	KE8KKW	KE8MKZ
N8KBX	K8QF	KB3GXB	KD8RHW	KD8ZDZ	W8GWI	WD8ICX	WN8DHK	KE8VS
WB8VYW	N8ATV	NR8W	W8EZE	WV8P	K8HYM	N8KEV	WB2MGP	KE8MKY
W8PT	N8GIE	K8DER	KD8SKL	KD8YXH	KE8EGG	KB8ZWT	KE8LAM	W8BDE
N6TL	KB8AMZ	G0BPS	KD8SIZ	N8BI	KE8EGF	W8NET	KD8SNM	W8KFW
N4PKW	KD8FME	KD8LIR	WA8QHK	N8QZ	KD8GYI	W0KGB	KE8LWN	KE8MXR
KB8TUY	WX4QZ	KB8UHN	KD8SJB	N8SY	KE8ELR	KD8WHA	KD8ZTZ	KE8MWD
N4IT	N8QE	W8CDL	W8CYN	KD8ZXD	KB8SK	KC3JXQ	WA8YFL	W8IZC
WB9LBI	K8CAV	KD8MQ	KD8SOP	KD8ZXB	KE8EFW	N8WCP	W8KUZ	KB8N
KC8FQV	K8SRR	K8NYM	AE8YL	KD8ZSH	AC8XO	KE8GBL	WB8HYO	KD8TNZ
WB8OVQ	WA8AR	KD8LLN	KD8WZS	N8GPS	WA8US	N8FUM	WD8KGH	K8WAZ
WD8BIW	NX8G	KD8MLE	K8MSH	N6JRL	AB8YK	KD8JN	KC8QPC	K8PKN
N8FTP	KD8ICP	KD8NLQ	KE8IEC	K8EUR	K1LTZ	W8YIH	K8YLK	KG6DAQ
W8RJG	KD8DFL	KW8KW	KB8CLH	KC8RKD	K8VOX	K8HTB	KE8LWL	Daniel
AB8IE	NT8K	KD8CGH	KA8OAT	KE8BFA	N8NB	K8IG	KE8LWM	Denise
N8WLE	K8AAB	WA8GCF	KD8UXJ	K8KSU	AB8PW	KE8KCJ	KE8LWO	Arlene
N8PXW	K3GP	KA8TOA	AC8NT	WA8TSI	WA8UWV	KE8JUZ	KE8LWP	Marie
WD8DAU	KD8JRE	WA8OKR	KD8UXG	W5OV	KD8RUQ	KE8JFP	AK8U	
K8IV	KD8IUA	N8IL	KB8VJO	K3LR	WA2MNA	NO8D	KC8LJO	
KD8EPG	WA8CCU	KD8OBA	W8JFQ	K1ZZ	KE8GSK	KE8KBJ	N2KWW	

2019



## 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 for 2020 and beyond. **To all a very merry Christmas and a prosperous New Year. May you have great health, and more Fun with ham radio.**

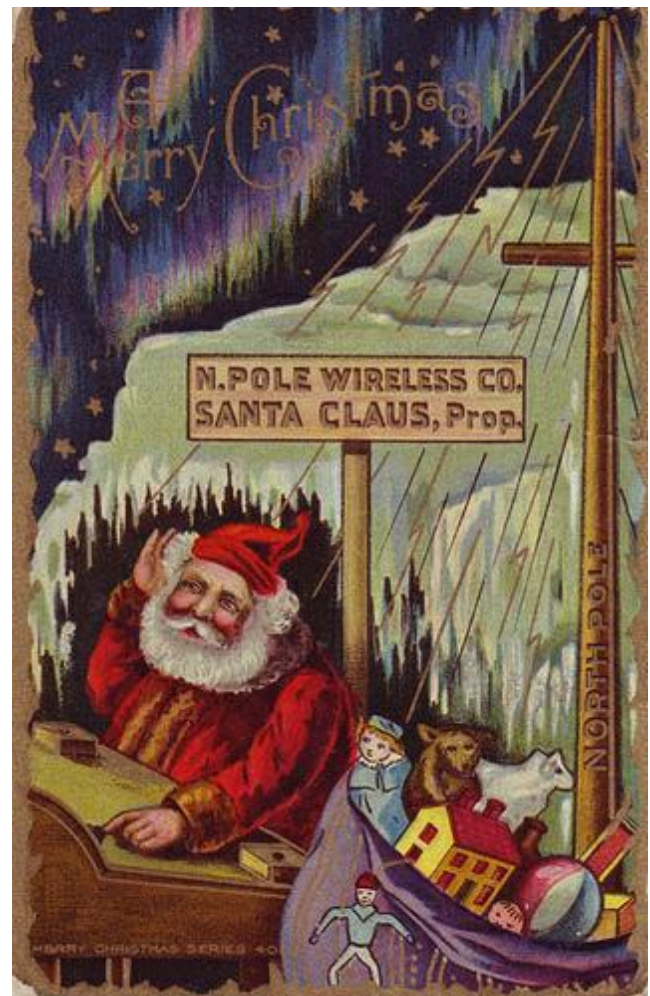
Thanks go out to the contributors for this month's newsletter:

**AC8NT, AC8QG, KB8UUZ, WA8EFK, WB8LCD, N8SY, W8KNO, KA8TOA, K8CAV, W8PT, KB8AMZ, The ARRL, and the World-Wide Web.**

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



Dear Santa,  
How are you? I'm good.  
Here is what I want for  
Christmas.  
[http://www.amazon.com/gp/product/B0032HF60M/ref=s9\\_hps\\_bw\\_g2l\\_1r03?pf\\_rd\\_m=ATVPDKIKXODER&pf\\_rd\\_s=center-3&pf\\_rd\\_r=1XW442FH1K03Y7BMWQNM&pf\\_rd\\_t=101&pf\\_rd\\_p=1328901542&pf\\_rd\\_i=16579](http://www.amazon.com/gp/product/B0032HF60M/ref=s9_hps_bw_g2l_1r03?pf_rd_m=ATVPDKIKXODER&pf_rd_s=center-3&pf_rd_r=1XW442FH1K03Y7BMWQNM&pf_rd_t=101&pf_rd_p=1328901542&pf_rd_i=16579)



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

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

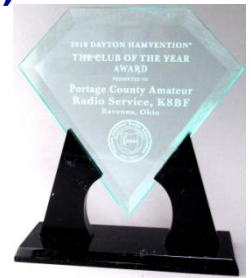


PCARS meets the second Monday of each month at the **Kent American Legion Post 496**, 1945 Mogadore Rd. - just South of Rt. 261 - enter the rear of the building for the meeting room.

**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](http://www.PORTCARS.ORG) -or- [www.K8BF.ORG](http://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
~ Meetings & Net ~		Newsletter Editor	KB8UUZ Tom Parkinson
2nd Monday of each month. 7pm Thursday night Club Net at 8 pm on 146.895	OSPOTA Chairman	KB8UUZ	Tom Parkinson
	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
W8EZT	Frank Tompkins
AC8NT	Jim Wilson
K8MSH	Mark Haverstock
KA8TOA	Greg Ash
W8PT	Chuck Patellis
AC8QG	Nick Wagner
N8FUM	Dan Torchia
W8GWI	Dave Seckel



## 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 - Third Place 2015 - Second Place 2014, 2016 - First Place 2012, 2013, 2017, 2018, 2019. ARRL Great Lakes Division Newsletter - Second Place 2013 - First Place in the 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](mailto:KB8UUZ@gmail.com). The **RADIOGRAM** always obtains written permission for reproducing copyright material. The **RADIOGRAM** comes out the first day of each month (usually), please have inputs submitted by 8 pm ET on the last Friday of each month. ARES® (Amateur Radio Emergency Service®) is a program of, and both logos are registered trademarks (used with permission) of the American Radio Relay League, Inc. ARRL, the National Association for Amateur Radio™. **Why the Black Squirrel in our logo?** For those of you not familiar with it: The Black Squirrel is commonly seen around Portage County, Ohio. Seems that some of these little guys and gals got loose from Kent State University back in 1961. They have migrated and thrived throughout our county. Kent State University even has an annual Black Squirrel Festival. **So when you spot a black squirrel – think PCARS!**

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



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



NLC

