



The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works



March 2014 ~ Official Newsletter of the Portage County Amateur Radio Service, Inc. (PCARS) ~ Vol. 9 No. 3

~ 2014 Officers ~

President - Tom Sly - WB8LCD
Vice President - Jim Aylward - KC8PD
Treasurer - George Proudfoot - K3GP
3 Year Trustee - James Andrews - KD8VT
2 Year Trustee - Erica Pelz - AE8YL
1 Year Trustee - Bob Hajdak - N8QE

~ Meetings & Net ~

2nd Monday of
each month. 7pm
Thursday night
Club Net at 8 pm
on 146.895

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliated
April 20, 2006



**Special Services
Club**
March 22, 2010

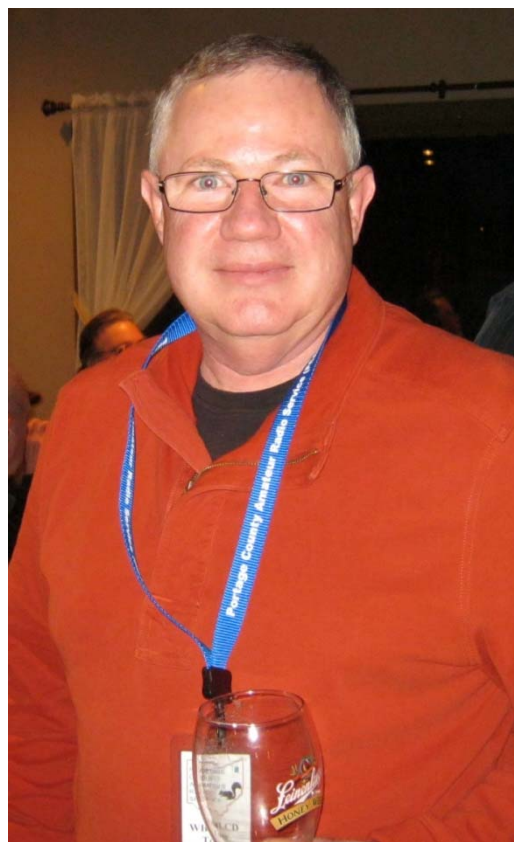
From the President

I'm pleased with all of the positive comments I've received regarding our new meeting place. Here's hoping that when we show up for the March meeting that they haven't put up any new walls in the meeting room! If you haven't had a chance to check the place out yet, please, join us for the March meeting on March 10 at 7:00 PM. You'll be glad you did. We'll refer to it as the Overlook Restaurant, although the name has not officially changed yet (it's currently the Fairways at Twin Lakes), it's located at 1519 Overlook Rd., Kent, OH, and is in the old clubhouse of the Twin Lakes Country Club.

As of the day of this writing, we have 147 paid members. If you've been meaning to pay your dues for 2014 but just haven't done so yet, please get that taken care of so we can show you as an active member. There's going to be some natural attrition with any club's membership, we've had members who have moved, a few have passed away, and a whole bunch left for other reasons. I think there are two main reasons: Many existing hams joined the club and realized that we were a club that does stuff and expects you to participate with us! Not everyone is willing to be an active part of what we do because they have to drive too far, they have other plans, there's something good on TV or they're busy taking a nap. The second main reason is for new hams who got involved and became a member through our Technician license class. For some reason, they just never got engaged with the hobby, and never came back. It's too bad for everyone who has drifted away, not only is Ham Radio one of the most interesting hobbies in the World, PCARS is one of the best clubs in NE Ohio for getting involved and having fun with the hobby. And if you take it seriously, there are lots of opportunities to improve yourself with ham radio knowledge and "hands on" experiences.

Speaking of those educational opportunities and experiences, PCARS has a whole bunch of stuff ready to keep you occupied, educated and entertained this year! And we'll be covering the whole gamut of ham radio experiences and facets of the hobby. I know not everyone is active in every aspect of the hobby that we may have a program on, but that's OK.

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From the President (continued from Page 1)

Come out and enjoy the program anyhow, you never know where you might pick up some bit of knowledge that was just what you were looking for. Heck, you might find out about some part of the ham radio hobby that you never knew existed, but none the less captures your attention and interest. Keep your eyes wide open, there's a whole bunch of ham radio fun and information coming your way.

Hamfest season is just starting to take off again. We all have the rounds we make locally. A couple years ago I went to the TenTec Hamfest in Sevierville, TN. What a change of scenery. Different faces, different vendors, different stuff to fill your trunk with. Yet, as I was walking down the aisle, I heard "Hey Tom!" and turned around to see Don Dubon, N6JRL, and Dave Kalter, KB8OCP (SK), from DARA. Hamfests are a great place to meet and greet both old and new friends. Next to the Dayton Hamvention, I think my favorite fest in Ohio is the Findlay Hamfest, usually the same weekend as OSPOTA. I may pick a park farther west this year! Another fest I've heard about for years, but have never been to is the "Cedars of Lebanon" Hamfest put on by the Short Mountain Repeater Club <http://smrclub.com/content/articles/smrclub-cedars-lebanon-hamfest> near Nashville, TN. A date for this year has not yet been set, but it will probably be in August sometime. I've got a son living in Nashville now, so I'm sure I'll be "allowed" to go – and I'm looking forward to it.

Ham Radio! PCARS! 73,

Tom, WB8LCD
PCARS President



From the Vice President

Time again for one of those behind the scenes reviews of PCARS operations. As the club has grown we have found it useful to periodically provide a refresher on how things work. Much like the story about the duck gliding along on the pond, there is a whole lotta paddling going on to keep PCARS afloat.

PCARS is a corporation and all of the club's business is done by its board. We planned it that way from day one so that monthly membership meetings did not get bogged down in operational minutiae. That is a welcome relief for the members who are still invited to attend the board meetings to keep informed on how things are going.

The board consists of the officers: President, Vice-President, Treasurer and immediate Past President, as well as the three trustees who serve staggered terms. All are elected by the membership. The general outline for club governance can be found in the PCARS Constitution and Bylaws which also outlines the basic duties and responsibilities of the officers and trustees. Note that the Secretary is appointed by the President since this is not an elective position.



The President has the responsibility for running the show – presiding over board meetings and membership meetings and managing the day to day business of the club between board meetings. He or she really acts as the chief executive officer of the business.

The Vice-President, in some ways, has a busier job because he or she is responsible for all of the club's programming and activities. Effectively, the VP is the chief operating officer.

The Treasurer collects the money, pays the bills, keeps the books and manages PCARS' funds, reporting out to the board and the membership on a monthly basis. The Treasurer is our chief financial officer. One of the main duties of the trustees is to conduct the audit of the club's accounts and making sure that its fiscal house is in order.

The President can delegate any number of responsibilities to a variety of standing or ad hoc committees in order to facilitate operations. This is where the club's members can play a critical role by volunteering to staff or chair a committee and they can learn more about how the club works. A great example is set by the members who are the facilitators for the Special Interest Groups.

The Secretary keeps the club's records and meeting minutes as well as maintaining the membership roster.

But these general descriptions of duties, don't really give you a sense of all the tasks that are actually done. Everything from answering emails and member inquiries; new member recruitment and community outreach; maintaining relations with the ARRL, the Ohio Section and other area clubs; creating, designing and managing club programs and activities, including their scheduling, promotion, and implementation; organizing, scheduling and teaching our Technician and General classes; all the facets of the club site operations; not to mention our weekly net. The list goes on.



It takes a lot of commitment, involvement and time to both sustain and grow the club. Tom, WB8LCD, and I are in touch with each other at least four or five times a week to keep tabs on club operations. As always, we encourage PCARS members to become more involved. Not only do we need your assistance, but you will have a better sense of what it takes to get the job done and we send our thanks to all of you who have been active members of the PCARS team!

You input is valued so whenever you have questions about club operations or suggestions for events and activities, just let us know.

73,
Jim, KC8PD
PCARS Vice President



Mark Your Calendars

On the calendar for upcoming meetings and activities are:

- **Mar 10th - PCARS Meeting** - 7 pm - Bob Heil founder & owner of Heil Microphones via Skype
- **Mar 19th - VE Test Session** at the club site - 7 pm for the classes going on - open to anyone
- **Mar 22nd - VOM training** by Rick, K8CAV. Learn how to properly use a Volt/Ohm meter, and all of the testing techniques you can use it for. This is the most basic and most useful test instrument available, everyone will improve their skill level with this training!
- **April 14th - PCARS Meeting** - Tim Duffy, K3LR - the Super Contest Station
- **May 10th - Antenna Day** at the Ravenna City Park - Let's get ready for Field Day !
- **May 16-17-18th - Dayton Hamvention[®]**
- **May 17th - Annual Hamvention[®] Photo Shoot** at the Dayton Hamvention[®]

Special Interest Groups - Every Month at the Club Site - 7 pm

First Tuesday - **Digital** Special Interest Group
Second Tuesday - **QRP/CW** Special Interest Group
Third Tuesday - **Antenna** Special Interest Group
Fourth Tuesday - **DX & Contest** Special Interest Group
Fifth Tuesday - **Linux for Hams** Special Interest Group

Fourth Thursday - Net Night at the club site - 6:30 pm



PCARS VE Test Sessions

PCARS VE sessions are scheduled for 10:00 am on the first Saturday of every even numbered month.

April 5th, June 7th, August 2nd, October 4th, December 6th

Special Amateur Extra Class & General Class VE Test Session (Open to anyone) - **March 19th - 7 pm**

What to Bring to the Testing Session

- \$15 is the current test fee. We prefer the exact amount in cash or a check made out to: ARRL-VEC
- A government photo ID (**driver's license or state ID card preferred**).
- Your Social Security Number or FCC Federal Registration Number. We are required to submit either your Social Security Number (SSN) or your FCC Federal Registration Number (FRN) with your application. If you are upgrading, your FRN is on your current Amateur Radio license.
- A pen (black ink) and pencil (we can loan you either or both)
- **If you already have an Amateur Radio license: The original (*and one copy*) of any current (*unexpired*) amateur radio operator's license issued to you.**
- If you've already passed a test: The original (**and one copy**) of any document that you will use to prove you've already passed a test element. These documents may include:
 - An unexpired Certificate of Successful Completion of Exam (CSCE) indicating the credit(s) earned indicating the credit(s) earned.
 - Pre March 21, 1987 Technician license (this provides credit for the Element 3 (General) exam).



Robert, N8RLG
PCARS VE Team Liaison

Happy Birthday PCARS Members

PCARS members having a birthday in March:

W8KNO	Joe Wehner
K8SRR	Steve Randlett
KD8NLQ	Richard Preisendorfer
AE8YL	Erica Pelz
W8CYN	Jim Shoemaker
KJ4MPN	Herschell Taylor, Jr.
KD8JRF	Rod Stickle
KB3GXB	Jennifer Andrews

WX1DER	Daryl Stout
KC8RFT	Denzil Linton
K8QF	Russ Conklin
AB8YN	Ray Czech
KD8FDK	Rich Taushanoff
WB8LCD	Tom Sly
KD8CGF	Art Dembinski

PCARS Yahoo Site

Members are reminded that PCARS has a Yahoo Group dedicated to PCARS information. It's a great site to sign up for and get on the mailing list. Check out the PCARS Yahoo Group at:

<http://groups.yahoo.com/group/PCARS/>



Paper Chase

N9MW
EDWIN S. TOAL
W8471 HWY 39
BLANCHARDVILLE WI 53516
U.S.A.

HONOR ROLL DXCC MDXC FLARC ARRL CWRA

Green County

STATION	DATE	GMT	MHZ	MODE	RST
W8KNO	4/17/2014	1927	14.2	450	59
	1953		7.2	LSB	59

☐ PSE QSL ☒ QSL TNX 73 *SP* XYL - SHARON W8RNF

GB4 SPD
Saint Patrick's Day
SPECIAL EVENT STATION
 Operators
GI0THZ HARRY
GI3 DZE IAN
NORTHERN IRELAND

WAB J18 ANTRIM
 CQ ZONE 14
 ITU ZONE 27

VIA RSGB

To Radio Station *W8KNO*

Confirming our QSO

DAY	MONTH	YEAR	GMT	MHz	MODE	RST
<i>17</i>	<i>3</i>	<i>04</i>	<i>1926</i>	<i>14</i>	<i>J3E</i>	<i>5/9</i>

February, the color was RED. March the color is GREEN. If you are a county hunter there are two counties named GREEN. You find them in Kentucky and Wisconsin. If however you will accept a spelling of GREENE, you will find them in Alabama, Arkansas, Georgia, Illinois, Indiana, Iowa, Mississippi, Missouri, New York, North Carolina, Ohio, Pennsylvania, Tennessee and Virginia. Good hunting!

If you are thinking why green, all you have to do is think March 17th, St. Patrick's Day. Though there are no published special events that I could find for St. Patrick's Day, there are usually a couple stations on from Ireland. GB4SPD is one I have heard for many years.



If you are not interested in working any of the stations, you may want to do what I like to do. I like to go to Chicago for the dyeing of the river green. You can leave Cleveland at 1 a.m. on Megabus arriving in Chicago at 6:15 a.m.. The river is dyed at 10 a.m. and the parade starts at noon. In between the activities, you can go by Millennium Park and you may be accosted by the most attractive leprechauns you have ever seen.

Millennium Park is also the home of the Cloud Gate. If you look across the street, you will see the beginning/ending of Route 66.

You can catch the bus back at 10:45 p.m. arriving in Cleveland at 6:15 a.m. If I don't hear you on the air, I'll see you on the bus.

73,
Joe, W8KNO

Spring Forward, Fall Back

Yes folks, it's that time of year once again. As that we will be going to Daylight Saving Time (EDT) we will be springing ahead one hour. This will happen at 2:00 am Sunday, March 9, 2014. Don't forget, or you will be late for everything until you "spring forward."

Remember UTC time does not change, we change. So, once EDT starts, we will be 4 hours behind UTC.

So: 1700 (5 pm) UTC will be 1300 (2 pm) EDT.



Contest Calendar

March 2014	
ARRL Inter. DX Contest, SSB	0000Z, Mar 1 to 2400Z, Mar 2
Idaho QSO Party	1900Z, Mar 8 to 1900Z, Mar 9
North American Sprint, RTTY	0000Z-0400Z, Mar 9
Wisconsin QSO Party	1800Z, Mar 9 to 0100Z, Mar 10
Virginia QSO Party	1400Z, Mar 15 to 0200Z, Mar 16 and 1200Z-2400Z, Mar 16
North American Sprint, SSB	0000Z-0400Z, Mar 16
Oklahoma QSO Party	1300Z, Mar 22 to 0100Z, Mar 23 and 1300Z-1900Z, Mar 23
Louisiana QSO Party	1500Z, Mar 22 to 0300Z, Mar 23
CQ WW WPX Contest, SSB	0000Z, Mar 29 to 2400Z, Mar 30

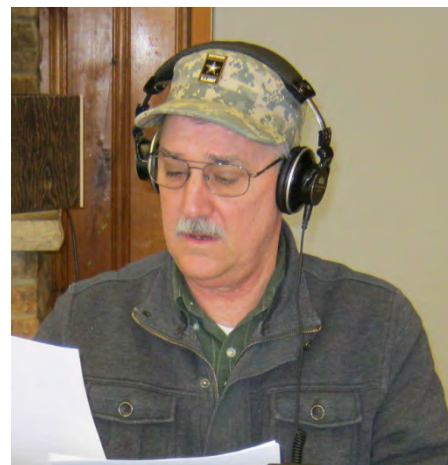
Google the Contest Name - Read the Rules & Have Fun. YES - There are MANY More Contests out there - Check the Internet

Digital Special Interest Group

Well folks, February's Digital Special Interest Group meeting was a total success! Jim, KD8RJV is now up and running digitally on VHF with, I might add, a pretty spectacular Go-Kit housed in a very rugged Gator case. We were also able to identify and come up with a fix for Sandy, KD8JCY's digital setup using her FT-900.

The goal of the Digital Special Interest Group is not only to present topics on digital communications but also to provide help for those having hardware or software problems with their setups. Regardless of what topic is scheduled for a meeting we will always make time for those who have questions or problems so make sure you put the first Tuesday of every month at 7:00 PM at the PCARS club site on your calendar for the Digital Special Interest Group meeting.

The topic for the March meeting will be setting up and using your Linksys WRT-54G series router in a High Speed Multi Mode (HSMM) network. Steve, K8SRR will be our presenter and has done a lot of work with HSMM networks. If time permits he'll also cover using the Raspberry Pi for HSMM networking. Bring your routers and Steve will be able to assist in getting you up and running.



73,
Rick, K8CAV
Digital SIG Moderator

Battery Power for Portable Ops - Part 1

The world of ham radio seems as large as the Sun and as expansive as the Universe. When I got my license in 1994, some things were so much different than they are now when it comes to technology. Transceivers that were affordable to me still had tubes, digital equipment was mostly mechanical and expensive, portable operations were difficult. By 1997, the quest of life had taken me away from ham radio.

More than eleven years later, I unpacked the old Yaesu FT-101E, threw up the old dipole that had fallen years earlier, tuned it all up and it still worked. My first contact was to Greece! I checked out the 2 meter antenna that I put up in 1996 and it still works too! Now I am hooked on radio and nothing will take me away again.

Since then, I've learned about contesting, digital modes, DIY circuit boards, building stuff, and too many other things to list. I've even found a fantastic group of people in the PCARS club. Recently, I've been trying to get better at portable operations.

Shortly before Ohio State Parks On The Air 2013, I was fortunate enough to purchase an Elecraft KX3 ultra portable radio. OSPOTA was a disaster for me in many ways, but the hardest struggle was portable power. My logging computer was m a power hog and after about an hour, I was down to 3 watts and paper logging. The KX3 likes to have 12.6 volts or higher to work at 10 watts. A good learning experience, but frustrating. Knowing that I had shot my mouth off about Freeze Your Acorns Off and how I was planning on taking the plaque, I had better find a way to make this work better.

My lead acid gel cell batteries let me down. Even a fully charged battery pulls down to an unacceptable level very quickly. I pondered using the N8XJK battery booster I have, but that thing is noisy on the low bands. I was too dumb to buy the one that has RF sniffing. Those turn off during receive. I have lots of nickel-metal hydride cells and put them together, but was unhappy with the reliability. They lose a percentage of their charge over time, and don't like being cold. Too low of capacity for a portable operation.

So I started researching lithium batteries. Fully charged lithium polymer cells run at about 4.2v each to 2.7v discharged. Three of them in series gives 12.6 to 8.1 volts. Four of them are at 16.8 to 10.8 volts. No acceptable voltage range for ham gear. Plus, they can explode if mishandled. No thanks. End of conversation when it comes to lithium polymer batteries.

Lithium Iron Phosphate, or LiFePo4. Fully charged LiFePo4 cells are 3.2 volts nominal. Four of them in series equals 12.8 volts. Perfect. And they won't explode in your face. They are very safe and environmentally friendly. These are the same kind of batteries they use in electric vehicles.



So I bought one. A 15 amp hour 12.8v battery from Bioenno Power, www.bioennopower.com. After charging it up, I took 17 amp hours out of this battery and it was still holding at 12.6 volts. Very impressive! LiFePo4 batteries have a flat discharge voltage rate. Unlike lead acid batteries, these stay at their rated voltage for about 90 per cent of discharge. This is the solution to the problems I've been having.

I was fascinated with this battery, but it was expensive. \$150 bucks with a charger, for a measly 15 amp hours. That's ten dollars per amp hour! A 15 amp hour gel cell goes for \$36.00.

Let's compare the two types. Assuming we treat our batteries properly.

- A lead acid battery has a nominal lifetime of 200 cycles. A LiFePo4 battery has a nominal lifetime of 2,000 cycles. After that they still hold about 85% capacity.
- A lead acid battery loses a percentage of its charge each day. A LiFePo4 battery, not so much. Manufacturers recommend you check your battery every six months if stored for long periods.
- A lead acid battery's voltage drops, depending on load, possibly requiring a voltage booster. LiFePo4 batteries maintain 13.2 to 12.8 volts for 90% of discharge cycle.
- Gel type batteries can be damaged by too heavy a load. LiFePo4's can handle 3 times their amp hour rating continuously and up to ten times their rating intermittently without damage.
- Lead acid batteries are bad for the environment. LiFePo4's are environmentally friendly.
- Lead acid batteries lose efficiency in cold weather, 64% capacity at 30 degrees Fahrenheit. LiFePo4's are good from -22 to 131 degrees F.
- LiFePo4 batteries weigh a little more than half the weight of a lead acid battery.

Now let's do the math on the cost.

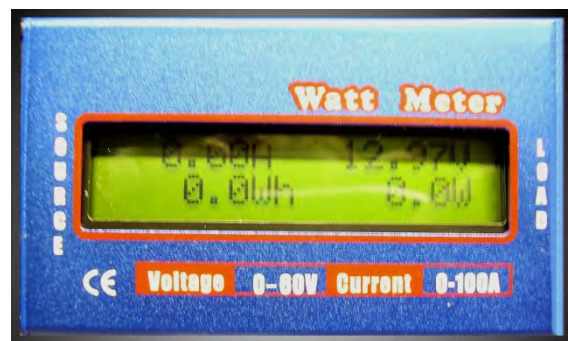
- Assuming 200 charge/discharge cycles from our \$36 dollar 15ah lead acid battery, that's 3,000 amp hours over its lifetime, or \$.012 per AH. You would have to buy ten lead acid batteries to equal the life expectancy of a LiFePo4, raising the cost to \$360.00,
- Our \$150.00 LiFePo4 can withstand a minimum of 2,000 cycles. That's 30,000 amp hours over its lifetime, or \$.005 per AH. And no expensive battery booster.

It would take 5-1/2 years to cycle a LiFePo4 battery 2,000 times, if charged and discharged once a day.

So you pay a little more up front but save in the long run. Oh, and did I mention you don't need a \$150 dollar voltage booster?

Well, I don't think I took the plaque at FYAO this year but it was a great test of my battery. I worked for 5-1/2 hours and got 146 contacts, with lots of CQ'ing. At the end of the day, the Elecraft KX3 was still happy putting out 10 watts, I used 2.75 amp hours out of the battery during that time, and it was still measuring at 13.1 volts. I've estimated that this battery would run for a 30 hour QRP contest at 10 watts. That's certainly longer than I would last!

If you decide you need one of these batteries, make sure you get the special charger as well. The individual cells require constant balancing, and that's what the special charger does. I've found two types of batteries out there. The type that I have has a Battery Management System, or BMS, built in to the battery. Another type has a small plug on the battery for the charger which has the BMS built into the charger. I prefer the type built in to the battery because they have protective circuitry on board. Short circuit protection, over charge/discharge protection, and the balancing circuitry.



One other thing I should mention. Remember the LiFePo4 battery holds a steady voltage for 90% of their discharge cycle. It's impossible to determine the state of charge by reading the voltage of the battery, as you can with other types of battery. I use a cumulative amp hour meter to measure what energy I have actually used out of the battery. This way I know what's left in the battery.

Watch for the second part of this article in next month's issue of the Radiogram. I will describe how I built a couple LiFePo4 batteries out of individual cells for about \$5.00 per amp hour

John, KB8UHN

Bus Trip to Hamvention® 2014



I'll say it again - The best deal at the Dayton Hamvention® is in Akron, Ohio! On Saturday, May 17th, the **Pioneer Amateur Radio Fellowship** (PARF) is again offering a day trip to the Dayton Hamvention®. Just \$65 gets you a trip down, and back, and your Hamvention® ticket as well! Bus leaves at 5:30 AM, from the Akron Baptist Temple, and will pull up to the Hara around 9:00 AM. After a fun-filled day at the Hamvention®, we stop at the Golden Corral in Columbus for dinner, then arrive back in Akron shortly after dark. For more information, contact Joy Spencer KA8TDF at KA8TDF@arrl.net or call 330-745-5115.

73,
John, KD8MQ

Editor's Note: Also, see the flier from PARF toward the end of this newsletter

Hamfest Calendar

04/12/2014 - Cuyahoga Falls Amateur Radio Club (CFARC) - 60th Annual Hamfest, Electronics & Computer Show - Location: Emido and Sons Party Center - 48 E. Bath Rd. - Cuyahoga Falls, OH - Website: <http://www.cfarc.org> - Contact: Ted Sarah W8TTS - Phone: 234-206-0270 - Email: hamfest2014@cfarc.org

05/16/2014 - Toledo Mobile Radio Association 59th Annual Hamfest - Owens Community College - 30335 Oregon Rd. - Perrysburg, OH 43551 - see the web site for contact information: www.tnrahamradio.org

May 16-18th 2014 - Dayton Hamvention® 2014 - Location: Hara Arena - 1001 Shiloh Springs Road - Dayton, OH 45415 - Website: <http://www.hamvention.org> - Sponsor: Dayton ARA

Linux SIG

April 30th is the next Linux for Hams SIG which is held at the PCARS club site in Ravenna. Starting at 7:00 pm - Topic: Discussion - Hardware: Raspberry Pi - portability, and homegrown programming/Python. Hope to see you there.



73,
Terry, KB8AMZ

Hello from Korea (that will get your attention)

Most of PCARS probably doesn't remember me, but Tom Sly found me on LinkedIn and dropped me a message. Then Parky invited me to do an article for the newsletter. I used to be a member about six years ago before I went to college in Alaska. I haven't been on the amateur bands since I left, but I want to talk about what I've been up to and how PCARS helped me get here.



**Tuning the Radio's at FT. Leonard
Wood Missouri**

I got my tech license in High School to get extra credit for a physics class. It sparked an interest so I got my general license and set up my station. I was especially interested in antennas and I built quite a few of my own with the help of a few folks in PCARS. I still have my equipment, but I ran out of time for the majority of my hobbies when I went to college. Studying electrical engineering and pursuing an army commission through the Reserve Officer Training Course (ROTC) didn't leave much time for anything.

My junior year, I got involved in the Alaska Space Grant Program. They were designing and building a small cube-satellite and what bands do you figure the communications were set in? Primary communications was in the 23 cm amateur band and secondary communications was in 70 cm band. All the electrical students working the project had to get licensed except for me! I was working on the camera portion of the system, but one of the graduate students asked for my help modeling the 70 cm antenna which used a similar design I'd seen in amateur RDF antenna's with a metal tape measure as the element. The ground plane was just the 10 cm x 10 cm chassis so we were interested in what the directional pattern would look like and what kind of gain we could expect out of it. So I popped the design into the antenna modeling software I'd used back in high school and presented the results to the grad student and a professor.

My connections with that professor helped get me an internship at NASA's Johnson Space Center the next summer. Going down from Alaska to Houston Texas was quite a change. It was humid and very hot and I felt like I was going to melt. I went back to Fairbanks and the next semester I met my wife, Sally, who's studying Petroleum Engineering at the University of Alaska Fairbanks (UAF). I was the president of the UAF branch of the Institute of Electrical and Electronics Engineers (IEEE) and she was the vice-president of the UAF branch of American Society of Petroleum Engineers (ASPE). After we had been dating for a while she told me one of the reasons she decided to go out with me was because I was a NASA intern. Also her great-grandfather, grandfather, and father were electrical engineers. So thank you PCARS for getting me interested in electrical engineering.

I graduated in December 2012 and commissioned into the active duty Army. I requested to go into the Signal branch, but instead I got sent to the Chemical Branch. So I attended the Chemical Officer Basic Course at FT. Leonard Wood Missouri and now I am in the 2nd Infantry Division serving in South Korea. My next assignment will be



Me and my wife, Sally, in traditional Korean clothes

with the 25th Infantry Division back in Alaska where my wife is still going to school. I'll go there at the end of July.

So that's where I am and how PCARS helped me get here. I can't say when the next time I'll be in Ohio, but I want to let everyone know I haven't forgotten about you and all the help you gave me while I was in Ohio.

Thanks and 73,

Joe, KD8EOZ

Editor's Note: Keep your eyes open - this Summer Joe is suppose to be back in town for a short vacation and hopefully he'll make a stop to see his PCARS friends.



Dayton Hamvention® 2014

Yes, it's only March, but this is important stuff you have to plan ahead for. Okay - Here I go again on my yearly article about going to the Dayton Hamvention®. Yes, gas prices are still up, yes, it takes more than a few hours to get there, yes I know you're busy.... **BUT** Just think of it, hams from around the world can only *dream* about going to Dayton, and for us, it's practically in our back yard.



Even if you only go for one day - **GO!!!!** Even if you don't spend any money - **GO!!!!** Visit all the dealers, see what's new and what's coming out soon. Check out the great ARRL display area and meet some of the ARRL HQ personnel. There are plenty of *free* forums. Just to be there and walk around seeing all the ham gear and hams from around the world is worth the trip.

Who knows, you just may bump into a foreign ham that you made a DX contact with. The outdoor flea market is really something to see - jammed packed with just about everything you can imagine. This is one heck of a flea market. Chances are you will never see a larger one! Many bargains to be had, and don't hesitate to haggle the price a bit lower.

Take a camera and take pictures of everything and everybody!

So, check it out - Friday the 16th, Saturday the 17th and Sunday the 18th in May - the **ONLY** place to be is at the Dayton Hamvention®.

Parky, KB8UUZ



PCARS Patches & Stickers



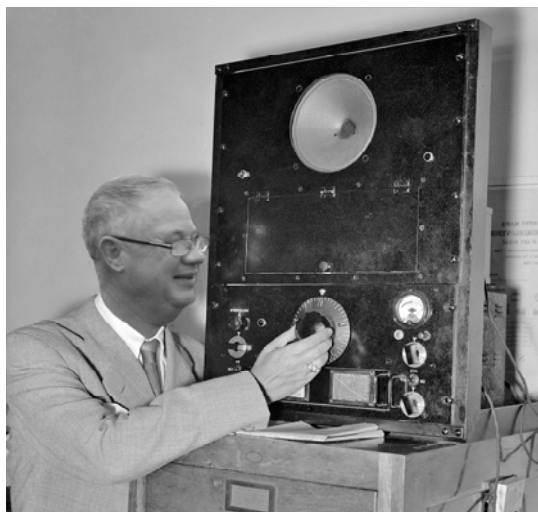
New PCARS logo patches (iron on) & stickers (stick on) are now available!! Put the patch on your hat, your shirt, your jacket and show off that PCARS logo!!

The patch is about 3". The embroidery on the white patch is in Red, Black and Blue. Cost for a patch is only \$2.00 each and can be obtained at any PCARS meeting. There are 2 types of stickers available - a 4" x 6" oval and a 3" x 10" bumper sticker. Stickers are \$1 each. Show your pride in PCARS - Wear a patch, use the stickers! See the club Treasurer: George, K3GP or e-mail him at: K3GP@portcars.org



PCARS Thursday Net Control

Thank you all for helping with this! Anytime you are unable to take the net, please give me as much advance warning as possible!



March	
6	KD8FDK
13	NR8W
20	KB8UUZ
27	N8QE

April	
3	NR8W
10	KB8UUZ
17	N8RLG
24	WB8LCD

May	
1	KC8PD
8	KB8UHN
15	WB8LCD
22	NR8W
29	N8QE

June	
5	KD8FDK
12	KB8UUZ
19	WB8LCD
26	K8IV

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: WB8LCD@portcars.org Everyone who is a club member is welcome to have a turn!

Swap-N-Shop

FOR SALE: Heathkit SB200 Amp - No mods, all original, good 2400V PS. 572 tubes built in USA. Meter good \$345 Pick up only

FOR SALE: Palstar antenna tuner Model AT1KP - Excellent condition: \$160 pick up only

Contact Paul, NC8T at NC8T@hotmail.com or call 330-704-9106 [06/02/14]

FOR SALE: Icom 756 Pro III includes unused hand mic, pwr cable, original boxes, dust cover, operator manual & service manual on CD \$1650

FOR SALE: Icom 756 Pro II includes hand mic, original manual, manuals on CD. \$1300

FOR SALE: RigBlaster Plug-n-Play includes 8 pin adapter cable for Icom. \$75

FOR SALE: RigBlaster Pro Includes cable for Icom. \$90

FOR SALE: Heil Goldline GM5 mic w/windscreen, **Heil SM-1** shock mount, **Heil HB-1** articulating boom; mic cable for Icom, AD-1-I. \$150

FOR SALE: Heil headset adapter cable, Heil PN AD-1iC, for Proset to Icom. \$12

FOR SALE: TenTec RF speech processor, model 715. \$150

FOR SALE: MFJ-1251 Universal Microphone Adapter changes pin-outs to allow different mics to be used with radio. \$14

Contact Rick, K8GI at K8GI@portcars.org [05/02/14]

FOR SALE: Icom ID-880H D-Star transceiver (UHF/VHF), \$300.

Contact John, KC8KYW at KC8KYW@portcars.org or call 330 734-7888 [05/02/14]

FOR SALE: Kenwood TS-430 HF rig with FM Board and CW 500 Hz Filter installed. It comes with the Kenwood Microphone. Rig is 100% functional. Some wear on case. E-mail me if you want pictures. \$325.00

Contact John, KD8MQ at KD8MQ@portcars.org or call: 330-936-5021 [05/02/14]

FOR SALE: Heathkit SB-1000 160-10 Meter amp, one 3-500Z, 120/240 VAC, 750W CW, 1KW PEP. \$800.00 Amp & tube listed below \$1000

FOR SALE: EIMAC 3-500Z military specification tube still in original packaging. \$300

FOR SALE: 8877 RF Deck for 144 MHz - Commercial build - W6PO design. Built for the NWS to be used at 1000 Watts FM on a 24/7/365 duty cycle basis. It is capable of 1500 Watts SSB. This is a complete RF Deck only, no tube or power supply included. \$500.00

FOR SALE: ICOM IC-718 HF Transceiver 160-10 Meters 100 Watts - w/ UT-106 Digital Signal Processing unit, IC-FL52A 500 Hz CW Filter, IC-CR338 High Stability Crystal, Voice Synthesizer, HM-36 hand microphone, power cord, operator's manual, Nifty Mini-Manual and sales brochure. Has the MARS mod (Full TX & RX 1.8-30 MHz) and therefore will only be sold to a General Class or higher licensee. \$550.00

FOR SALE: GE CL01A400TJ Contactor 4 poles rated 25 A @ 600 V, 120 Volt Coil \$25.00 (2 Available)

FOR SALE: GE CL01D310TD Contactor 4 poles rated 25 A @ 600V, 24 Volt Coil \$30.00 (2 Available)

FOR SALE: GE CL25A300T Contactor 4 poles rated 32 A @ 600 V, 120 Volt Coil \$35.00 (2 Available)

FOR SALE: 1/4" Plate Glass for desk or table top, Great for radio bench measures 42" x 68" cost \$152.00 Asking \$40.00

FOR SALE: I also have a small supply of **connectors** for 1/2" Superflex, 1/2" Helix and 7/8" Helix . Contact me with your needs.

Contact James, KD8VT at KD8VT@portcars.org or call: 330-206-4909 [05/02/14]

FOR SALE: DAIWA Model PS-120MIIa PS \$40

FOR SALE: Heathkit Model IM-11 VTVM \$40

FOR SALE: ASTATIC Model D-104 Microphone w/ TUG8 Stands (Lollypop) 1ea Excellent \$70, 3ea good \$40

FOR SALE: ICOM Model IC-V80 2Mtr FM HH w/ Extra Battery and Charger \$90

FOR SALE: Nye Viking Model B V A, Antenna Tuner \$425

FOR SALE: TRIPLET Model 630 VOM \$45

FOR SALE: MFJ Model MFJ-250 50 ohm oil dummy load \$40

FOR SALE: MFJ Model MFJ407B Electronic Keyer \$40

FOR SALE: Heil Model HM10 4-5 Microphone with Stand \$100

FOR SALE: Standard C1208DA 2 mtr FM Mobile \$200

FOR SALE: MFJ-1702C, 2 Pos Coax Switch \$20

FOR SALE: Radio Shack Model 22-223 VOM \$10

FOR SALE: Astron Model RS-12 12 Amp Power Supply \$45

FOR SALE: Bencher BY-2 Paddle, Chrome NEW \$75

FOR SALE: Straight Key Brass \$25

FOR SALE: ASTATIC Model 10-D w/G Stand \$50

FOR SALE: Electro Voice Model 664 \$50

FOR SALE: 2ea- Electro Voice Model 638 \$50

FOR SALE: Shure Microphone and stand \$20

FOR SALE: W1FFL Ladder-LOC \$10

FOR SALE: Radio Works Carolina Windom 10-80 meters \$50

FOR SALE: Radio Works 1/2 Square \$45

FOR SALE: Alpha-Delta Sloper 40-80-160 \$50

FOR SALE: Kenwood TL-922 Linear \$1200

FOR SALE: MFJ-989C Antenna Tuner \$150

FOR SALE: MFJ-281 ClearTone Speaker \$10

FOR SALE: Soldering Iron 25 Watt Variable \$20

FOR SALE: 2 Large soldering irons 1-150W and 1 UNK \$20 EA

If anyone owns one of these please contact me, I have spare parts for them.

Yaesu FT-2200, FT-1000D, FT-1000-MP, Icom IC-756 PRO II, Alpha 89 and 9500 Amps

All equipment is in top shape.

Contact Al, AB8AA at ab8aa@portcars.org or call 330-207-3296 [06/02/14]

Editor's Note: Ads for PCARS members run for 3 months then are dropped from the listing UNLESS you send it in again. Each ad will have an expiration date that looks like: [05/02/14]. This will help keep the listings current.



EmComm

It's hard to believe when snow continues to fall and the temperatures are dipping into single digits but spring and the severe weather/tornado season are right around the corner.



The annual statewide tornado drill will be held at 0950 hours on Wednesday, March 5th. It is part of the nationwide Severe Weather Awareness Week (March 2-8) <http://www.weathersafety.ohio.gov/>. Locally, communities will be testing their tornado warning sirens as part of the drill.

Mike, KD8FLZ, ARES[®] of Portage County EC, has announced that ARES[®] will be holding a Skywarn net in conjunction with the tornado drill. The net will go live at 0930 hours on the 146.895 repeater with Russ, NR8W, scheduled as the net control station. All hams in the area are invited to check in and then a few minutes after 0950 the NCS will poll the net to determine who was able to hear a local tornado siren.

Please take some time and check in to the net to assist with this important test.

Also, don't forget that the Cleveland Office of the National Weather Service has its Skywarn training program underway. As of the date that this was being written the Portage County class had not been scheduled but you can check for updates as well as the dates and times of other sessions in the area at the NWS web site, http://www.weather.gov/cle/SKYWARN_schedule.

A last reminder: the 2014 edition of the **Introduction to Emergency Communications** class (ARRL EC-001) will be offered on four Saturdays starting on March 8th at the Center of Hope. As in the past the class will be free although there is a \$15.00 fee to the ARRL in order to take the exam. Walk-in registrations will be accepted.

In addition, at 1900 hours on Wednesday, March 5th, ARES[®] of Portage County will be offering its **Basic Skills for Public Service Communications** class, also at the Center of Hope. It is free and is available to all area hams and serves as a great introduction to special event communications.

The class will be preceded by an ARES[®] of Portage County meeting that will begin at 1830 hours. EC Mike, KD8FLZ, is encouraging all local ARES[®] members to attend this meeting. ARES[®] of Portage County members are also reminded that they are now welcome to check in the EMA Communications Unit nets which are held every other Thursday at 1900 hours on the K8IV repeater.

There will be an Ohio Section ARES[®] leadership meeting on Saturday, March 15th, at the Ohio EMA in Columbus. Contact SEC Matt Welch, W8DEC, for additional information.

Watch for announcements as volunteers are recruited for upcoming special events. We have a busy year ahead of us.



73,

Jim, KC8PD/AAR5AI

**Radio Officer, Portage County OHS/EM Communications Unit/RACES
DEC, ARES[®] District Five**

FYAO 2014 - KB8UHN is the Winner

Well the 2014 Freeze Your Acorns Off PCARS QRP event is now history. And by the turnout, I would say, it was a success. It seemed to me that everyone that showed up had fun. If I missed greeting someone, I apologize since I am not used to hosting this event. I'll try to do better next time.

If you went away hungry then it was your choice since there was more than enough food for twice the number of people. The chili was excellent as was the Sloppy Joe. The Mac 'n Cheese was great and those who had a sausage sandwich or brat were in for a treat. I believe we even had a stew that people were raving about. There were other dishes that hit the spot for many and compliments were being made about all the great food.

In regards to the actual radio operation, we had eight logs turned. **KB8UHN; KD8MQ (KD8MQ & WI8T); KD8BBK; KC8UNR (KC8UNR, KD8ELY, KD8SKL, NR8W); N3JJT; WB8LCD (WB8LCD & WB9LBI); WB2DFC; and K8CAV.**

The big winner this year is **John - KB8UHN**. Congratulations John for a great performance. John's total was 2,116 pts. But it was a close race since Tony - KD8BBK came in at 2,110 and the team of KD8MQ and WI8T came in with 2,014 points. Just a few contacts made the difference. Scoring is as follows:



1	KB8UHN	2,116
2	KD8BBK	2,110
3	KD8MQ	2,014
4	N3JJT	782

5	KC8UNR	742
6	WB8LCD	525
7	WB2DFC	234
8	K8CAV	122



For those of you who remember a different score on your sheet, I had to go back through and correct some of the scores since the Station Entry Form and the Rules did not agree. I chose to follow the Rules, which improved some of the scores but did not alter the outcome as to who scored the most points. We will make sure that Rules and the Entry Form for 2015 will agree. The biggest miss by those scoring their operation was not multiplying the number of guests that visited your station by 2.

We had over 50 people sign in or visit the shelter. Ther list of those that signed in at FYAO 2014 are: W8PT, WB8LCD, KD8ELY, KD8SKL, KC8UNR, K8CAV, KD8WCK, KD8BBK, KC8RJR, N3JJT, WI8T, KD8MQ, WD8MIU, KD8GGZ, N8GLK, N8QE, WB2DFC, KD8SIZ, WA8OHK, KB8UUZ, NR8W, WD8CVH, KB3OQV, N8HUC, KD8VT, KB3GXB, WD8DAU, Karen, KD8EPA, KD8EPG, AC8NT, KB8UHN, WB9LBI, KB8TUUY, Chris Ryan, W8IFM, KB8AMZ, N8KBX, AE8YL, KD8IUA, KD8CGF, WA8GCF, KB8CLH, WD0HBU, KD8OKK, Vincent Cibella, Susan Cibella, KC8FQV.

(We know we had people visit that did not see the sign in sheet.)

I want to thank each and every one of you who took time out of your day to come out and join our intrepid group. You put up with the snow, ice and cold to come and join with your fellow HAMS to have a fun day enjoying the greatest hobby in the world. I hope to see you all next February for the 10th ANNUAL F.Y.A.O.

Until then, a heart felt 73 to all.

Chuck, W8PT

Hello Norm !



Say "Hello" to Norm Into, K8NI. Norm moved from Chagrin Falls to the Youngstown area a number of years ago, and found PCARS from there.

He came down to the club site on Tuesday, February 11th for the QRP / CW Special Interest Group (SIG) where a few of us had a very nice time getting to know him and his ham radio interests.

I'm sure Norm will bring a lot of experience and expertise to the club, so be sure to welcome him to PCARS!

Tom, WB8LCD

More on Norm - from his info on QRZ.com:

My Class A ham license, W9NTH, and my 1st class commercial phone licenses were issued in April 1945, my senior year in high school. I went into Navy flight training that June and was commissioned in the regular Navy. Served in Fighter and Attack (carrier) squadrons as a pilot and as an Electronics Officer.

After gaining a B.S. in Engineering from Yale worked for RCA in New Jersey for 11 years, then several other firms, retiring in 1995. About half the members of our South Jersey Radio Ass'n were RCA. Learned a great deal from my seniors there. RCA was the number 1 electronics company then, and a great place to work. I was very active in SJRA and was club president in 1965.

Got my Extra in 1954, before there were any band privileges. Moved to Conn. in 1968, where I was W1CCZ / W1RN and involved in starting several repeaters. Some of the members of our club, Talcott Mountain, were ARRL staff, including Dave, K1ZZ.

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

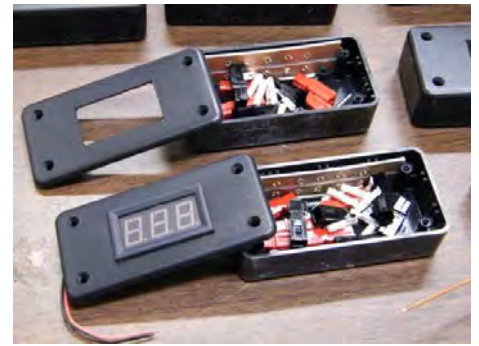
Since retiring and moving to Youngstown, OH, in 1996, I've "returned to my roots", building a variety of tube and contemporary gear. Of course, I still use my "appliances", mostly Icom and Collins. I'm a new member of the Mahoning Valley Club (MVRA) and have enjoyed meeting and making some friends here.

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

My first name, and the name on my license (and Social Security card) is "Albert" and I'm sometimes surprised when a CW contact (using QRZ.com, of course) will greet me by that name, but I've always gone by my middle name, "Norm". I'm hoping to meet you on 40 CW, or any other band - or by email - and you can just call me OM, if you like.

Powerpole® Weekend Project

On Saturday, February 22nd, we met at the PCARS club site to construct a Powerpole® distribution box project. The project was spear headed by Zeb, KD8WZS, with Tom, WB8LCD for support. After several iterations a final configuration was agreed upon and we started the project of kitting them up. We wanted this to be a relatively easy kit to build so that most would be able to complete the unit and test it out before leaving.



After all the parts were acquired (and a special thanks to Brett at the Radio Shack store on route 59 by Walmart, who came up with the “out of stock” project boxes we needed), we started by rough cutting the hole for the meter, final sizing to be done by the builder with a file. Next we indexed and drilled the side panel of the box to accommodate the Powerpole® connectors – this also drilled the piece of circuit board used as the bus board – assuring that everything was drilled in line for easy assembly. After that counting out the Powerpole® parts, screws and a meter completed each kit.

At the build, each builder needed to file out the mounting hole for the meter, to get a snug friction fit. Copper wire was cut into short lengths and installed in the Powerpole® connectors. After the Powerpole® connectors were put in place on the side of the box, the copper wire was soldered to the bus and excess wire snipped away. The meter was then soldered onto the bus to complete the wiring. Tops were put on the boxes and everyone tested their unit with WB2DFC's portable 12 v battery. Everyone who built the project left with a working unit, and a useful piece or hardware for the shack.

And hey, don't tell me girls can't build! The first unit finished and working was put together by Erica, AE8YL.

If anyone else in the club would like to put one together, let me know and I can make up a few more kits for you.



Tom, WB8LCD



Field Day 2014

Here is a list of the Field Day Positions currently filled.

Chairman	James, KD8VT
Vice Chairman	Chuck, W8PT
20 Meter Station Capt.	Erica, AE8YL
40 Meter Station Capt.	Ed, K8IV
CW Station Capt.	Dave, WB2DFC
GOTA Station Capt.	Tom, WB8LCD
6 Meter Station Capt.	Errol, KC8RJR

Power Team Capt.	Karen, N8HUC
Safety Officer	Russ, NR8W
IT Team Capt.	Zeb, KD8WZS
Finance Officer	George, K3GP
Public Information Officer	Tony, WA8AR
PIO Table	Parky, KB8UUZ
Field Day Chef	Chef Robert, N8RLG

We still need a Flex Station Captain and a camper or motor home to house this station. If there is someone in our club who has a camper or motor home that we could use for this station please let me know. If not then I will attempt to secure the free use of one from a local RV dealership. These guys like free advertising and we might have to hang a banner on the side of it stating that its use was donated by XYZ- RV Dealership.



As for the dinner menu - it is as follows;



MEXICAN FARE

Steak & Chicken Fajitas
Sopapillas
Fresh Salsa & Chips
Beverages (Iced Tea, Soda)

The next meeting will be the Tuesday March 11, 2014 which is the day after the March club meeting. We will meet at the club site at 1900 hours. The meeting should take less than an hour. The focus of this meeting will be for each of the Team Captains to state what resources they have and list any additional resources needed to successfully deploy their assigned station for Antenna Day (May 10) and Field Day (June 28 & 29).

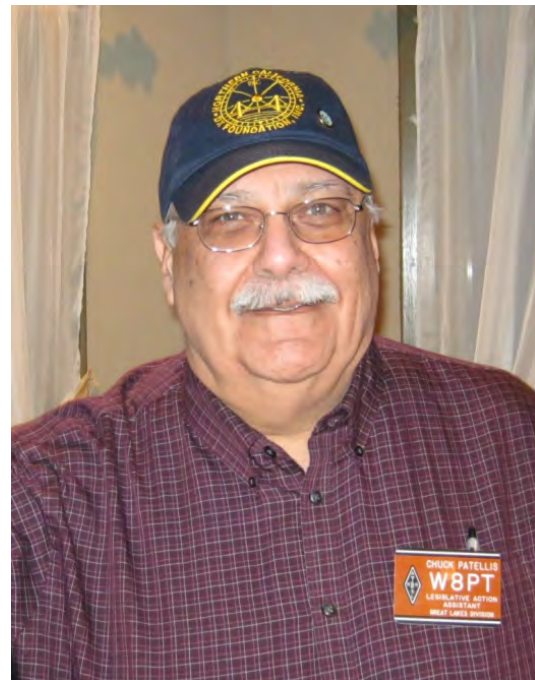
Anyone wanting to Fill the Flex Station Captain position or volunteer to assist any of our Station Captains please join us for the meeting.

73,
James, KD8VT

Charlie the Tuner's HF High-Lites

It looks as if we are in for more cold WX before it finally starts to break up hopefully towards the end of March. This has been a long winter for many of us. There are those who like the snow and cold WX. It takes all kinds. Anyway, it does give us the excuse, if one is needed, to stay inside and work DX. Playing radio is a GREAT way to spend the winter months. Bears hibernate – HAMS operate. OK – poet I am not, but you get the picture.

There are some very interesting DX operations that will be taking place in the next 2-3 months. If you need south Pacific DX entities, take a look at the paragraph titled, Down Under – Pacific Tour. And if you want to try and catch a guy in a 4X4, there will be a HAM that will be touring the Morocco Desert and the Atlas Mountains in a Jeep, just for the fun of it. So check out CN-Morocco listed below. Those of you looking to work Annobon Island, it will be still on the air until March 8, so you have some time yet. Elmo will also try to get to Bloko Island after he leaves Annobon.



I want to thank the following for the forecast reports for this month and beyond. Without them and their timely information, it would be much harder to know what is happening on the bands. So a BIG thank-you to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn Packet Cluster Network (especially Tedd Mirgliotta – KB8NW) for the following DX and IOTA information.

And as always, this report could contain “Pirate/SLIM” operations or busted call signs. Please do yourself a favor and adhere to the old adage of “Work First Worry Later” (WFWL).

3C0 & 3C4, ANNOBON ISLAND AND EQUATORIAL GUINEA (Update). Elmo, EA5BYP, is now active as 3C0BYP (earlier than expected) from Annobon Island (AF-039) until March 8th. Gabriel, OD5NJ, (Elmo's pilot station) informed OPDX that Elmo started earlier due to a transportation issue. Activity will be on SSB, RTTY and some CW. There is a possibility of him making a trip to Bioko Island (AF-010), Equatorial Guinea, to be active as 3C4BYP, after his operation on Annobon. QSL via his home call sign (see QRZ.com).

3D2, FIJI. Wes, ZL3TE, will be active as 3D2SE from Viti Levu (OC-016) between April 11-14th. His main activity will be in the Japan International DX CW Contest (April 12-13th). Operations outside the contest will mainly be on CW, with some Digital modes. QSL via LoTW or ZL3TE.

3W2/XV7, VIETNAM (Update to OPDX.1143/Reminder). By the time you read this, Toshi, JA8BMK, who was active as XW8BM from Laos, active as 3W2DX from Ho Chi Minh City until February 17th. His next stop will be to one of the Nha Trang Resorts (on the east coast of the South China Sea) where he will be active as XV7BM between February 18th and March 28th. Activity here will be focused on the 160/80m using CW and SSB. He is not sure about the Digital modes but will be using a K2 with a 500w amp. QSL both call signs via JA8BMK, by the Bureau or direct (see QRZ.com).

5J0, SAN ANDRES. Operators Robert/N7QT, Melanie/AB1UH, Hugh/W4VAB and Guy/N7UN will be active as 5J0X from San Andres Island (NA-033) between April 2-14th. Activity will be holiday style (suitcase expedition) on 80-10 meters using CW and SSB. QSL via N7QT, direct (NO IRCs) or by the Bureau. Log will be uploaded to LoTW.

5V, TOGO (Update). Operators Phil/F5MVB and Joel/F5AOW are planning to be active as 5V7MP and 5V7BJ, respectively, from Avepozo between March 23-31st. Activity will be on CW and SSB. Details on bands have not been announced yet but will be forthcoming. QSL via their home call signs, direct or by the Bureau.

9H, MALTA. By the time you read this, Russell, G5XW, will be active as 9H3XW from Malta (EU-032) until March 6th. Operations will be from the MARL HQ club house or Michael, 9H5DX's, QTH. Activity will be on the HF bands (he likes 40/17/12m) using SSB. QSL via his home call sign, direct or by the RSGB QSL Bureau.

9J, ZAMBIA (Update). Members of the Italian DXpedition Team are planning to be active as 9J2T between February 28th and March 17th. Operators mentioned are Silvano/I2YSB, Vinicio/IK2CIO, Angelo/IK2CKR, Marcello/IK2DIA, Stefano/IK2HKT, Alfeo/I1HJT and Mac/JA3USA. Activity will be on all bands, 160-6 meters using all modes. Suggested frequencies are:

CW - 1826, 3530, 7025, 10115, 14030, 18068, 21030, 24893 and 28030 kHz

SSB - 3780, 7103, 14270, 18155, 21310, 24975 and 28420 kHz

RTTY - 14087 kHz

6m - 50.102/CW and 50.123/SSB

QSL via I2YSB, direct or by the Bureau. OQRS will be available for direct QSL at: <http://win.i2ysb.com/logonline/>

9X, RWANDA. Nick, G3RWF, active as 9X0NH from Rwanda between March 3-12th. Activity will be from Kigali on most HF bands and will be mainly CW with some SSB using K3 w/100 watts and wire antennas (Inverted V at about 40 Ft.). There will be no 160m, but he will be on 6 meters. Operations will include an entry in the RSGB Commonwealth Contest (March 8-9th). QSL via G3RWF. Nick states, "I use LoTW and do my own QSLing (prefer ClubLog)."

A22, BOTSWANA. Schalk, ZS1LL (ex-ZS3O), from Sandbaai, South Africa, active as A22LL from Lobatse between Apr 5-30. H has a farm in Lobatse and will be there "every 2nd weekend". While there, Schalk mentioned that he will be on the 20m band CW and SSB. Watch 14020 kHz for CW and between 14180-14240 kHz for SSB (mostly on 14200 kHz calling CQ). Please QSL via his home call sign, direct and by the Bureau. NO LoTW.

A3, TONGA (Update/Correction). Keith/GM4YXI and Chris/GM3WOJ/ZL1CT (GM2V, ZK2V, VK9CZ) active as A35X & A35V, from Tongatapu Is (OC-049) April 4-18. Activity on 160-10 meters CW and SSB, some RTTY. Please QSL both A35V & A35X via N3SL. More details and updates in the coming weeks at: <http://a35va35x.com>

A3, TONGA. Masa, JA0RQV, (for the 6th time) active from Nuku'alofa, Tongatapu Is (OC-049), as A35JP between Mar 14-20. Activity will be limited this time because he is there on a business trip, so operations will be during his spare time "mostly at night in Tongan time (UTC +13 h) and week end". Operations will be on 80-6 meters using CW and SSB. Equipment is an IC-7000 (w/100W) into a vertical antenna. Please QSL via his home call sign, by the Bureau, direct (SASE w/1 IRC) or LoTW. For more details and updates, visit his Blog page at: <http://blog.goo.ne.jp/rqv>

C5, THE GAMBIA. Dom, M1TKA, will be active as C5/M1KTA from a beach sea front location in The Gambia between February 27th and March 10th. Activity will be holiday style on 20/17/15 meters operating QRP using CW, SSB and RTTY. He also may try 160m. Dom states, "On the last weekend between 12:00 UTC 8th and 12:00 UTC 9th March, unless you are in a BERU country I will likely ignore you please try another time." QSL via his home call sign or the LoTW. For more details and updates, see his Blog page at: <http://m1kta-qrp.blogspot.co.uk>

CE0, EASTER ISLAND. Oliver, W6NV, is currently active as CE0/W6NV from Rapa Nui (SA-001). His length of stay is not yet known. Activity has been on CW, operating on 20-10 meters. QSL via his home callsign.

CN, MOROCCO (Mobile Op!). Operators Leo/PD0HFP and Frans/PA5CA will be traveling through the Morocco Desert and the Atlas mountain range in a 4x4 Jeep Wrangler (Unlimited stretched version) vehicle between April 5-20th. They plan to be active as CN2CA (TNX to Abdou, CN8VO) using an Icom 7100 with Harris Solid-State PA into HiQ-5 HF mobile antenna. Operations will be on 80-6 meters. QSL via PA9M, direct (2 GS) or by the Bureau. NO IRCs are accepted. For more details and updates, watch QRZ.com or visit: http://pa5ca.com/wp/?page_id=170

CQ3/CT9, MADEIRA ISLANDS. Helmut, DF7ZS, will be active as CQ3L during the CQWW WPX SSB Contest (March 29-30th) as a Single-Op/All-Band entry. QSL via DJ6QT. Look for Helmut to be active before the contest as CT9/DF7ZS, especially on the 17/12 meters. QSL via his home call sign, by the Bureau, direct or LoTW. Visit the CR3L Santana, Madeira Island (AF-014), Web page at: <http://www.cq3l.de>

DOWN-UNDER AND PACIFIC TOUR. Tim, NL8F, informed OPDX that "it's time for my March trip" and he is heading down-under to "OZ" -- Queensland, Australia, on March 6th. From there he will then head to Frasier Island (OC-142) for a few days (4-5) and be active as VK4/NL8F/p. He will then go to Norfolk Island (OC-005) to be active as VK9NF (if WIA gets paper work done on time, if not VK9N/NL8F) between March 15-22nd. He thinks his activity will be mostly on the Digital modes. Next, Tim will head back to Christmas Island (OC-024) and be active once again as T32TM, between March 25th and April 2nd, mostly for the CQWW WPX SSB Contest (March 29-30th). After his T32TM operation, Tim will travel to the Visalia, California, for the International DX Convention before heading back to Alaska on April 6th. As usual, QSL via K8NA his QSL manager for all his operations.

EU-008. Members of the Black Country DX & Contest Group active as MS00XE from **Isle Of Tiree** between Mar 25-31. 160-10 m CW, SSB and RTTY. Operations will include the CQWW WPX SSB Contest (March 29-30th). QSL via M0URX's OQRS <<http://m0urx.com/oqrs/>> Logs will be uploaded to ClubLog and LoTW upon their return home. For more details and updates, visit the following Web pages and Media feed: <http://www.ms00xe.net>

JD1, OGASAWARA. Minekazu, JA2NQG, active as JD1AAI from Chichijima (AS-031) between Apr 9-17. Mainly CW with some activity in the JIDX CW Contest (April 12-13th). Prefecture number is 48. He also mentions that there is no internet connection at the QTH he is staying. QSL via JA2NQG or JD1AAI, by the Bureau or direct.

MJ, JERSEY. Kazu, JK3GAD, will be active as MJ0CFW from Jersey (EA-013) between March 14-16th. Look for activity in the Russian DX Contest (March 15-16th) and the BARTG HF RTTY Contest (March 15-17th). In both contests he will sign MJ5Z. QSL via LoTW or M0CFW.

OD, LEBANON. Sylvain, F5TLN, active as OD5/F5TLN since Sept, will be there until Apr 2014. Mainly on 15 meters SSB. QSL via his home callsign direct only. Visit his Web page at: <http://f5tln.voila.net>

PJ7, SINT MAARTEN (Reminder). By the time you read this Tom, AA9A, will once again be active as PJ7AA from Sint Maarten (NA-105) until March 16th. He informs OPDX that this is his yearly trip to Simpson Bay, and his activity will be on 40-10 meters using CW and SSB. Tom mentions, "I may be able to spend a few hours in the ARRL SSB Contest (March 2-3rd) like last year. We have family there that week and have time planned with them so contest time is very limited." Operations will be with 100 watts with a K3 and Buddipole. QSL via AA9A or LoTW.

SA-086. A Chilean team will be active as XR2T from **Damas Island** between April 16-20th. Operators mentioned are: CW - Nicolas/XQ1KZ, Carlos/XQ1CR, Dercel/CE3KHZ, Alfredo/XQ3WD and Danilo/XQ4CW SSB/RTTY - Domingo/CE1DY, Claudio/XQ1FM, Mauricio/CE2WUI, Julio/CE3OP, Sergio/CE3WDH, Chris/CE3TAM, Juan/CE3RBJ and Rodrigo/CE4KCA Activity will probably be on the IOTA frequencies. QSL via XQ4CW.

S0, WESTERN SAHARA. The "DX-World.net" is reporting that Dom, 3Z9DX (ex-SQ9KWW), is planning activity from the Western Sahara territory as S0/3Z9DX sometime in mid-March for one week (exact dates TBA). Activity will be on 40-10 meters SSB only. QSL via his home call sign.

T8, PALAU. David, VK3BY will be active as T88XT from IMAPC Palau Rental Shack (OC-009) <see: <http://palau.rental-shack.com/english>> between March 8-14th. David will be there with his XYL, so this will be a holiday style operation. Operations will be SSB only on 80-6 meters. He states, "I plan to operate as much as possible but also plan to see the wonderful sites and places of Palau." QSL via his home call sign, direct (w/3 USDs), by the Bureau or eQSL.

TX6, AUSTRAL ISLANDS (Update/Press Release #2). A group of six operators from the UK will operate as TX6G from the Island of Raivavae in the Australs (OC-114) between March 20th and April 1st. The following press release was sent out on February 7th: "We are pleased to say that we now have a call sign for our DXpedition to the Australs. It is TX6G. All preparations are going well at this time. We will be operating on CW, SSB and RTTY. We do not plan PSK operation. We are aware that other expeditions will be operating at the same time, so we are not publishing specific operating frequencies in advance – tune the bands or keep an eye on the Cluster to find us. We have been asked several specific questions about operating objectives and plans. Our priority will be to exploit openings to Europe when they are available but we will also ensure that we cover South America, VK/ZL, etc. We should be able to work JA and W/VE for many hours each day so there will be plenty of opportunity for a QSO from those regions. We will not be operating in the

CQ WPX SSB contest, but will use that weekend to maximize QSOs on the WARC bands and on CW and RTTY on 80m through 10m. We will operate nine bands 160m through 10m. No 6m or 60m activity is planned. 160m and 80m will share an antenna, so we expect to alternate operation on those two bands, largely depending on band conditions. Last but by no means least, we now have a website up and running at <www.tx6g.com> where we will post news and updates and where, in due course, you will find a link to Club Log to check the log and make online QSL requests..... Don Field, G3XTT <don.field@gmail.com>"

V650, MICRONESIA (Update). Haru, JA1XGI, plans to celebrate his 50th anniversary in amateur radio by using the special call sign V650XG from Pohnpei (OC-010) between May 9-15th. Haru informs OPDX that his activity will be on 40-10 meters, including the 30/17/12m, using CW, SSB and RTTY. He will also look for DX on 6 meters. Suggested frequencies are: CW - 7025, 10105, 14015, 18080, 21015, 24895 and 28015 kHz SSB - 7145, 14175, 18135, 21260, 24940 and 28450 kHz RTTY - 7030, 10140, 14088, 18102, 21088, 24920 and 28088 kHz QSL via his home callsign, direct or by the Bureau. An OQRS will be available on ClubLog. For more details and updates, visit his Web page or Blog at: <http://island.geocities.jp/v63xg/index.htm> <http://kcv-net.easymyweb.jp/member/dxvacation> ADDED NOTE: Haru is also expected to return December 1st to Chuuk Island (OC-011). Details will be forthcoming.

VK9X, CHRISTMAS ISLAND. Operators Jon/K7CO and Christian/K7CXN will be active as VK9X/K7CO from Christmas Island (OC-002) between March 1-11th. They are looking for another CW operator to join them. We'd prefer ham that has pileup experience and also antenna installation experience. If interested, contact Jon at <k7co@vk9x.com>. Activity will be on 80-10 meters using CW, SSB and PSK31. Christian will be the primary operator on PSK31 and will also do some SSB. QSL via K7CO, direct or via the OQRS on ClubLog. NO Bureau. For more details and updates, see: <http://www.nielsen.net/vk9x>

VQ9, CHAGOS. Jim, ND9M, is once again active as VQ9JC from Diego Garcia. The length of his stay is not known. Activity has been on 30/20/17 meters using mostly CW, with some SSB and RTTY. QSL via ND9M.

XU, CAMBODIA (Reminder). John, KF0RQ, will once again be active as XU7ACQ from Phnom Penh between February 25th and March 21st. Activity will be holiday style (he is there to visit his daughter and family) on 40-10 meters using SSB and the Digital modes (RTTY/PSK31). He informs OPDX that he will be using a broadband 5 band Hex beam at 35 feet for 20-10 meters and a trapped vertical for 40m. John is still looking for South Dakota and Delaware QSOs for his WAS from XU. QSL via KF0RQ. Online log search is available at ClubLog.

ZD8, ASCENSION ISLAND (Reminder). Werner, DJ9KH, will once again be active as ZD8D from Ascension Island (AF-003) between February 24th and March 11th, for a more or less holiday-style-expedition. He states, "This expedition will start in Cape Town, South Africa, on board the RMS St. Helena. After a two days stop on St. Helena, where I hope to be QRV with a ZD7-call sign (Feb. 19th to Feb. 21st), we (me and my wife) will arrive on Ascension Island Feb.24th. Activity will then start as soon as possible with a special focus on 160-40 meters. Werner mentions, "After having a lot of fun with CW on my 2013 A35WH - expedition, CW will be the preferred mode. We are also prepared for 60m and 6m." He will also be in the ARRL DX SSB Contest (March 1-2nd) as a Single-Op/Single-Band (possibly 10m). QSL via DL9HO. During the second week, they will have a second operator join him. Axel, DK9BDN, will visit them and help them, especially on CW. DK1IP will be the pilot station for Werner in Germany. The ZD8D Web page <<http://www.zd8d.de>> will be updated soon with all the information. You can use the ZD8D Online QSL Request System to get your ZD8D card(s). The OQRS is available for direct and Bureau cards.

ZL7, CHATHAM ISLAND (Update). Sandro, VE7NY, has announced an update on the international team going to Chatham Island as ZL7AAA between March 20th and April 1st. Operators mentioned are Franz/OE2SNL, Sandro/VE7NY, Graham/ZL1GMB and Barry/ZS1FJ. Activity will be on all HF bands using CW, SSB and RTTY. QSL are via VE7NY. The ZL7AAA Web site is still under construction at: <http://www.qsl.net/zl7aaa>

IOTA NEWS.....

AS-067. Taka, JA8COE, active as JA8COE/6 from **Uji Island** between Apr 11-15. Activity on 40-10 m using CW, SSB and the Digital modes. QSL via his home call sign direct only. For updates, see: <http://takaja8coe.de-blog.jp/blog>

AS-093. Kang, DS4DRE, is now active (as of February 12th) as DS4DRE/4 from **Taehuksan Island** until December 31st. Activity will be 80-10 meters using CW and SSB. QSL via his home call sign, direct or by the Bureau.

EU-047. Robert, DK2RO, will once again be active as DK2RO/p from **Spiekeroog Island** between March 2-7th. Activity will be holiday style on all HF bands, propagation permitting, main mode CW. QSL via his home call sign, direct or by the Bureau. He has uploaded his logs of past operations to LoTW.

EU-123. Members of the Tynemouth Amateur Radio Club's will be active as GS0NWM from **Isle of Arran** between March 26th and April 2nd. The group will be entering in the CQ WPX SSB Contest (March 29-30th) as Multi-Op entry and sign GM5N. Operators mentioned are Glenn/G0SBN, Tony/G8YFA and Bob/M0KLO. Activity outside of the contest will be on 80-10 meters using CW, SSB and RTTY. QSL via M0URX, OQRS is preferred. No incoming cards required through the Bureau. Please use the OQRS.

OC-164. John, VK6HZ, will once again be active as VK6ARI from **Rottneest Island** between March 23-30th. Activity will be holiday style on 40-10 meters using SSB, PSK and RTTY, possibly CW. Antenna will be a Buddipole. Activity will be around the usual IOTA frequencies. QSL via VK6HZ, direct or by the Bureau. Log will be uploaded to Clublog and LoTW.

OC-204. Imam, YB4IR, will be active as YB4IR/P from **Enggano Island** between March 23-30th. Activity will be on 40-10 meters using CW and SSB. QSL via LoTW or ClubLog's OQRS.

OC-210. The "DX-World.net" reports that Din, YB8RW, will be on a "Northern Indonesia IOTA DXpedition" **Mianguas Island (OC-209) and Marore Island (OC-210)** as YB8RW/p until Mar 10. On the HF bands. QSL via YB9BU.

OC-219. Operators Budi/YF1AR and Adhi/YB3MM active from **Tukang Besi Islands** (aka Wakatobi Islands, ARLHS IDO-259 Wangiwangi LightHouse) as YF1AR/8 (between Mar 28-Apr 2nd) and YB3MM/8 (Mar 26-Apr 2nd) On 40-10 m using mainly SSB, but also CW & Digital modes. QSL YF1AR/8 via N2OO. QSL via YB3MM/8 (see QRZ.com). For more info and updates, see: http://www.yf1ar.com/2014/01/oc-219-tukang-besi-islands-aka-wakatobi_15.html

Well, that's it for the next few months. There are some great opportunities to work some rare DX. Let me know what you are working and we'll post it here in the Newsletter. So until next month 73 and GUD DX!!

Chuck, W8PT
aka 'Charlie the Tuner'



PCARS

ARRL Volunteer Examiners:
serving the Amateur Radio community

First Saturdays 10:00 am
at the club site in Ravenna
February, April, June, August,
October, December



"Ay Caramba!"

In light of all this snow and cold, I thought I might send your minds to a warmer happier place...FIELD DAY! The master is back! (At least in his own mind - hi, hi) Seriously, I will once again tackling the challenges of feeding the members, guests and operators at Field Day this year.



Sitting in my favorite Mexican restaurant the other night, the menu literally smacked me in the face (or was that the XYL trying to get my attention? I digress).

For your dining pleasure this year at Field Day, we will be feasting on steak, chicken and maybe a few shrimp fajitas. Paired with this hearty handheld dish, will be Spanish rice (no saffron KD8VT).

As I like to do, I like to have a nice refreshing fruit with dinner and I'm quite sure the park gods will not let us have Sangria, but who knows...

Of course there will be chips and salsa (homemade of course; no steenking jars here), some fresh queso and lots of napkins!

Breakfast will be Parky's favorite buttermilk pancakes with thick cut bacon and maybe a dutch oven breakfast mash.

What I need the membership to start thinking about is the next time you head to grocery, consider picking up a sack or two of tortilla chips. They keep well and will help defray costs. Also start thinking about dishes you might like to share for the overnight operators and guests. As we all know, PCARS always scores higher when the animals are fed!

I will be looking for help in pulling this off this year. I have had a steady crew in the past but I am not going to assume they are going to be available or willing to sling the hash so to speak. We will need prep people, runners, flippers, dippers and maybe a few skippers.

I am looking forward to a great Field Day this year and will keep you posted of developments as they arise.

Come on June, baby you can't get here soon enough....



73 & 88
Robert, N8RLG

Amateur Radio: Your Gateway to Wireless Communication

“Amateur Radio: Your Gateway to Wireless Communication” is World Amateur Radio Day 2014 Theme.

The International Amateur Radio Union (IARU) Administrative Council has designated “Amateur Radio: Your Gateway to Wireless Communication” as the theme for World Amateur Radio Day 2014. World Amateur Radio Day is celebrated each year on April 18 to recognize the anniversary of the founding of the IARU in Paris in 1925. ARRL Co-Founder Hiram Percy Maxim, 1AW, was its first president. The primary purpose of World Amateur Radio Day is to focus a public spotlight on Amateur Radio and its benefits to countries and communities. This year the IARU and its more than 150 member-societies will celebrate the organization’s 89th anniversary.



Each year the IARU Administrative Council selects a World Amateur Radio Day theme that is consistent with the role and purpose of Amateur Radio and that represents a commendable activity that would cast IARU and Amateur Radio in a favorable light. When the Administrative Council met last September in Mexico, attendees discussed various possible topics and themes, before adopting “Amateur Radio: Your Gateway to Wireless Communication.”

As the IARU’s history recounts, in the early 1920s it was generally assumed that the lower the frequency and the longer the wavelength, the better, and “very large antennas and very high power were the rule.” Amateur Radio experimenters were the first to discover that the short wave spectrum, far from being a wasteland, could support worldwide propagation. As the rush to shorter wavelengths ensued, however, Amateur Radio, which had proved the value of this spectrum in the first place, “were in grave danger of being pushed aside,” the IARU’s history notes.

Adopting the philosophy of strength in numbers, Amateur Radio pioneers met in Paris in 1925 and created the International Amateur Radio Union to support Amateur Radio worldwide. Just 2 years later, at the International Radiotelegraph Conference, Amateur Radio gained the allocations still recognized today — 160, 80, 40, 20, and 10 meters. From fewer than 30,000 licensees in 1927, Amateur Radio’s numbers have grown to 3 million. From the 25 countries that formed the IARU in 1925, the IARU has grown to include 150 member-societies.

Today IARU is organized into three regions. IARU Region 1 includes Europe, Africa, the Middle East, and Northern Asia. Region 2 covers the Americas, and Region 3 is comprised of Australia, New Zealand, the Pacific island nations, and most of Asia. The International Telecommunication Union (ITU) has recognized the IARU as representing the interests of Amateur Radio.

It is anticipated that several IARU member-societies and associated clubs will field special event stations to mark the occasion. This year, April 18 is a Friday. As the AC discussed, when the anniversary falls on a weekday, it is more difficult to observe and promote. AC members have concurred on the concept that public relations activities or operating events marking World Amateur Radio Day may appropriately take place during the weekend following April 18 in years when the actual date falls on a weekday. — Thanks to Geoff Atkinson, VK3TL, IARU R3 Director

From the ARRL



ARRL Membership: Is 25% Asking Too Much?

In the March 2014 issue of QST, ARRL CEO Harold Kramer, WJ1B, makes a big deal of the fact that ARRL membership is now up to 162,200 members and is growing at a rate of about 1% per year. After patting the ARRL on the back about this, WJ1B launches into a discussion of the different programs that WJ1B feels have contributed to the membership growth.

Let's take another look at the numbers, though. As the editorial points out, 10,300 ARRL members are international members, meaning that 151,900 U.S. hams are ARRL members. Another article in the March issue, "New Licenses," notes that the total number of licensed radio amateurs at the end of 2013 was 717,201. If you do the math, you'll find that only slightly more than one in five licensed radio amateurs are ARRL members. I personally don't think that's so hot, and it's certainly not worthy of all the self-congratulation going on in this editorial.

The licensing article also points out that "the amateur radio population in the US grew by slightly more than 1% last year." That being the case, ARRL membership has grown at about the same rate. If all the programs noted in WJ1B's editorial were so effective, wouldn't you expect membership growth to be at least 2%?

I've said this before, and I'll say it again. I think the ARRL should set a goal to enroll at least 25% of licensed radio amateur as members. I think that this is achievable, and it seems to me that any group calling itself "the national organization for amateur radio" should have at least one in four amateur radio licensees as part of its membership.

What do you think? Is reaching 25% asking too much? If you think I'm right, please reach out to your ARRL division director and tell him so. More members would mean that the ARRL could deliver more services and have more clout in Washington. That sounds like a good thing to me.

Dan, KB6NU

When he's not worrying about ARRL membership, Dan, KB6NU enjoys working CW on the HF bands, teaching amateur radio classes, and building kits. For more information about his operating activities and his "No-Nonsense" series of amateur radio license study guides, go to KB6NU.Com or e-mail cwgeek@kb6nu.com.

April is only a One Month Away

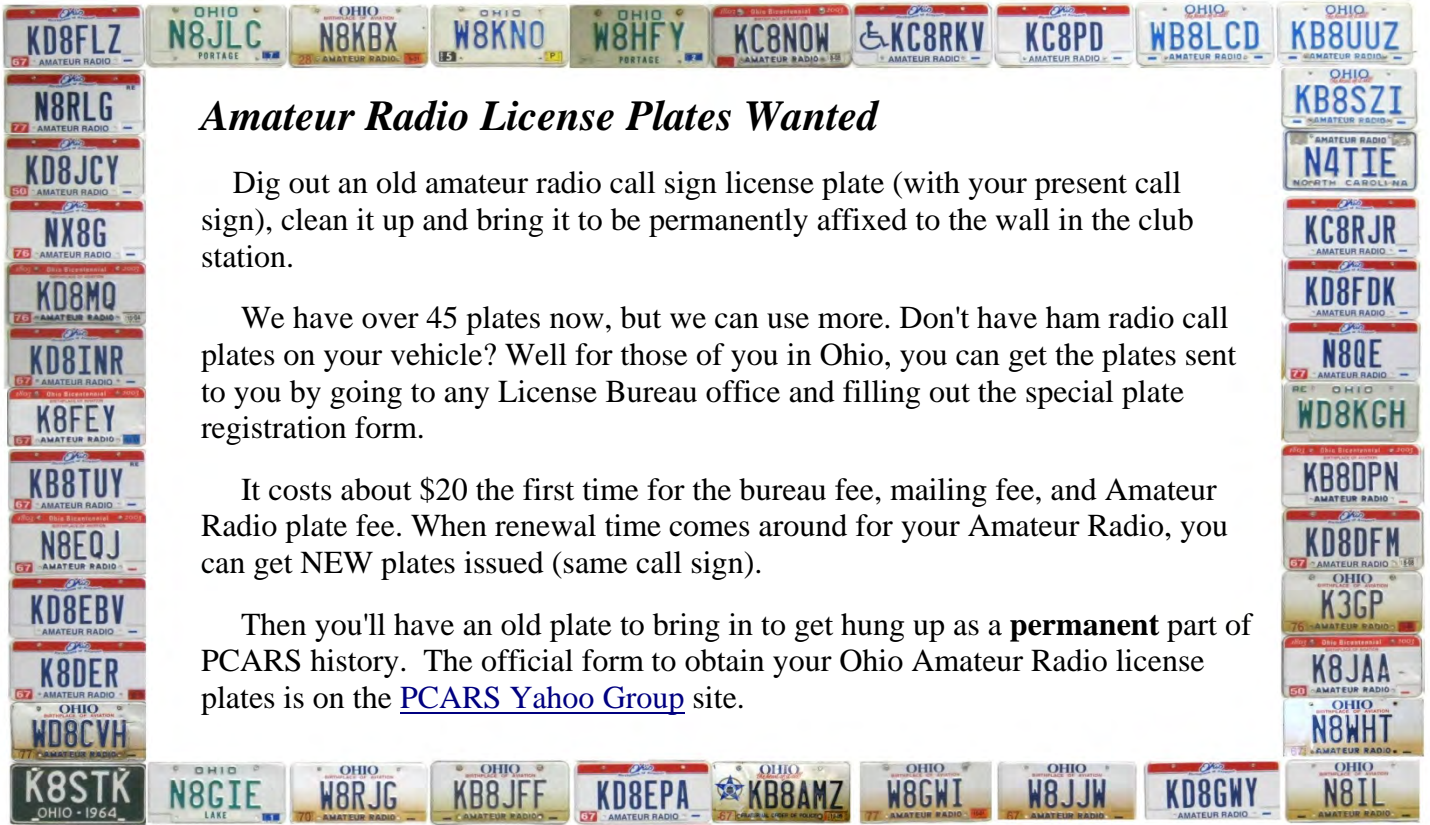
Yes I know it's March - but I wanted to get the word out early so everyone can keep their eyes open for some fun articles for our annual April Fool issue of **The RADIOGRAM**.

Traditionally I've been adding some fun stuff in the April issue in hope to make you chuckle a bit and enjoy the newsletter even more. So, if you spot something that we can use, let me know.

Unfortunately, if the item has a copyright and we can't get permission to re-print, we'll have to skip it. Your newsletter editor does not want to get dragged into court over copyright issues...



73,
Tom, KB8UUZ



Amateur Radio License Plates Wanted

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

We have over 45 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.

It costs about \$20 the first time for the bureau fee, mailing fee, and Amateur Radio plate fee. When renewal time comes around for your Amateur Radio, you can get NEW plates issued (same call sign).

Then you'll have an old plate to bring in to get hung up as a **permanent** part of PCARS history. The official form to obtain your Ohio Amateur Radio license plates is on the [PCARS Yahoo Group](#) site.

PCARS Meetings

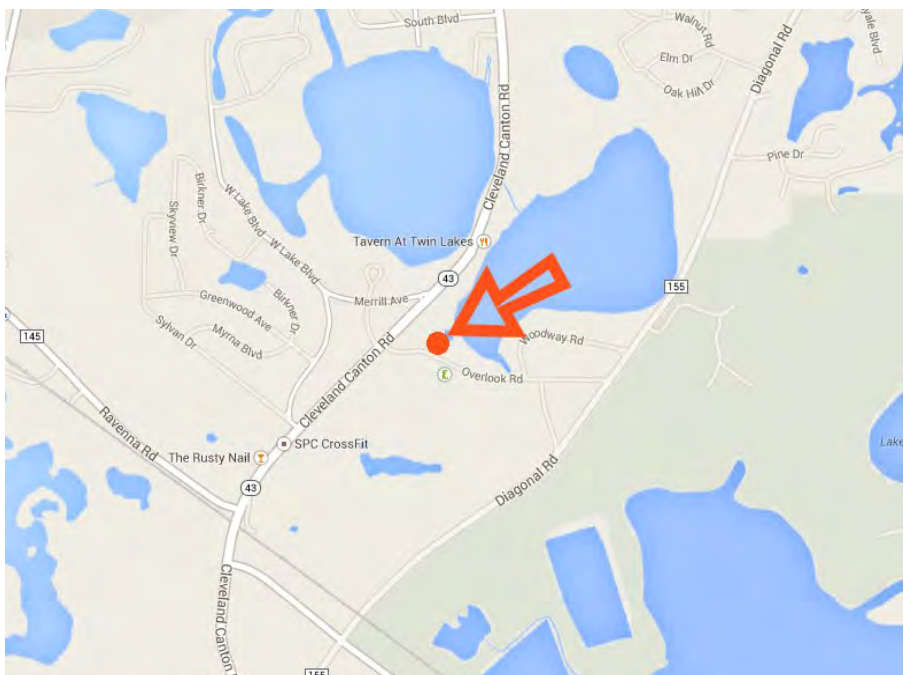
The Portage County Amateur Radio Service (PCARS) meetings are held the **2nd Monday** of each month.



PCARS meets at the **Overlook Restaurant in Twin Lakes** (formerly known as the *Twin Lakes Country Club*). Address is 1519 Overlook Road in Twin Lakes.

We will be in the club house on the north side of Overlook Road.

**PCARS meeting - 7:00 pm
Second Monday of
Every Month**



Introduction to Emergency Communications Class – 2014

The Communications Unit/RACES of the Portage County Office of Homeland Security and Emergency Management (EMA) is sponsoring a local, classroom based version of the ARRL's Introduction to Emergency Communications course. This was previously known as the Level I course and it has traditionally only been available on-line through the ARRL.

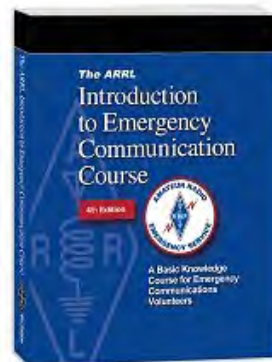
This local course will be taught by Jim Aylward, KC8PD, who is a registered Field Instructor and Field Examiner for the ARRL. That means that this class will qualify you to take the written exam at the end of the course in order to obtain your ARRL certificate of completion.



The class will meet on four Saturdays in March and April starting on March 8th. There will be no class on March 15th, both to provide a break for the students and to enable class participants to attend the Ohio Section ARES® Leadership meeting. The class will then resume on March 22nd, March 29th, with the last class on April 4th. The class will be held at the Center of Hope, 1034 West Main Street, Ravenna, and will begin at 9:00 a.m. and run to around 3:00 p.m., with a break for lunch, on each day. Attendance at the classes is mandatory. Excuses from a class session will only be granted for extraordinary reasons and anyone who misses more than one class will not be permitted to take the exam.

Anyone wishing to take the class must register prior to the class so that we can ensure that sufficient seating is available. The number of students may be limited. If you wish to attend you must pre-register by sending a note to KC8PD at aylwardjim@aol.com. Contact him if you have any questions about the class.

There is great deal of material to cover for this class and all students should purchase the course manual from the ARRL, <http://www.arrl.org/shop/The-ARRL-Introduction-to-Emergency-Communication-Course/>. The book is item #7303 and costs \$24.95.



There will be no charge for the class and you do not have to be an ARRL or ARES® member to participate. There is a \$15.00 fee, payable to the ARRL, to take the final exam.

This is a great opportunity to be able to obtain the certification without the expense of the tuition for the on-line course. However, everyone must be prepared to be involved and to participate in order to obtain the maximum benefit from the material.



ARRL to File “Friend of the Court” Brief in Ohio Antenna Case

The ARRL plans to file a “friend of the court” or amicus curiae brief on behalf of an Ohio radio amateur who has been at loggerheads with his community since 2009 in efforts to erect a modest antenna support structure. The Village of Swanton, Ohio, turned down the application of ARRL Life Member Gary Wodtke, WW8N, for an antenna variance to put up a 60 foot tower. Wodtke appealed, however, and in January the Fulton County Common Pleas Court issued a final judgment in his favor, ruling that federal and state law preempted Swanton’s antenna ordinance.



Now, Swanton is appealing that order to the US Court of Appeals for the Sixth District, asserting, in part, that Ohio’s PRB-1 antenna law is unconstitutional, because it conflicts with the state’s “Home Rule” statute, which gives communities broad and preemptive regulatory powers. Like the federal law, Ohio’s PRB-1 statute calls on towns to “reasonably accommodate amateur station communications and shall constitute the minimum practicable regulation necessary.” Ohio Section State Government Liaison Nick Pittner, K8NAP, believes the federal appeals court’s decision in Wodtke v. Village of Swanton could set legal precedent for similar antenna-related cases down the road. An attorney, Pittner was instrumental in getting Ohio’s PRB-1 law enacted.

“Appellate decisions are generally final, unless further review is granted by the Ohio Supreme Court,” Pittner said in a statement. “While a court of appeals decision represents the law only in that appellate district, it carries significant precedential value in other Ohio courts and may also be cited in similar cases in other states.”

In addition to the state’s antenna regulation pre-emption law, the application and authority of the federal PRB-1 statute, embraced in Section 97.15(b) of the FCC’s Amateur Service rules, will be at issue in the appeal. This case will mark the first time a state PRB-1 law has been challenged in an appeal.

Assisting in the case is telecommunications attorney and antenna rights advocate and expert Fred Hopengarten, K1VR, the author of Antenna Zoning for the Radio Amateur, published by the ARRL and now in its second edition.

The Village of Swanton’s ordinance established a fixed antenna height of 20 feet above the residential roofline. Wodtke wants to install a 60 foot antenna support structure on his 0.2 acre residential lot; the village allows greater height where the lot is at least 5 acres. While the appeal is pending, both parties have agreed that Wodtke be permitted to install a 40 foot antenna support structure, which complies with Swanton’s current ordinance.

From the ARRL



Team Klondike - FYAO 2014

Team KC8UNR, was led by "Klondike" Mike. Team members were Chris, KD8ELY, Trustee for WRARC, (who just passed his Extra exam 2/19/2014), his girlfriend, Becca, and PCARS club secretary, Amy, KD8SKL. Mary Jo, KD8GGZ, and Leon, N8GLK, visited. Along with heavy hitters Russ, NR8W and Uncle Roy Haren, KD8IJF, New president of WRARC.

FYAO 2014

The park was snowy like the Adirondacks
And why couldn't we make any contacts?
No people on 40 meters just beeps and chirps.
At least we earned points for visitors.
Lost feeling in our feet as they covered with frost,
And warmed ourselves with truck exhaust.
But we had a great time and the food was hearty,
Cause PCARS really knows how to throw a party!



73,
Amy, KD8SKL

Dues are Past Due

Time has run out - PCARS dues were due by January 31st ! If you have already paid your PCARS renewal dues - **Thank You**. If you have not, please get them into the PCARS Secretary Amy - KD8SKL as soon as possible. You can mail them to:

Amy Leggiero - KD8SKL
115 Steels Corners Rd. W.
Cuyahoga Falls, OH 44223



Or, you can take advantage of the new **PAYPAL** option, which is located on the PCARS website www.portcars.org under the "Club Info" tab.

If you have extenuating circumstances, please contact me directly.

Thanks and 73,
Tom, WB8LCD

California QSO Party Results for 2013

Well the results are in and there is good news and there is not so good news. Let's look at the good news first.

The CA Party committee mentioned that there were about 880 logs turned in with only one check log. Don't worry, it wasn't K8BF. There were six new records set with 5 of the records being new state records and the sixth being a record for the most CW QSO's.



The entry classes were County Expedition; Low Power; QRP; Multi-Multi; Multi-Single; YL Operator; Mobile.

K8BF was entered as a Multi-Multi Low Power. Our team, made up of N8QE, KD8EPA, KD8SKL, KC8UNR, WB8LCD, KB8TUY, KC8RJR, KB8AMZ, and W8PT, finished Ranked #1-USA and #1 Ohio for our class. We were credited with 263 Contacts, 51 Multipliers and a total point score of 27,081.

That's the good news. Now for the not so good....

Our claimed score was 31,252 which means we lost 4,171 point due to busted calls probably on both CW and SSB contacts. So why should we be concerned since we finished 1st in the US and Ohio. Well, it's because we could have done much better. We need to consider that there were single op scores as high as 147,407 points and a single op YL from New Jersey who set a record for the most Q's by a YL in this event with a score of 114,347. In Ohio, a local HAM - Jim Stahl - K8MR, who has visited PCARS, scored 57,970 in the Low Power category.

Our Multi-Multi competition this year was low but others will notice that this is a category that can bring them a first place finish. We can't always count on the fact that we will be in a category with limited competition. So we will need to pay attention and do better.

Having said all that, I really am pleased that we did as well as we did. I want to congratulate our ops and hope that they will consider participating again this year. Maybe we can even get a few more of our CW ops involved since that is where many stations garnered big point totals. We will be looking forward to this year's CA QSO Party to see if we can show an improvement.

A graphic titled "California QSO Party" with "NCCC" logos on either side. It says "48th Running Of The CQP! October 5-6, 2013 1600 UTC Oct 5 to 2200 UTC Oct 6". It includes a "Score Statistics" table, a "Portage County Amateur Radio Service" logo with a squirrel, and a "Counties Worked" list.

Score Statistics	
Total PH Contacts	275
Total CW Contacts	17
QSO Points	601
Total Multipliers	52
Total Score	31,252

PORTAGE COUNTY AMATEUR RADIO SERVICE

Counties Worked - 52	
Counties To Go - 6	
Humboldt	
Merced	
Monterey	
Plumas	
Sierra	
Yuba	

Chuck, W8PT
PCARS Contest Coordinator

Hamfest Report - Orlando HamCation® Defrosting in Orlando

If you've had your fill of Northeast Ohio weather, think about adding the Orlando HamCation® to your calendar next February.

The Orlando Amateur Radio Club organizes the HamCation® Amateur Radio and Computer Show in Orlando, Florida, which is held annually at the Central Florida Fairgrounds. The event hosts an estimated 12,000 visitors, only second to the Dayton Hamfest. You can get your hamfest fix, while the rest of the family visits the other Orlando attractions, such as Universal, Sea World, DisneyWorld, which are all within a 30 minute drive.



This year's event was held February 7, 8 and 9 (Friday through Sunday) with over 150 commercial vendor booths, 400 indoor swap tables, and the largest tailgate area in the southeast US, displaying amateur radio equipment, parts, computer hardware and software and other interesting items. Most of the big names in the ham world, such as Kenwood, Icom and Elecraft were present, along with many of the other vendors that also appear at Dayton every May.



While temperatures were hovering around zero up north, Orlando temperatures ranged in the 50s to 60s, with intermittent showers during the entire weekend. When we arrived early Saturday, we went directly to the tailgate area, since there was a break in the rain. Most of the outdoor vendors had tarps, tents or other shelters in place to keep their wares dry, and provide temporary shelter for those braving the rain.



A prolonged shower around 11:00 am sent many into the large commercial buildings or outdoor food vendors, who had numerous sheltered tables where you could sit and have a sandwich or snack. As you can see in the picture, umbrellas and ponchos were standard equipment for most visitors.

We met up with K8IV and checked out the commercial building, looking for bargains and asking lots of questions about the equipment on display, especially at the Elecraft booth. (Parky, we both finally ordered P3 Panadaptors at a show discount, including free shipping and free hats.)

Thinking about a trip south next year? The HamCation® will be held February 13-15 in 2015. Updated information is available at the HamCation® website, www.hamcation.com, on Facebook, and on Twitter: @hamcation.



Mark, K8MSH

Picture Captions:

Commercial building. Indoor swap building. Umbrellas and ponchos were standard gear for much of the weekend. K8IV and K8MSH looking for bargains.

Shack Shot - K8QF

Station consists of a Flex 5000 radio. Icom IC-756 Pro 3, an Icom IC-746, Kenwood TS-450.

Amplifiers are Ameritron 1500, Ameritron 811h, and a Heathkit SB 1000.

Antenna tuners are Palstar Auto Tuner and a Palstar AT2k. Antennas are Gap Titan Vertical, DX Engineering Hex Beam, 220 foot dipole.

I use two quad core computer systems. One is dedicated to the Flex radio and has dual monitors. This is my contest setup. The second computer is for the other radios and general internet usage. My favorite part of the hobby is chasing DX and working DX contests.



In the future my goal is to really use the digital modes for DX!!

Russ, K8QF

Stark County VHF QSO Party

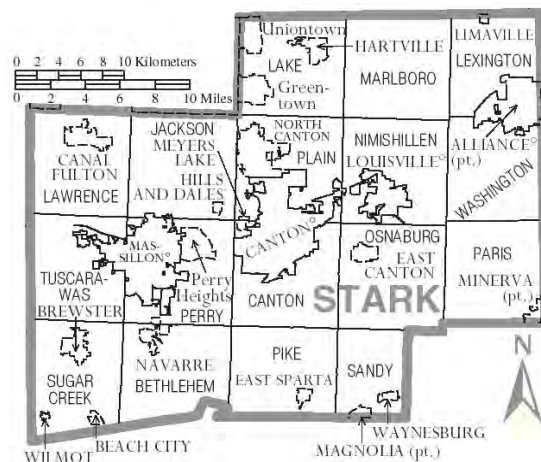
The Stark County VHF QSO Party sponsored by: The Alliance Amateur Radio Club will be held on April 26th, 2014 from 12:00 PM - 4:00 PM. Mode: 2 Meter FM Simplex.

This is the Alliance ARC's 5th running of this event. Our previous years have resulted in a lot of 2 Meter activity, and a lot of fun.

- The purpose of this contest is to:
- Provide an opportunity for local Amateurs to enhance their station and operating skills.
- Simulate emergency conditions (with NO repeaters).
- To enhance utilization of the 2 meter band and simplex operation
- To have fun.

We've tried to keep the rules as simple as possible, without sacrificing clarity. If you see anything that leaves you scratching your head, please let me know. You can email me at 2mcontest@w8lky.org, or call me at 330-936-5021.

Let's do our best to stay safe out there. I'm talking especially to the mobile operators. Obey the rules, of the road, and let's make this a good day for everyone. Thanks again for your interest. We look forward to working you in the 2014 Stark County VHF QSO Party.



73,
John, KD8MQ

More Pictures from the Powerpole Workshop



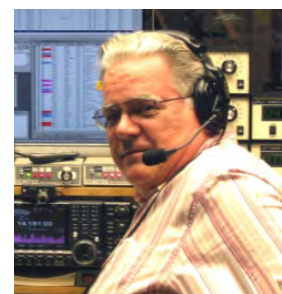
Thanks & 73

All of our members (and others) look forward to getting this newsletter every month, so keep sending those inputs! I'm sure PCARS will again be known as the **BIG FUN** amateur radio club with plenty of activities to report on in this newsletter all throughout the year.

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

WB8LCD, KC8PD, N8RLG, KB8UUZ, W8KNO, K8CAV, KB8UHN, KD8MQ, KB8AMZ, KD8EOZ, W8PT, KD8VT, KD8SKL, K8MSH, K8QF, the ARRL and the World-Wide Web.

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



Tom "Parky", KB8UUZ
PCARS Newsletter Editor

*Pictures from
the 9th Annual
Freeze Your
Acorns Off
Special Event
February 15th*



FYAO 2-15-2014

FYAO

PCARS

Pictures from PCARS February Meeting



February 10, 2014

PCARS

Pioneer Amateur Radio Fellowship, Inc.

Dayton Hamvention 2014

Saturday, May 17, 2014 - 5:30 AM

Don't miss out on this year's PARF Bus Trip to the world's largest topical conference and product exhibition. Save on gas, parking, and walking by riding with us! Leave the driving to us and you can come and go to the flea market with your great purchases and leave them on the bus. The bus will be parked close to the flea market entrance.



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

The cost of the **Bus & Entrance ticket** to the Hamvention:
\$65* before April 15, 2014



The cost of the **Bus Only** to the Hamvention:
\$50* after April 15, 2014

(You will need to get your own Hamvention Entrance Ticket at gate \$25,
or order by phone & have held at Will Call--possibly getting Advanced \$20 price.)

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

Departure time is 5:30 AM **SHARP**, so please be on time so you don't miss the bus!
Parking will be in the back of the church.

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

Transportation is being provided by the Crossroads Transportation Company. This bus is a smoke free bus, so there will be no smoking permitted.

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

Joy Spencer KA8TDF
2101 Bigelow St
Akron, OH 44314
Or call 330-745-5115
E-mail: KA8TDF@arrrl.net

Please supply a return e-mail address for your receipt confirmation.

Location of Departure is:

Akron Baptist Temple
2324 Manchester Road
Akron, Ohio 44314
Located on Rt. 93 just north of Rt. 224

Repeaters 147.135 & 146.610

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

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

You're Invited



To a *VERY SPECIAL*
PCARS Meeting on
March 10, 2014

PCARS will be hosting a **LIVE**
Skype presentation with

**Bob Heil,
K9EID**

Yes THE Bob Heil from



**Monday - March 10, 2014 - 7 PM at the Portage County
Amateur Radio Service club meeting. PCARS meets at the
Overlook Restaurant (*formerly the Twin Lakes Country Club*) -
Located at 1519 Overlook Rd, in Twin Lakes, Ohio**

Since this is something *extra-ordinary*, everyone, and anyone, that
would like to attend is invited to see Bob's presentation. We have the
room & PCARS looks forward to you being there!

In Bob's own words: "*I have no set scripts for my presentations. We
get into audio, antennas as well as some theory - keeping it simple.*"

Need more information? Contact PCARS President - Tom Sly WB8LCD@portcars.org

- Amateur Radio Instruction Class -

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

will be offering an Amateur Radio **Technician** course

that will enable *you* to obtain

your FCC **Technician** license as an

AMATEUR RADIO OPERATOR



When:

Tuesday evening 7:00 p.m. – 9:00 p.m.

March 11, 2014 through April 29, 2014

Official Amateur Radio License testing will be held at the end of the course

Where:

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

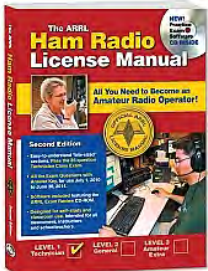


Registration: First night of class

Cost:

\$25.00 Registration fee - which also provides
the attendee a One-Year Membership in PCARS
(No Registration Fee for PCARS Members)

\$30 Text – “Ham Radio License Manual”
(text may be purchased first night of class)

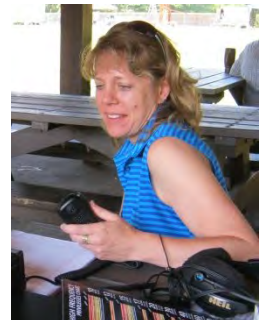


Information:

Contact Tom Sly, WB8LCD

e-mail at: **WB8LCD@portcars.org**

phone at: **330-554-4650**



As a licensed **Amateur Radio Operator** you will be able to

- **Contact other ham radio operators in the area and around the world**
- **Serve your community – ham radio operators are the critical communication link during disasters and emergencies**
- **Participate in a fascinating and rewarding hobby**

For more information about PCARS, go to **www.portcars.org** , or contact

Tom Sly - WB8LCD, at **WB8LCD@portcars.org**, or by phone at **330-554-4650**



Portage County Amateur Radio Service, Inc. (PCARS)

Membership Application [] New [] Renewal

Name: _____ Call Sign: _____ License Class: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____ E-Mail Address: _____

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

Birthday: Month: _____ Day: _____ (don't need 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 Jan 31st. Dues are as follows:

Example - Regular Member Pays on Jan 1st \$20 for entire year. If paid on June 1st, \$15 for entire year, etc.

Check One

Pro-Rated Dues Amount:

- | | | |
|--------------------------|--|--|
| <input type="checkbox"/> | Regular Full Membership | Pay January 1 through May 31= \$20.00 (full year)
Pay June 1 through August 31 = \$15.00 (last 7 months) |
| <input type="checkbox"/> | Associate Membership | Pay September 1 through November 30 = \$10.00 (last 4 months)
Pay December 1 through December 31 = \$5.00 (last month) |
| <input type="checkbox"/> | Regular Senior Full Membership (65+) | Pay January 1 through May 31= \$16.00 (full year)
Pay June 1 through August 31 = \$12.00 (last 7 months) |
| <input type="checkbox"/> | Associate Senior Membership (65+) | Pay September 1 through November 30 = \$8.00 (last 4 months)
Pay December 1 through December 31 = \$4.00 (last month) |
| <input type="checkbox"/> | Family* Member
Call Sign of Regular Member: _____ | Pay January 1 through May 31= \$10.00 (full year)
Pay June 1 through August 31 = \$8.00 (last 7 months)
Pay September 1 through November 30 = \$5.00 (last 4 months)
Pay December 1 through December 31 = \$3.00 (last month) |

(*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)

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

What are *YOUR* Ham Radio interests:

Signed: _____ Date: _____

Mail to: Portage County Amateur Radio Service, Inc.
c/o: Amy Leggiero - KD8SKL
115 Steels Corners Rd. W.
Cuyahoga Falls, OH 44223

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 #
Date Voted:	Results: Member Number:
<input type="radio"/> Database Updated	

Rev. 25 Dec 2012



Centennial Events & Programs



- **ARRL National Centennial Convention—July 2014**



ARRL National Centennial Convention at the Connecticut Convention Center in Hartford, July 17-19, 2014

Thursday, July 17, 2014

All Day Training Tracks: public service, technology, radiosport, and more!

Friday & Saturday, July 18-19, 2014

- ◆ Exhibit Hall featuring ARRL exhibits, Amateur Radio manufacturers, equipment sellers, and an indoor flea market
- ◆ Dozens of forums & presentations
- ◆ License Exams
- ◆ Friday Night Banquet

**July 17-20, 2014
(Thurs-Sun)**
Tours of ARRL headquarters and W1AW

**Hotel and
Travel details
available
NOW**

ARRL2014.org

- **Regional Centennial Events**
- **Donate Now to the Second Century Campaign for the ARRL Endowment**
www.arrl.org/scc
- **Yearlong On-Air Operating Event and Awards**
- **Plus commemorative publications, regional events, special QST features, and more! Additional details coming soon...**



Advancing the Art and Science of Radio—Since 1914

ARRL2014.org



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

Meetings: 2nd Monday of each month at 7:00 PM

PCARS meets at the **Overlook Restaurant** in Twin Lakes (formerly known as the *Twin Lakes Country Club*). Address is 1519 Overlook Road in Twin Lakes.

We will be in the club house on the north side of Overlook Road.

All are welcome to attend ~ Drop in and say hello!



"When All Else Fails - Amateur Radio Works"

PCARS uses the K8IV Repeater: **146.895 MHz** PL 110.9 ~ Rootstown, Oh or PL 118.8 ~ Kent, Oh ~ EchoLink Node: K8SRR

PCARS thanks K8IV for making the repeater available to area hams and for PCARS activities.

2014 PCARS Appointments & Committees

ARRL Awards - DXCC WAS, VUCC, WAC	W8KNO	Joe Wehner
ARRL Awards - WAS	KB8UUZ	Tom Parkinson
Club Site	KC8PD	Jim Aylward
Contest	W8KNO	Joe Wehner
Coordinators	W8PT	Chuck Patellis
EchoLink	K8SRR	Steve Randlett
Field Day Chairman	KD8VT	James Andrews
Field Day Co-Chairman	W8PT	Chuck Patellis
F.Y.A.O.	W8PT	Chuck Patellis
Historian	KB8SZI	Peggy Parkinson
K8BF Callsign Trustee	K8FEY	Bob Hewett
K8BF QSL Manager	K8FEY	Bob Hewett
Net Coordinator	WB8LCD	Tom Sly
Newsletter	KB8UUZ	Tom Parkinson
OSPOTA	KB8UUZ	Tom Parkinson
P.I.O.	WA8AR	Tony Romito
Secretary	KD8SKL	Amy Leggiero
VE Liaison	N8RLG	Robert Gurney
Webmaster	KD8MQ	John Myers



**PCARS
Volunteer
Examiner
Team**

KC8PD	Jim Aylward
KB8UUZ	Tom Parkinson
KB8DPN	Russ Anderson
N4IT	Carl Capps
WB8LCD	Tom Sly
N8XTH	Deron Boring
N8PXW	Jim Korenz
N8QE	Bob Hajdak
W8PT	Chuck Patellis
K8IV	Ed Polack
K8QF	Russ Conklin
WD8CVH	Ted Wands
N8RLG	Robert Gurney
AB8AA	Allan Avnet
K8JAA	Jane Avnet
KD8FLZ	Mike DiCarro
W8RID	Bob Davet
WA8CCU	Al Nagy
N8RW	Russ Williams
KD8RJV	Jim Corbett
W8EZT	Frank Tompkins
N8OQQ	Bryan Buchwalter



The **RADIOGRAM** is the official *Award Winning* (ARRL Ohio Section Newsletter First Place Winner - 2012 AND 2013 - plus Second Place in the Great Lakes Division for 2013!) newsletter of the Portage County Amateur Radio Service, Inc. (PCARS) – copyright © 2014. 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 it. If you use material in this newsletter, all we ask is that you give credit to PCARS along with the author of the article. 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 now 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!**

This is the **Electronic E-Mail** version of the **PCARS Newsletter, The RADIOGRAM**. The advantages to receiving this way are: You get **COLOR** pictures, **NO** postage needed, and delivered right to **YOUR** e-mail box! The RADIOGRAM is published every month and is sent only 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.

Portage County Amateur Radio Service, Inc. (PCARS)
Tom Parkinson - KB8UUZ - Newsletter Editor
9992 State Route 700
Mantua, OH 44255

NLC



THE RADIOGRAM