



# The RADIOGRAM

When All Else Fails ~ Amateur Radio Works



November 2006 ~ Official Newsletter of the Portage County Amateur Radio Service, Inc. (PCARS) ~ Vol. 1 No. 10

~ 2006 Officers ~

President: - Tom Sly - WB8LCD  
Vice President - Jim Aylward - KC8PD  
Sec/Treasurer - Tom Parkinson - KB8UUZ  
3 Year Trustee - Al Atkins - KB8VJL  
2 Year Trustee - Joe Wehner - W8KNO  
1 Year Trustee - Russ Anderson - KB8DPN

~ Meetings ~

2<sup>nd</sup> Monday of every month. 7pm  
at Mike's Place  
Routes 43 and 261 in Kent

~ Nets ~

Thursday nights  
8 PM  
on 146.895  
PL Tones  
110.9 Rootstown  
114.8 Kent

PCARS  
ARRL affiliated  
April 20, 2006



## From the President

I got my first ticket late 1967. Made my first contact in 1968. Had a few ham friends back then, but not many. It was hard to get motivated and get something moving. In the mid 70's, while a student at Akron U, I got involved in the radio club there, W8UPD. I made some friends and acquaintances there who I still count as among some of my best friends today. After college, I became a CW op and spent a lot of time on the air, mostly on my own. Later I got involved with CFARC, again met some people who I still count as good friends today, and learned a lot about Field Day operating. Now there's a black squirrel in my life!

The point is, Ham Radio is my hobby. It's my avocation. And as I look back on all the experiences I've had, I've always had the most fun when I've been *actively* participating with a group. I've always had the most fun when I've tried new and different activities. There's a big difference between being a ham with almost 40 years of experience versus a ham with 1 year of experience, repeated 40 times!

How about you? I don't know what your past has been, but the fact that you're reading this means there's a black squirrel in your life too! Most of you have been pretty active with PCARS - I want to congratulate you and thank you. How about trying something new? There's sure lots of things to try in this great hobby. If you look on the last page of this newsletter, there's a section

called PCARS Mentors. Just because you're trying out something new doesn't mean you have to go

into it without a clue. Get some help, make some new friends and have some fun! By the way, I'm waiting for someone to step up as a mentor for PSK-31 - even if you think you aren't a mentor, but want to give it a try and learn more about it - send me a note [wb8lcd@portcars.org](mailto:wb8lcd@portcars.org) - it might be easier if two of us try to figure it out together.

By this time next month, we'll hopefully have 9 new hams and maybe club members! The tech class has been a lot of fun and a great time for all of us. When these new hams show up at a PCARS

meeting, please, go out of your way to make them feel welcome! I've heard from many of you that one of the greatest assets we have as a club is our open and welcoming attitude towards someone coming just to check us out for the first time! As long as we maintain that spirit, I'm sure we'll continue to grow and have fun.



There's a black squirrel in my life now. Because of it I'm having the time of my life and I hope that each one of you has had a good time with PCARS.

But hang on - it can only get better from here!

73 For now,

**Tom - WB8LCD**



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## *From the Vice President*

Can you believe it! This is the November edition of the newsletter and next month we will have completed our first full year as a club. So



much has happened and we have had a bunch of amateur radio fun, which, after all, is one of our main goals. By the time you read this we may have added our fiftieth member. Who could have imagined all of this progress in such a short time?

An exciting piece of news for PCARS this month is that we have been assured a space on the 200 foot antenna tower at the former ODOT property on Oakwood Street in Ravenna. If you have been following news in the Record Courier

lately, you may have seen that ODOT has transferred the eight acre parcel of property with an office building, maintenance garage and other buildings, as well as the tower, to Family & Community Services, Inc. F&CS has committed to providing PCARS access to the tower and work space in the adjoining building, basically for free. You will be hearing more from club president Tom, WB8LCD, about the formation of a repeater committee as we explore our options for utilizing this terrific resource.

On October 19<sup>th</sup> we delivered the certificates to the KSU Student Center Programming office and the event coordinator expressing our appreciation for their assistance at the Black Squirrel Festival.

If you are interested in an upcoming communications volunteer opportunity, a few more volunteers are still needed for the Bentleyville 5K run and one mile walk on Saturday, November 11<sup>th</sup> in Geauga County. Contact Paul - N8QZ, at n8qz@yahoo.com.

Tom - WB8LCD, has a separate report in this edition about the Jamboree On The Air event that we held at the Center of Hope in Ravenna on October 21<sup>st</sup>. We had a good time, setting up two operating stations feeding two different antennas. It was disappointing that we did not have any local scouts attend, but the highlight of the afternoon for me was carrying on QSO's with scouts who needed the on-the-air time in order to complete their communication/ham radio merit badge. Planning and publicity for next year's event will start much earlier this year so that we can get the word out locally.

The Technician course at the Maplewood Career Center will soon be finished. We will be offering the Technician test at the VE session on November 7<sup>th</sup> at 7:00 p.m. If you know anyone interested in taking the Technician test, have them contact me at kc8pd@portcars.org so that we can include them that evening. In all likelihood we will be offering the Technician course again in the Spring. Some PCARS members have also expressed an interest in possibly having an upgrade class for the General license. Let Tom - WB8LCD, know if you are interested.

I have been invited to be the speaker at the Geauga Amateur Radio Association (GARA) on November 27<sup>th</sup> and at the 20/9 Amateur Radio Club's December 12<sup>th</sup> meeting in Canfield, which is

in Mahoning County. Both have asked for a presentation on my experiences in Mississippi after Hurricane Katrina. If you are interested in attending either of these meetings as a representative of PCARS, please let me know and we can make the trip together.

As always, we want to make sure that we are planning far enough in advance to give you plenty of notice about future events and programs. More importantly, we want to be sure that we are providing activities and information that **you** want. If you have any ideas or suggestions, please send them to me at [kc8pd@portcars.org](mailto:kc8pd@portcars.org).

**Jim - KC8PD**

## Paper Chase

For nearly the last year, I have talked about the certificates and QSL cards you could obtain. But sometimes the envelope that the certificate comes in is as interesting as the certificate itself. Below are a few of the envelopes that I have kept as they were intriguing in their own right.



Also if you send direct to DX stations, you receive an envelope with the local postage stamps.

If you look at the ARRL Auction site you will see a collection of stamps collected that way going for thirty-six dollars. If you were active in the CQ World Wide DX Contest, you probably worked a few countries that you could add to your collection of foreign stamps.

Hope to hear you in the pile-ups! 73

**Joe - W8KNO**

## Charlie the Tuner's HF Hi-Lites

Greetings from my shack to yours. It's November and the WX here has been pretty wet. I hope that I have found some interesting DX and IOTA items that might get you Hams to get on the HF bands and do some DX/Island work. So let's see what we have going on for November and even December.



## IOTA

**3CO** ANNOBON ISLAND - EA5BYP is QRV as 3C0M until November 4. Activity is on 80 to 10 meters using CW, SSB and RTTY. QSL to home call.

**A3** VK2GND will operate as A35GN from Tonga (OC-049) from Dec 25 - Jan 3. Look for him on or around 7050, 14195 and 14273 kHz. QSL via home call.

**FO** - FRENCH POLYNESIA - FO/F5JFU QRV from Tahiti, IOTA OC-O42, Moorea, IOTA OC-046, and Bora-Bora, IOTA OC-O67, from Oct 21 - Nov 19. Activity on 20, 15 and 10 m, and possibly 40 m, using CW, SSB & possibly RTTY. QSL direct to home call.

**SV** HA2VR, HA6NL, HA6PS, HA7JJS and HA7PL will be active on all bands CW and SSB as V8/HA2VR, SV8/HA6NL and J48NL, SV8/HA6PS and J48PS, SV8/HA7JJS and J48JJ, SV8/HA7PL and J48PL from Thassos Island (EU-174) from October 26 to November 8. QSL via home calls, direct or bureau.

**SV** SV1EEX, SV1GRM and SV1HER will operate as SX8F from Falkonera Island (EU-113) & lighthouse (ARLHS GRE-012) on Nov 15-19. They plan to operate SSB, CW, PSK, FSK441, SSTV and FM on 160-6 meters plus VHF, UHF and SHF. QSL via SV1HER.

**UA** R1ANC (UA1ZCK) at Vostok Base (UA-10 for the Antarctica Award), Antarctica (AN-016) is QRV every day between 00.00 and 16 UTC on 20 meters SSB (14160, 14176, 14200 kHz). Please note that the QSL route has changed again. The new QSL manager is UA1PAC himself, who says that he receives updates from Alex on a weekly basis. The new QSL cards are expected from the printer soon.

**V6** JA7HMZ active as V63DX from Pohnpei (OC-010), Micronesia on November 13-18. He will operate on all bands and modes, with an emphasis on 160 meters for Europe and North America. QSL via home call.

**VP9** G4BKI will be operating CW only as VP9KF from Hamilton Parish, Bermuda (NA-005) on November 1-15. QSL to W4/VP9KF (Paul Evans, 6809 River Road, Tampa, FL 33615, USA).

**VU7** The IARU affiliated Amateur Radio Society of India (ARSI) has announced further details about the VU7LD activity from the Lakshadweep Islands. A team of about 25 Indian operators "who have a proven record of operating in pile up conditions" is being assembled, and operations will take place mainly from Karavatti Island for the entire month of December. Initial plans are for eight stations to be QRV on all bands and modes. QSL via W3HNK.

## **DX**

**7Q** MALAWI - G0JMU is QRV as 7Q7HB until mid January 2007. He is active on 80 to 10 meters. QSL direct via G0IAS.

**JA** The Tohoku University ARC and the Osaka University ARC are operating memorial stations 8J7YAGI and 8J3YAGI to commemorate the 120th anniversary of the birth and the 30th anniversary of the death of Dr. Hidetsugu Yagi, the inventor of the Yagi-Uda antenna (patented in 1926). All of the QSOs will be confirmed automatically via the bureau; direct cards should be sent to JA7YAA (for 8J7YAGI) and JA3YKC (for 8J3YAGI).

**SM** John, SM5DJZ on 160-6 meters CW, SSB and RTTY as SD40JZ through November 2007. This is a special call to celebrate John's 40 years on the amateur radio bands. QSL via SM5DJZ, direct or bureau.

**VP5** Look for JA1XGI - CW, SSB, RTTY & other digital modes as VP5/W8XGI on Nov 4-7. QSL via home call.

Well that's it for this month. I hope that many of you will take advantage of getting on and working some of these stations. 73 from

**Chuck - K8CMP**

## ***ARRL Asks FCC to Upgrade 60 M Allocation & Privileges***

The ARRL is asking the FCC to expand 60-meter operating privileges and substitute a new channel for one that's often occupied by a federal government user. The League filed a Petition for Rule Making (PRM) October 11. The FCC has not yet assigned a rule making (RM) number to the petition nor invited public comments. The ARRL

Executive Committee okayed filing the PRM when it met October 7.

"These minor rule changes will substantially increase the flexibility in the use of the channels in the 5250-5450 kHz band and will as well facilitate Amateur Radio emergency communications in this important segment of the HF spectrum," the ARRL said in its petition.

Specifically, the League wants the FCC to authorize radio amateurs of General and higher class to run 100 W effective radiated power (ERP) instead of the 50 W it now permits and to allow Morse code and narrow-band digital modes, including PSK31 and PACTOR 3. It also asks the Commission to replace the 5368.0 kHz center-frequency channel with 5358.5 kHz, so amateurs can avoid federal government digital traffic on the current channel. The channel change stemmed from comments the ARRL received during a 2005 member survey. Operation on 60 meters would remain on a secondary basis, and radio amateurs would still have to avoid interfering with incumbent federal government and other services.

When the ARRL first petitioned the FCC for a 150 kHz-wide 60-meter band, the primary objection to granting the allocation came not from the Commission -- which initially proposed granting the allocation -- but from the National Telecommunications and Information Administration (NTIA), which administers federal spectrum. The five channels, upper sideband only, 50 W ERP and maximum 2.8 kHz bandwidth radio amateurs got represented a compromise worked out between the two federal agencies.

The NTIA is far more favorably disposed to the ARRL's latest request, however. A letter to ARRL earlier this year from Karl B. Nebbia, deputy associate administrator in the NTIA's Office of Spectrum Management said the Interdepartment Radio Advisory Committee (IRAC) had considered the League's requests and "would look favorably" on the channel change, use of additional modes and power increase proposals. Nebbia said the IRAC could not support a request for a 50 kHz-wide domestic secondary allocation, however.

The League expressed its gratitude to the NTIA "for its willingness to accommodate the needs of the Amateur Service for additional flexibility in the use of the channels allocated for its use on a secondary basis." The petition further expressed the hope that

the FCC eventually may consider allocating a domestic amateur band in the vicinity of the existing 60-meter channels

The League says Amateur Radio access to 60 meters over the past three years "has been successful without qualification," with no known instances of interference to federal users from radio amateurs. Nebbia's letter cautioned that digital users "must take care to limit the length of their transmissions" so federal agencies could readily reclaim a 60-meter channel in an emergency. NTIA said it would support the power hike "on the presupposition" that amateurs would continue to use voice-operated transmit (VOX) on USB phone. The ARRL's proposed Part 97 rule changes specifically accommodate these concerns.

*From the ARRL*

### *Bentleyville - WRECS*

This came in from our neighbor Paul - N8QZ, the President of the Western Reserve Emergency Communication Service (WRECS):

In case any of the nearby PCARS members don't have anything to do on Saturday 11/11/06:

Bentleyville is having the First Annual "Wayne Mislosky Memorial Run In The Park" A 5K run & 1 mile Fun Walk. Saturday - November 11, 2006 at the Bentleyville Park (Located at the corner of Liberty Rd. approximately 1-1/4 miles east of Route 91). All proceeds to benefit the Park Pavilion Project. For more information on the run, contact the City Village Hall at 440-248-8964.

To help out WRECS with the amateur radio communications, contact: Paul - N8QZ at: Phone (Day): (216) 577-4570 (Eve): (440) 247-7397 or E-mail: n8qz@yahoo.com

*Paul - N8QZ - President - WRECS*

### *PCARS 2 Meter Sprint Results*

The Portage County Two Meter Sprint, sponsored by the Portage County Amateur Radio Service (PCARS), scores are in and these are the results for the Mobiles:

1. KC8PD 1102 (team KC8PD & Laura)
2. KB8DPN 1054 (team KB8DPN & WD8DAU)
3. KD8CKP 738 (team KB8UUZ & KB8VJL)
4. WB9LBI 318 (solo)

For the Base High Power Stations, the results are:

1. K8CMP 245
2. KB8VJL 48

For the base Low Power Stations, the results are:

1. WB8LCD 208
2. N8WLE 142
3. KD8DFM 98
4. N8CUI 50

The Aeronautical Mobile winner is N8NBC even though he lost his log. He was the only balloon aeronautical mobile and is therefore declared the winner of that class.

W8KNO's log could not be counted since his log contained 3 mobile, 2 portable low power and 17 base high power and the calls originated from either Geauga or Portage County.

A review of the logs showed contacts from Geauga, Medina, Mahoning, Portage, Summit, Stark and Trumbull counties.

How many amateurs actually took part in the Sprint? Here is a list extracted from the logs received: WB8AJE, KD8BHX, KD8CEQ, KD8CKP, KD8CMM, K8CMP, N8CUI, KD8DFM, KD8ECB, N8DOD, KB8DPN, N8ECB, N8EQJ, WB8FEW, N8GIE, K8HNG, AB8IE, W8KNO, WB9LBI, WB8LCD, WD8MHR, N8NBC, KC8RJR, AB8SX, N4TIE, N8TUI, KB8VJL, N8WLE, WA8ZFD, W8ZL and K8ZWWY. The total is 31.

For everyone who participated, thank you and we hope to hear you again next year. There will be changes to make the sprint more interesting and insure you send in your logs.

*Joe - W8KNO*

### *Mark Your Calendars*

On the calendar for upcoming meeting topics & activities are:

- o **November 13th** club meeting – Tentative topics are Winlink 2000 and Airmail -  
~~ **PCARS Elections for 2007 officers** ~~
- o **November 15<sup>th</sup>** – Site visit at WOAC, Channel 67 transmitter and studio
- o **December 11th** club meeting – Christmas party
- o **December** - Santa-on-the-Air
- o **January 8<sup>th</sup>** club meeting – Amateur Radio Satellites, video
- o **February 24<sup>th</sup>** – Freeze Your Acorns Off

## Dueling DXpeditions? 2 Groups Set to Descend on Rare Lakshadweep Is.

NEWINGTON, CT, Oct 26, 2006 -- The second most-wanted DXCC entity, Lakshadweep Islands (VU7) may host two separate DXpeditions during December. A team sponsored by the Amateur Radio Society of India (ARSI) -- the International Amateur Radio Union (IARU) member-society for India -- will operate as VU7LD.



A second group, under the auspices of the National Institute for Amateur Radio (NIAR), has announced plans to operate as VU7RG, in honor of the late Indian Prime Minister Rajiv Gandhi, VU2RG. While the two DXpeditions would have multiple stations on the air simultaneously on various HF bands and modes for at least the first part of December, the Web sites for the respective DXpeditions do not mention the other's planned operation. The Daily DX (and QST "How's DX?") Editor Bernie McClenny, W3UR, cautioned this week that the two highly competitive organizations carefully coordinate their on-air activities, if the DXpeditions to avoid chaos.



The Lakshadweep Islands are located in the Arabian Sea off the southwestern coast of India.

If both VU7 DXpeditions happen radio amateurs will be on the air from 4 VU7 island in early December. The ARSI DXpedition will run until Dec 30.

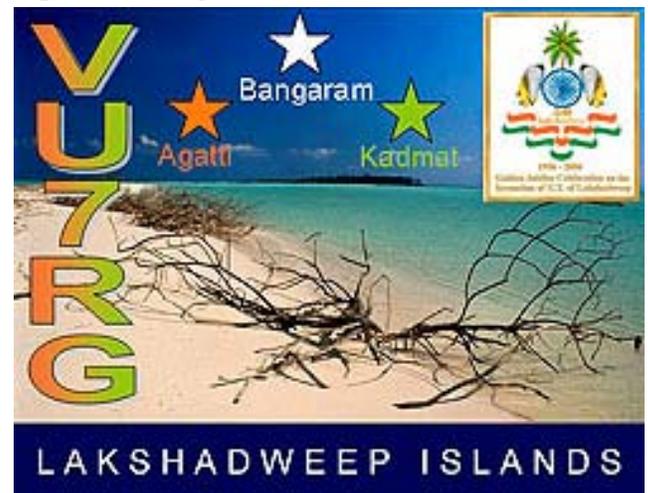
"It is possible that up to six or more stations between the two teams may operate at the same time on the same band and mode," McClenny pointed

out in the October 26 edition of The Daily DX. He said both teams are aware of concerns within the

DX community and on the part of potential DXpedition sponsors regarding the possibility for confusion caused by overlapping operating frequencies that could decrease the efficiency of the operations as well as opportunities to get into the VU7LD and VU7RG logs.

The Amateur Radio Society of India DXpedition will operate as VU7LD. [ARSI]

"With this in mind, it will be important for some kind of frequency management (ie, to assign strict frequency slots for all modes and bands to all operation sites of both groups)," McClenny advised. "This will ensure well-regulated and trouble free operations." He says members of the two groups need to work out an agreement before their DXpeditions begin.



The proposed VU7RG QSL card. [NIAR]

ARSI's VU7LD DXpedition will run from December 1 until December 30, while NIAR's VU7RG DXpedition is set for December 1 until December 10. A three-day hamfest and conference will kick off the NIAR DXpedition. Earlier NIAR announcements had set the event for the January 15-25, 2007, time frame, but ARSI's announcement that it would mount its own VU7 DXpedition reportedly drove NIAR to reschedule.

Questions remain as to whether the Indian government has authorized NIAR's VU7RG DXpedition, but event organizers called these "rumors," and assured that the VU7 licenses "are getting processed in a regular way." NIAR organized and sponsored a DXpedition and hamfest-conference in the Andaman Islands (VU4) earlier this year.

Fifty or more hams from India and elsewhere -- including a number of well-known DXers -- have

signed on to fill the VU7RG operating positions. Approximately two dozen radio amateurs from India will handle VU7LD operations on CW, SSB and digital modes.

Part of the Laccadive Islands, Lakshadweep -- the smallest union territory of India -- is located in the Arabian Sea some 200 to 300 km off the southwestern coast of India. The territory marks its 50th anniversary this year. The VU7LD team will operate from Kavaratti Island, while the VU7RG DXpedition will take place from sites on Agatti, Bangaram and Kadmat islands.

### ***From the ARRL***

*Editor's Note: Chuck - K8CMP has been talking about this special DXpedition and this will be your chance to contact a DX entity that is VERY rare - mark your calendars for this one! And, yes, it can be done with minimal power and a simple dipole antenna. Just keep trying!! Chuck's enthusiasm in getting these rare entities in the log book is starting to spread to more PCARS members. GET ON THE AIR!!! Make Contacts!!!! Have FUN in this great hobby of ours!*

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### ***EmComm***

The following is excerpted from the ARRL newsletter and an October 4th posting on the ARRL website:

#### **Measure Makes Amateur Radio Part of Emergency Communications Community**

*"A section of the Department of Homeland Security (DHS) 2007 Appropriations Act, HR 5441, formally includes Amateur Radio operators as a part of the emergency communications community.*

*Congress approved the measure before adjourning for its pre-election break. Amateur Radio is included within the legislation's Subtitle D, Section 671, known as the "21st Century Emergency Communications Act." Radio amateurs are among the entities with which a Regional Emergency Communications Coordination Working Group (RECC Working Group) must coordinate its activities. Included within the DHS's Office of Emergency Communications -- which the measure also creates -- RECC Working Groups attached to each regional DHS office will advise federal and state homeland security officials.*

*In addition to Amateur Radio operators, RECC Working Groups also will coordinate with communications equipment manufacturers and vendors - including broadband data service providers, local exchange carriers, local broadcast media, wireless carriers, satellite communications services, cable operators, hospitals, public utility services, emergency evacuation transit services, ambulance services, and*

*representatives from other private sector entities and nongovernmental organizations.*

*According to the bill, the RECC Working Groups will assess the survivability, sustainability and interoperability of local emergency communication systems to meet the goals of the National Emergency Communications Report. That report would recommend how the US could "accelerate the deployment of interoperable emergency communications nationwide.*

*RECC Working Groups also will be tasked with ensuring a process to coordinate the establishment of "effective multi-jurisdictional, multi-agency emergency communications networks" that could be brought into play following acts of terrorism, natural disasters and other emergencies.*

*At the state and local level, RECC Working Groups will include state officials; local government officials; law enforcement; local fire departments; 911 centers; state emergency managers, homeland security directors or representatives of state administrative agencies; local emergency managers or homeland security directors, and other emergency response providers.*

*At the federal level, RECC Working Group members will include representatives of the DHS, the FCC and other federal departments and agencies responsible for coordinating interoperable emergency communication with or providing emergency support services to state, local and tribal governments. "*

So, what does all of this mean for amateur radio operators that want to participate as emcomm operators? Well it is way too early to tell. What we can say is that it will take some time before the Department of Homeland Security formulates its rules and operational structure for the Regional Emergency Communications Coordination Working Groups and there will be a lot of players that will want to have input into the rule-making process. All have a significant interest in the outcome and how it will affect them, particularly commercial entities.

One of those is the ARRL that will be advocating on behalf of amateur radio operators. It is unclear whether other amateur radio organizations or representatives will be heard from.

The scope of the RECC Working Groups will be significant and the scale of their authority will be large because they will have a regional focus. When you consider the list of involved interests, it should be obvious how amateur radio will be considered a small player in all of this. Don't think so? Just remember how the FCC was so quick to let the commercial interests of the proponents of the

unproven (and still unsuccessful) BPL trump the licensed service of ham radio.

As was mentioned in last month's column, the lack of a coordinated and well-organized ham radio emergency service with a national, regional and local structure and uniform practices and procedures will continue to detract from amateur radio's ability to define itself and assert its role in twenty-first century emcomm services.

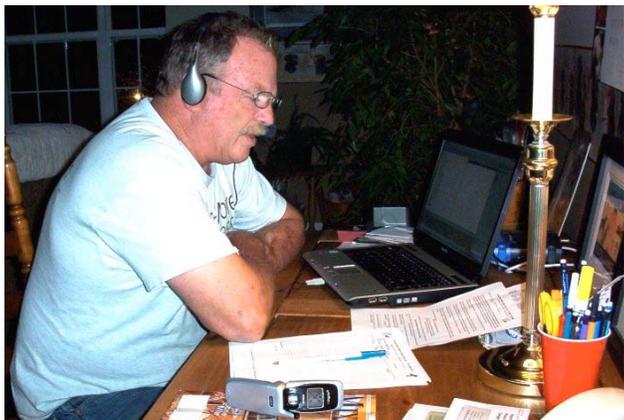
The good news is that the statute gave ham radio a place at the table. The big question will be whether amateur radio is prepared for the task.

*Jim – KC8PD*

### ***My Night as PCARS Net Control***

Hi there PCARS members. My name is Randy, N6TL and I was Net Control for my first time this past Thursday. I had contacted Tom - WB8LCD and asked if he would stand aside and let me try it on that evening as I was going to be in Tenn. and could be able to get on the air on time. Plus, I wanted to surprise a few people that I know personally.

You see, I actually live in Calif. and with work it is a rush for me to even get home to get on the Net on Thursday's. Tom thought that was a good idea and would also be a good test of Net Control using Echo Link. We



N6TL running the PCARS Thursday net from Tennessee

had also planned for him to be prepared to take over in case there were any problems. And it turned out there was. About 3/4 of the way through the Net, I got bounced off Echo Link. What a helpless feeling. I tried calling Tom on the land line but got no answer and I kept trying to reconnect and finally did and regained control. So it seems like our preparation paid off. I had requested that any one

not be too fast on the mic key as I'm sure most of you know, Echo Link has a slight delay. Everyone seemed to honor that request and I thought the Net went quite well. I wasn't as nervous as I thought I was going to be. When I first started the Net, I'm sure you could tell I was reading a script but as things went on I seemed to relax a bit and not sound so stiff. My whole point to this is, the net is very easy to run and there is plenty of help out there. So if you have not yet had the chance to be Net control, just sign up and go for it. I have listened to quite a few of the Nets and with the script and log it is pretty straight forward. Plus, if I can do it any one of you can. Just give it a try. I'm already thinking about what I can do different or better next time I try. I'd also like to thank everyone who checked in for helping make things work for me. 73's and I'll catch you down the log.

*Randy - N6TL*

### ***Contests & Club Scores***

On the net, Thursday October 19th, it was suggested that all the club members that could be active during the contest and submit your entry with the PCARS club affiliation.

It was mentioned that you send your logs to me for consolidation, this is not true. You need only enter the club name on the entry form or if you send your log via e-mail make sure it is in the correct cabrillo format and enter "Portage County Amateur Radio Service" on the "CLUB" line.



If you do not have a logging program that generates the cabrillo log, you can go to [www.b4h.net/cabforms](http://www.b4h.net/cabforms) and enter your information there. Hope to hear everyone during the contest.

*Joe - W8KNO*

**Editor's Note:** When you submit your score & put down a club name - Your score still goes in as YOU. The score is just added to all the other PCARS club scores and then is listed as a total club score. So don't worry, **your** score still gets in there.



## Jamboree On The Air

Also known as “JOTA” the Boy Scout Jamboree on the Air is an annual event designed to get scouts (both Boy and Girl) on the air and interested in ham radio. Since 1958 when the first Jamboree on the Air was held, millions of Scouts have met each other through this event. Many contacts made during JOTA have resulted in pen pals and links between Scout troops that have lasted for years. JOTA is held the third weekend in October each year.



PCARS participated in JOTA this year by setting up a station at the Center of Hope in Ravenna. Although the Great Trail Council was notified of



our location, no local scouts came out to participate. But that doesn't mean we didn't participate! Most of the stations that had a large scout participation were set up as part of local scout Jamboree or

activity days. Since they had a captive audience, their participation was high, BUT, they still needed someone to talk to! That's where PCARS got to be involved.

We set up two stations at the Center of Hope, one on twenty and the other on 40 meters. Most of the contacts with other JOTA participants were on 40 meters. Jim - KC8PD talked with several scouts who were working towards their Radio



WD8DAU & WB8LCD

Merit Badge. One of the requirements was to have a 10 minute QSO with another station. Jim did a good job of helping them get over their “mike-shyness” and keep the conversation going!

This was also another good experience for PCARS. Being able to move into a new location and get a radio station operational in a short time is

a good skill to have. If called upon, we will be able to set up and get on the air where ever needed. Our “go kits” get adjusted with each outing and for those of us who operated, it gives us a chance to become familiar with equipment other than our own. Thanks to all who stopped by.



Tom - WB8LCD

## Swap-N-Shop

FOR SALE: **Astron RM-35M**, rack mount power supply. Separate Voltage and Amp meters. 35 amp peak, 25 amp continuous. \$100 or best offer. contact: Tom by e-mail at [wb8lcd@portcars.org](mailto:wb8lcd@portcars.org)

## Happy Birthday PCARS Members

Only 1 PCARS member has a birthday in November:

**KB8UUZ - Tom Parkinson**

**PCARS 1<sup>st</sup> birthday is on November 14th**

*So, I guess there are 48 people celebrating a birthday, too!!*

## Antenna Topics

Welcome Back! This issue we pick up where we left off in September, and I'll start right in with a discussion of the “decibel”, expressed as dB. We can use the term decibel without having a complete understanding and yet still get a sense of it's meaning. Basically what the term decibel depicts is either a voltage or a power ratio.

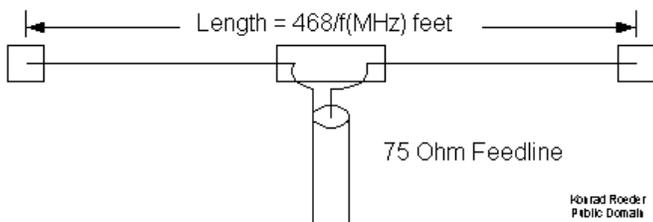
From the *Antenna Handbook*: “The decibel is a practical unit for measuring power ratios because it is more closely related to *the actual effect produced at a distant receiver* than the power ratio itself. One decibel represents a just-detectable change in signal strength, regardless of the actual value of the signal voltage...The main reason a decibel is used is that successive power gains in decibels may simply be added together. Thus a gain of 3 dB followed by a gain of 6 dB gives a total gain of 9 dB. A reduction of power is handled simply by subtracting the requisite number of decibels.”

Without going into the math (Like I said in September “Hey, I'm not a rocket scientist!”) just remember that 3 dB represents a gain of 2x, 6 dB

represents a gain of 4x, 10dB represents a gain of 10x and 13 dB represents a gain of 20x. Now, if a transmitter puts out 100 watts, you have 6 dB of feed-line loss and 9 dB of antenna gain, the system has a gain of 3 dB (-6 + 9). A 3 dB gain represents a 2x factor, so the “antenna system” (feed-line and antenna) results in a signal twice as strong at the receiver as that same 100 watts delivered directly to the reference antenna. Positive numbers – good. Negative numbers – bad.

To put this in perspective, if I have a 100 watt transmitter and limited cash, where do I get the best return on my money? Trick question, depends on lots of factors. However, *my* number one suggestion would be the best transmission line available (lowest loss) and the shortest amount possible. Number two – antenna height and, number 3 – gain antenna (more on this later). I'm a QRP'r – you didn't think I was going to suggest an amplifier did you?

So now we get to the basic Amateur antenna – the dipole. Remember, a dipole has a theoretical gain over an isotropic antenna of approximately 2.14 dB. The gain is broadside to the dipole with a null at the ends.



Dipoles are made from a conductor (usually wire or aluminum tubing)  $\frac{1}{2}$  wavelength long. The formula to calculate the length of a dipole in feet is:  $L = 468 / \text{Frequency (in MHz)}$ . A 40 meter dipole would be approximately 64  $\frac{1}{2}$  feet long. ( $468 / 7.245 = 64.596273$ ) If you're making a dipole, its best to start just a little long and trim for the best SWR. This allows you to take into account the effects of ground and other nearby objects. For best results the dipole should be at 0.2 wavelength above ground, minimum. Lower heights will affect the impedance at the feed point. The dipole is cut into two sections at the exact center (hence *dipole*) and fed at that point with the feed-line.

A dipole configured so both ends and the center are at the same height is called a horizontal dipole. If it is supported in the center and both ends slope downward, it is an inverted Vee. It can be set up as

a sloper, where one end is elevated and the other end is at ground level, or, if sloping perpendicular to the ground it is a vertical dipole. It is an easy antenna to erect with all these choices of configuration, most hams erect based on the supports and space they have to work with.

Don't let this simple antenna fool you – it can be a great performer. The cost is next to nothing, it can be put up without any special supports (trees work great), and it's an easy antenna to build and have ready to deploy in your “go kit”. Next time we'll talk about some of the other simple wire antennas that can be home-brewed without too much trouble. The G5RV, Windom, Half-Square and Zepp to name a few.

**Tom - WB8LCD**

## ***ARRL Dues Rebate to PCARS***

Now that we are affiliated, one of the perks for the club is when you re-new your ARRL dues through the PCARS, the club gets to keep \$2. Or, if your a new ARRL member the rebate is \$15 for PCARS.

A new member is defined as any individual who has never been a member of ARRL or any individual who has not retained a membership for two or more calendar years prior to the application submission. Family, Blind or 21-and-under discounted memberships are not applicable for any discount. So, when it's time to re-new, or if you join the ARRL - do it through the club, so PCARS can cash in on that benefit.

## ***Special event 4U60UO***

Special event 4U60UO to mark UNESCO 60th anniversary celebration (Oct 27, 2006) -- Members of the Association of Radioamateurs of Paris (ARP) will operate special event station 4U60UO to mark the conclusion of the 60-week long 60th anniversary celebration of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The station will be on the air from UNESCO Headquarters in Paris Saturday and Sunday, November 4-5. 4U60UO will operate all



modes -- including CW, SSB, SSTV, PSK31, satellites and hamDRM -- and all bands from 1.8 MHz to 47 GHz (except for 6 meters). Chartered November 16, 1945, UNESCO marked its 60th anniversary by selecting 60 themes to highlight the 60 weeks between September 5, 2005, and November 4, 2006. A special QSL and certificate will be available from ARP.--Laurent Beugnet, F6GOX

*From the WWW*

## CW on TV

You never know when ham radio will show up. When the new TV show "Jericho" title comes on screen there is CW in the background. For the first episode (pilot) the transmission was: JERICHO PILOT. That caught my attention, so now I really listen when the show is on TV.



For the second episode the transmission was: JERICHO FALLOUT. Fallout was the title of that night's show. During the show the first CW transmission copied by the former St. Louis police officer said, "Code Delta Code Delta 2 minute warning." The second CW transmission said, "Score remains scoreless."

So if you watch the show - try and see what else is sent in CW.

*Tom - KB8UUZ*

## PCARS FYAO Special Event

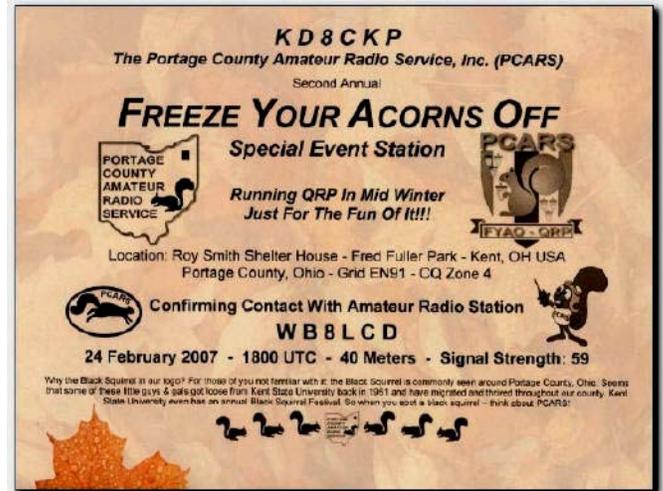
Portage County Amateur Radio Service, Inc. (PCARS) 2nd Annual "Freeze Your Acorns Off" (FYAO) QRP Special Event Station KD8CKP will be active in the General areas of the 15, 20 and 40 meter bands.



Join us on Saturday - Feb 24, 2007 - We'll be on the air from 10:00 am EST until 6:00 PM EST

Our transmitters will be at the Roy Smith Shelter at the Fred Fuller Park in Kent, Ohio in the middle of WINTER.

Yes, we'll be braving the cold snowy weather of North Eastern Ohio to set up QRP stations using portable power and antennas.



A beautiful color (suitable for framing) 8 x 10 certificate will be available if you send your QSL cards and a SASE to the club call trustee - KB8VJL.

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

*Listing on: 73se.com*

## Tips for Good Voice & Net Ops

*(for those who want to sound courteous and intelligent - An EM basic studies training module)*

### A few "Do's" and "Don'ts":

**DON'T** - Chew food, gum, or tobacco) while on the air. (Morse operators excepted!)

**DON'T** - Operate (voice or CW) while intoxicated. You will sound great.. but only to yourself.

**DON'T** - Tune up without identifying with your FCC call sign. This is illegal.

**DON'T** - Make check of make final adjustments to your SWR within three 3 kHz of a frequency in use.

**DON'T** - Transmit music or other background noise.

**DON'T** - Try to run a net on a "HT"! If you don't have an adequate radio...let somebody else do it.

**DO** - Keep a glass of water (or other non-intoxicating beverage) handy to "wet your whistle" when needed.

**DO** - Know what time it is. We used to have a ham in my area that would tune up on a net frequency, and then without listening first and with his audio

gain turned DOWN, would push his PTT and just start talking (often doubling upon another station). After he finally stopped talking, and he was informed that a net was in progress, his standard answer was usually: "Net? What net? What time IS it?" Followed with an "I'm sorry" and proceeded to tie up the frequency by apologizing for at least 5 minutes!

**DO** - Welcome a station checking in for the first time. But don't over do it by "gushing" all over the newcomer. (This is almost as bad as giving them a "cold shoulder".) Always remember that they may not know all the nuances of a particular net, so treat them with dignity and respect. If time permits, tell them a little about the net. If your net includes a round table, invite them to participate and tell the group a little about their station. Hams often check into a net to obtain a signal report on a new transmitter or antenna. Occasionally you'll have a lid or blowhard check in who has a speech to make and runs on and on with (what seems like) an eternity. One way to handle this is to thank him/her for "visiting" the net...and then move on in a business-like manner. If you feed their ego by allowing them suck you in to a bunch of chatter...they'll be back. And you may lose a few of your regular members

**DO** - Avoid the "Good Old Boy syndrome". Sure, many net stations have been regulars for years. You all know each other by your first names and can recognize each operator by their voice. A newcomer who has just checked in for the first time, will feel estranged if he or she feels like they have just stepped into a clique and will rarely stick around...or return. Also, being able to recognize each other by voice...does not excuse any of you from always using good net operating practices.

**DON'T DO WHAT (SOME) OTHERS DO! INSTEAD... SET THE STANDARD FOR GOOD NET OPERATIONS**

*From the World Wide Web*

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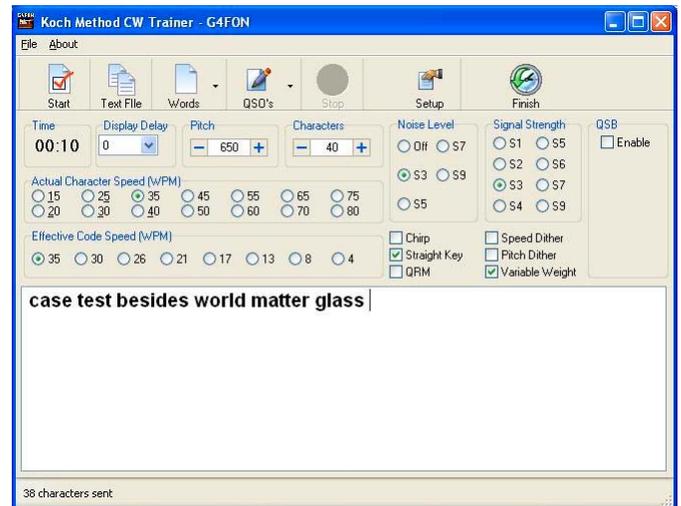
## **Hamfest Calendar**

**28 Jan 2007** - Tusco ARC - <http://noard.com/tuscoarc.htm>  
Talk-In: 146.730 (PL 71.9) - Contact: Gary Green, K8WFN -  
32210 Norris Road - Tippecanoe, OH 44699 - Phone: 740-  
922-4454 - Email: tuscofest07@hotmail.com - Wallick  
Auction House - 965 North Wooster Ave - Strasburg, OH

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## **G4FON Koch Morse Code Trainer**

For those of you using the G4FON Koch Method Morse trainer, version 9 was just released. It features a more flexible user interface and a few other goodies.



Check it out at: <http://www.g4fon.net/> Have fun learning the code. 73

**Ray - G4FON**

### **Background on the Morse Trainer**

When I returned to Amateur Radio my CW was decidedly rusty. What I felt I needed was a CW Trainer to get my speed back. I looked around the Web and found an article by Dave Finley - N1IRZ on a method of CW training developed by a German psychologist called Ludwig Koch back in the 1930's.

Reading though Dave's article, I decided that it all made a lot of sense. Basically you start off learning the code at the speed you would like to achieve. Unlike the Farnsworth method which seeks to reduce the gap between the letters as you become more efficient, Koch came up with the idea that you should start off just learning two letters at full speed and add an additional letter once you reach 90% proficiency until you have mastered them all. Since you are only learning one new letter or figure at a time, your frustration is significantly reduced.

Dave Finley gave a suggested order for learning the letters and figures and recommended a program called Super Morse to use as a trainer. I quickly realized that Super Morse offered more features than were required to learn Morse by the Koch

method and decided to write my own program orientated towards the Koch method.

The resulting program runs under Windows 9x, NT and XP and requires a sound card. You are welcome to download a copy.

Positive feedback from users of the software make it clear that the Koch method is a very effective way of both learning Morse and also improving your Morse skills.

**Ray - G4FON**

## ***PCARS Meetings - Mike's Place***

The Portage County Amateur Radio Service, Inc. (PCARS) meets on the second Monday of every month at Mike's Place - 1700 S. Water St. - Kent.



Meetings start at 7 PM sharp and all are invited to attend. You can find out a whole lot more about Mike's Place on the web at:

**[www.mikesplacrestaurant.com](http://www.mikesplacrestaurant.com)**

You can look over their entire menu and see some interesting stuff on the web site. Check it out!

## ***November Contest Calendar***

PSK63 Sprint	2000Z-2200Z, Nov 3
ARRL Sweeps, CW	2100Z, Nov 4 to 0300Z, Nov 6
ARRL EME 50-1296 MHz - Part 3	0000Z, Nov 11 to 2359Z, Nov 12
Kentucky QSO Party	1400Z, Nov 11 to 0600Z, Nov 12
CQ-WE	1900Z, Nov 11 to 0500Z, Nov 13
NAQCC Straight Key/Bug Sprint	0130Z-0330Z, Nov 16
ARRL Sweeps, SSB	2100Z, Nov 18 to 0300Z, Nov 20
RSGB 2nd 1.8 MHz, CW	2100Z, Nov 18 to 0100Z, Nov 19
Run for the Bacon QRP	0200Z-0400Z, Nov 20
CQ Worldwide DX, CW	0000Z, Nov 25 to 2400Z, Nov 26

## ***Center of Hope Holiday Food Drive***

While many PCARS members have become familiar with the Center of Hope as the site of some of our activities, including the Jamboree on the Air and our fox hunting antenna construction activity. The Center has graciously opened its doors to our members for these activities and also provided some of the food for Field Day.

What you may not know is the Center of Hope is a program of Family & Community Services, Inc., that was founded over ten years ago by the late Sister Jordan. It provides hot meals and distributes

food and home products to thousands of our county's less fortunate residents every year.

As the fall ends and winter approaches, the staff at the Center of Hope face the enormous task of trying to help brighten the Thanksgiving and Christmas holidays for the Center's clients. You can imagine how distressful it could be to not be able to provide a holiday meal for your family.

This is PCARS opportunity to return the favor to the Center. Let's assist the Center of Hope in meeting its goal of helping as many families as possible at Thanksgiving and Christmas.



We are asking that all PCARS members who attend the meetings in November and December make a donation of food or, if you wish, a financial contribution to the Center of Hope. Donations are tax deductible because the Center is part of a 501(c)(3) organization.

Let's show how generous the spirit of amateur radio operators can be by offering our support to an organization that helps so many families in our community! Any items or funds donated at a meeting will be delivered the next day to the Center of Hope.

**Jim - KC8PD**

## ***You Might Be Addicted to Ham Radio If..... (part 2)***

While touring a museum, you see medieval chain mail and think of it as a practical pedestrian mobile antenna solution.

You think the saying 'no pain, no gain' applies to you.

When your boss tells you that don't have enough drive, you talk louder.

You always park on the top floor of the deck, just in case you have to wait in the car later.

Your wife says 'the kids need to be fed' and you first wonder what their impedance's are.

If the first things you check out, when house hunting, is a room for the shack and where you can put up antennas.

In searching for a house, your fiancée quickly learns that it is "all about the HAAT" (height above average terrain)

Searching for a house, you give your realtor color-coded topographical maps showing the highest spots in town

and/or the instruction to "find me a house where I can stand in the driveway and say "Wow! What a view!"

You sign a purchase agreement on a new house, but back out because the seller's failed to disclose that the property is under a homeowner's association. (Then the sellers try to get an exemption for your planned tower from the HA, but fails.)

You try to teach your unborn offspring Morse code by tapping on your wife's enlarged abdomen while loudly saying "dah-dit dah-dit, dah-dah-di-dah!"

Your garage has enough cable, antennas, masts, generators, etc. to put together one large or two small Field Day operations (or wire a half-dozen houses for RF, data, etc.).

You translate any Morse code used in pop music, commercials, the soundtracks of movies, etc. for anyone who will pay attention.

Your local TV station warn of bad reception due to atmospherics and you immediately rush upstairs to check the VHF bands!

**Russ - KB8DPN**

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**November Field Trip - Site Visit to Channel 67 - WOAC**

Thanks to the gracious invitation of Glenn Foldessy - KA8CMD, PCARS members will have an opportunity to take a guided tour of the WOAC, Channel 67, studio and transmitter at 7:00 p.m. on Wednesday, November 15<sup>th</sup>. Glenn is the Station Manager and Chief Engineer at WOAC and holds his Extra Class amateur license.

The station (whose call sign was derived from Ohio Akron Canton) had been a part of the E.W. Scripps Company until last month when Scripps announced that WOAC was one of the stations that it was selling to Multicultural Television of New York. Scripps had most recently operated the station as on of its Shop at Home units.

The facility has both studio and transmitter operations. It is licensed for channel 67 at 5,000 kilowatts and also has a 1,000 kilowatt digital signal on channel 47, with a separate Special Temporary Authority to operate at 17.3 kilowatts ERP. The channel 67 antenna is mounted on the tower at 148 meters.

Of particular interest to area hams, the tower also holds that antenna for the N8BHV repeater that operates on 444.3 MHz. That antenna is up at

around 350 feet so you can understand why it has such good coverage!

This is a great opportunity for all of us to get an up close look at the equipment and technology that put a high power analog and digital television station on the air. We will have more information about this field trip at the November meeting and will circulate a sign-up sheet for those who would like to attend.

The tower can be seen on the north side of I-76 in Brimfield, just east of the State Route 43 exit. To find the facility: if you are westbound on I-76, exit at St. Rt. 43 and make a hard right on Edson Road before you reach Route 43, follow Edson Road to Sherman Road and turn right on Sherman and follow it to the station driveway which is north of I-76. If you will be coming either north or southbound on State Route 43 (or if eastbound on I-76, exit north on Route 43), turn east on Howe Road (about a mile north of the interstate) and follow it to Sherman Road, turn right on Sherman and follow it to the station drive.

**Jim - KC8PD**

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**PCARS Thursday Net Schedule**

Following is the net control schedule as it is right now. If you see a date as "open" and would like to give it a try, just let me know. We have a log sheet and a script to use so it really is easy.



You'd be surprised how it helps you get names and calls together after you've done it a few times! If you've ever called on in an emergency, having done it in a more relaxed setting can make you a lot more effective under pressure! Give it a try.

11/02	K8CMP
11/09	KB8UUZ
11/16	KC8TYR
11/23	WB8LCD
11/30	open

12/07	K8CMP
12/14	KB8UUZ
12/21	KB8DPN
12/28	KC8PD

Everyone is encouraged to check in, and, to try out being a Net Control Operator.

**Tom - WB8LCD**

## 2 New "Q" Signals

The May-June 2006 issue of the RAC magazine "Canadian Amateur" contains a handy new Q-signal courtesy of ZL1AN.

QHK : How many knobs does your radio have?

QHK 31-7 : My radio has 31 knobs, but I only understand 7 of them

## Pictures from the October PCARS Meeting



John Mason, interim Portage County EMA Director



## Pictures from PCARS - JOTA 06



## Thanks

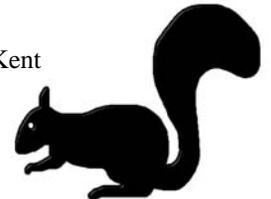
Well, that's the 10th issue of the PCARS newsletter the RADIOGRAM. I made the fonts a bit larger, seems the old 10 point font was looking a bit small to me when printed.... must be old age?! Anyway, I made it a bit larger for everyone to enjoy reading the newsletter. I appreciate your help in getting material for me, all the members look forward to getting this newsletter every month, so keep sending me those inputs! Thanks goes out to this months contributors: **WB8LCD, KC8PD, W8KNO, K8CMP, KB8DPN, N6TL, KB8UUZ, N8QZ, G4FON, ZL1AN, ARRL**, and the **World Wide Web**. With your continued help – we can make this a great newsletter.

**Tom - KB8UUZ**  
Newsletter Editor





**The Portage County Amateur Radio Service, Inc. (PCARS)**  
 meets the 2<sup>nd</sup> Monday of each month at 7:00 PM at Mike's Place – Routes 261 & 43 in Kent  
 All are welcome to attend – Drop in and say hello!



***“When All Else Fails – Amateur Radio Works”***

**PCARS Uses Repeater: 146.895 MHz (PL 110.9 – Rootstown, Ohio PL 114.8 – Kent, Ohio)**

**Repeater is graciously provided by N8KW for use by PCARS members**



**PCARS Elected Officers**

Office	Call	Name	E-Mail
President	WB8LCD	Tom Sly	wb8lcd@portcars.org
Vice President	KC8PD	Jim Aylward	kc8pd@portcars.org
Treasurer	KB8UUZ	Tom Parkinson	kb8uuz@portcars.org
3 Year Trustee	KB8VJL	Al Atkins, Sr.	kb8vjl@portcars.org
2 Year Trustee	W8KNO	Joe Wehner	w8kno@portcars.org
1 Year Trustee	KB8DPN	Russ Anderson, Sr.	kb8dpn@portcars.org

**PCARS Appointments & Committees**

Awards	W8KNO	Joe Wehner	w8kno@portcars.org
Call Trustee	KB8VJL	Al Atkins, Sr.	kb8vjl@portcars.org
Field Day	KC8PD	Jim Aylward	kc8pd@portcars.org
KD8CKP QSL Mgr.	KB8VJL	Al Atkins, Sr.	kb8vjl@portcars.org
Net Controller	WB8LCD	Tom Sly	wb8lcd@portcars.org
Newsletter	KB8UUZ	Tom Parkinson	kb8uuz@portcars.org
PIO	KC8PD	Jim Aylward	kc8pd@portcars.org
Secretary	KB8UUZ	Tom Parkinson	kb8uuz@portcars.org
Web Master	KB8DPN	Russ Anderson, Sr.	kb8dpn@portcars.org



**PCARS Mentors – Need some help or advice?**  
**Contact by email at <callsign> @portcars.org**

1. Wire Antennas	15. Computer Logging	Code	Contact
2. Beam Antennas	16. QSLs	17	Jim - KC8RKV
3. APRS	17. Echo Link	5, 24	Bill - WB9LBI
4. Contesting	18. Help - Icom	1, 4, 9, 12, 14, 16, 18-706, 19-TS690, TH22AT	Tom - KB8UUZ
5. CW Operation	19. Help - Kenwood	3, 6, 8, 12, 14, 17, 23, 25, 20. - FT100 - VX5, 19. - TH-F6 - D700	Russ - KB8DPN
6. DF (Fox Hunt)	20. Help - Yaesu	1, 5, 10	Tom - WB8LCD
7. DXing	21. Help - Boat Anchors	2, 6, 14, 17, 23, 25	Jim - KC8PD
8. Experiment/Ckts.	22. Amplifiers	4, 5, 9	Joe - W8KNO
9. HF Phone	23. EmComm	2, 7, 9, 12, 20, 21	Chuck - K8CMP
10. QRP	24. Traffic Handling		
11. Satellite	25. FEMA / NIMS		
12. VHF	26. Computer Hardware		
13. PSK-31	27.		
14. Mobile (install)	28.		

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This is the **Electronic E-Mail** version of the **PCARS Newsletter, the RADIOGRAM**. The advantages to receiving the newsletter are: You get **COLOR** pictures, **NO** postage needed, and it's delivered right to **YOUR** e-mail box! If you know of anyone else that would like to receive this newsletter, please have them send me an e-mail. 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. To remove your self from the mail list – send an e-mail to me at: kb8uuz @ portcars.org

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

Tom Parkinson - KB8UUZ - Newsletter Editor  
 9992 State Route 700  
 Mantua, OH 44255

**PCARS Web Site: [www.portcars.org](http://www.portcars.org)**



NLC