



The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works

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

Match 2018 - Volume 13 Number 3

kr 56.92

SECRET **Listeners**



FYAO 2018 RESULTS



Spring Forward !!



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



Feature Articles

From the PCARS President	3
From the PCARS Vice President	5
Youth DX Adventure 2018 - PJ2T	6
Ham Plates in CQ Magazine	7
The Secret Listeners	7
Planning for Field Day 2018	9
Where's the Future?	10
Do Numbers Stations Really Instruct Spies?	12
WARC Bands	16
Homebrew Code Practice Oscillator	17
Helping Hands Get the Tower Up	19
DXpedition to Spratlys Reset for March	20
New Mobile DXCC Operating Award	21
Contest University 2018	22
Fun with Route 66 On The Air	23
Tech Notes - The Mystery of Wire Gauge	25
FYAO 2018	27
3Y0I Bouvet Island DXpedition Revived	35

Mark Your Calendars

Schedule of Events	6
VE Test Sessions	11
Hamfest Calendar	15
SKYWARN™ 2018	18
Net Info & NCS Schedule	26
Daylight Saving Time - March 11th	26
Contest Calendar	37
Meetings, PCARS	39
Important Dates	43

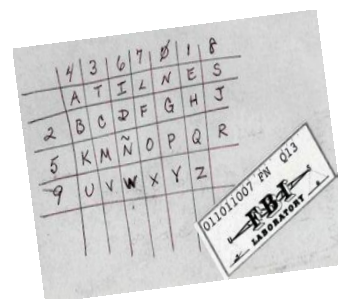
Regular Departments

SIG - Antennas	5
Happy Birthday	8
Paper Chase	8
PCARS Yahoo Group	17
PCARS Patches & Stickers	22
SIG - DX/Contest	23
SIGs QRP, CW & Linux for Hams	24
Charlie the Tuner's HF High-Lites	30
SIG - Digital	33
Swap-N-Shop	36
Member Ham License Plates Wanted	38
PCARS on YouTube	38
Pictures from the February PCARS Meeting	40

Finals

Thanks & 73	45
Fine Print	46

Coming in the April Issue - HAMVENTION® 2018 Info



From the President

Jim, AC8NT
PCARS President



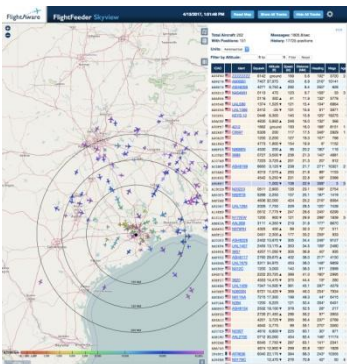
Growing our hobby!

A number of clubs including ours are creating programs to increase the number of students and young adults in our hobby. A lot of us started as youngsters and have been involved for years. I decided to look back at my start and see what the key elements were that created my interest and how they relate to the interest of the current young generation:

1. I wanted to know how the magic worked. How was it possible for ham radio operators to talk around the world without paying for long distance? Today with cell phones, the internet and near free phone service, that magic has diminished. However, I find that everyone is surprised at how a few dollars in equipment they build can create contacts all over the world. You know you can't build a cell phone at home.
2. I loved to build things, especially things that had electrons running around in wires. Today the maker movement has shown that "making" is growing stronger. Makerfares, dozens of companies supporting the movement, and some serious creativity have shown us making is growing at a fantastic rate. Most of us started in the hobby making most of our equipment (we didn't have a lot of disposable cash). This is an area we can exploit.
3. I loved the idea of and learning Morse code. Tell kids that they can talk to each other using a "secret" language and they are all over learning it. They also pick it up very quickly.
4. Experimenting with new things. When I started SSB was a relatively new. I built a small QRP SSB transmitter and with my hands all over the receiver's tuning and BFO knobs, I made my first contact between Rootstown and Akron, Ohio. I was bouncing off the walls. With the new digital modes, we have more areas to explore. I remember just a few months ago making my first contact with New Zealand using 10 watts and FT8. I felt that same way I did 50 years ago. I have found that the mixing of RF, computers, new technology and building makes a mix that the young really enjoy.

So what can we do get the young interested in joining the hobby. I propose the following steps:

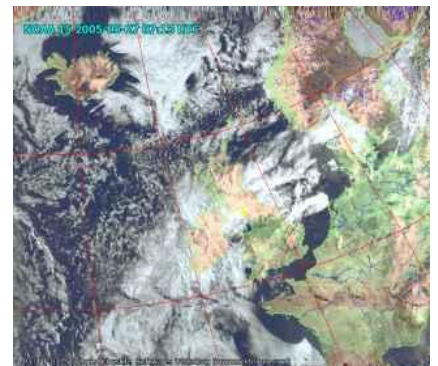
1. Build some fun demonstrations that will peak interest. These need to peak interest without requiring a license.



a. A system for receiving weather images. This project uses a Pi computer, NooElectric dongle and a helical antenna. The antenna alone draws a lot of attention.

b. A system for receiving ADS-B transponder data from aircraft. Steve, K8SRR, has brought his system to a few Makerfares and it has received a lot of attention. It is just

plain cool to track an airplane through the sky. I also use a discone antenna for this demonstration.



c. WSPR radio receiver and display. People of all ages are surprised that a single as small as that used by a cell phone can be received all over the world.



2. Hold learn to solder events. I have held more than a few of these. The interesting thing is parents use their kid's interest as a reason for them to take part. Truth is they want to learn as much as the kids.
3. Take our show on the road to schools, library events, Makerfaires and any other places where we can show our stuff. We can't build interest just at the club site.
4. Hold events at the club site that are focused on newcomers and the young. Show that you don't need to be a scientist to get your license and participate in the hobby.
5. Work with the schools to show how ham radio can be an asset in STEM programs. This will involve building ham radio projects integrated into the STEM programs.

These are things we need to do to build our hobby. It will not require a lot of money but it will require some effort. A lot of you have said you will help. Thank you. Now it is time to execute. Watch for QST's on this program and I would love to hear your ideas and an experiences you have had.

The Club Site

Most of you know of our water leak problem at the club site. Rick, K8CAV had a discussion with Mark Frisone, Director of Family and Community Services. Mark indicated that they will be working on the roof as soon as the temperature is above 50 and we have a dry period. That means probably April. This is great news! However, it does mean we will need to continue to tarp equipment until the repairs are complete.

March Club Meeting

The speaker for the March Monthly Meeting will be Stan Broadway, ARRL Ohio Section Emergency Coordinator. We will also be having a great 50/50 event with all kinds of great stuff. Come on out and have some fun.

Old Shack Shot

I was once a young ham. Just to prove it, here is an old shack shot. Forgive the shirt. But this early 60's fashion was hot then.

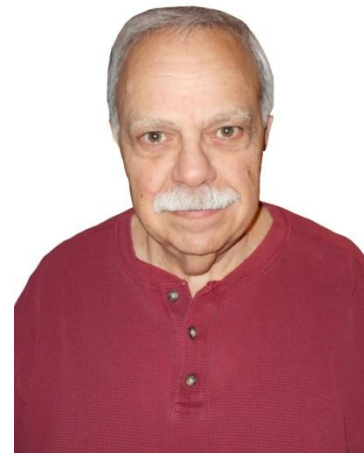


QST Email Issue

We have found a solution to the QST email problem. Many of you have received at least one email from this system. It will be great getting the system back on line. You still need to visit the website (portcars.org) frequently. Check out the calendar and news entries. We have lots of events coming up, so visit often.

From the Vice President

Tony, WA8AR
PCARS Vice President



Time To Get On The Air and Have Some Fun!!

Phone, CW, Digital Key Your Transmitter and Communicate!!

Every month it seems that I talk to club members who say that they have not been on the air during the past month and sometimes for several months, or even much longer! Sometimes they have reasons like their antenna was knocked down, or they are having equipment problems. Yes, and sometimes life just gets really busy. But all too often we let it go so long that we forget how much enjoyment we all get out of getting on the radio and simply talking to another ham. Ham Radio is like every other activity, if you don't exercise it your interest just withers away. For new hams it is even more important that we use our license privileges and get on the air or we will lose interest in our hobby and it will fade away before you even get a real start.

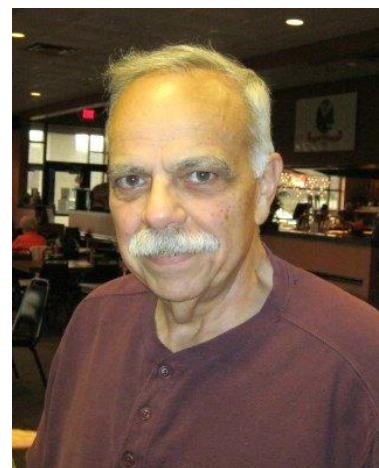
Being members of PCARS we are fortunate to have a great resource in our club radio room, equipped with a lot of very fine radio equipment and a well engineered antenna farm where several stations can be operated on different bands at the same time. At absolutely no additional cost any member can come and participate in numerous operating events. Those events include contests and the more relaxed get on the air days. And if you are a new ham there will always be an experienced operator there to show you the ropes. All members are welcome! And we usually have more radio operating positions than we have operators.

The bottom line is that we will help everyone get on the air. After that it is up to you to discover the true fun of being a ham radio operator and go on to teach others.

Antenna SIG

Tony, WA8AR

The Antenna SIG meets at 7 PM in the PCARS club site radio room on the third Tuesday of every month. The February meeting will be held on 3/20/18. All PCARS members and guests are welcome to attend. We will be discussing all antenna related topic including selection, design, construction, trouble shooting and safety for all Amateur Radio bands. Although we will generally have a designated monthly discussion topic please feel free to bring in any antenna related problem to the meeting and discuss it with the group.



This month we will be beginning our continuing discussion topic for 2018 which is Antenna Modeling. The objective is to attempt to develop an understanding of basic antenna modeling and to become familiar with the use of one fairly versatile antenna modeling package. This software is FREE, reasonably powerful and seems somewhat user friendly. How user friendly remains to be seen!

Please note that the PCARS QST email system is functioning again, so please watch for PCARS QST announcements regarding all Special Interest Groups. However, always check the PCARS web site for ASIG updates or last minute cancellations before going to the club site for a meeting.

Schedule of Events

On the calendar for upcoming meetings and activities are:

- Feb 27th - Field Day 2018 meeting at the club site - 6:30 pm
- March 3rd - Build Day for the Extra Class from 9 am until noon at the club site
- March 10-11th - Idaho & Wisconsin QSO Party Contest - PCARS will be on the air at the club site
- March 12th - PCARS Meeting at the Kent American Legion 7pm - Stan Broadway - ARRL Ohio SEC. Voting on the revised club Constitution & By-Laws. YES a GREAT 50/50 with PRIZES, too
- March 21st - Special VE session at the club site - 7pm - End of the Extra Class - Open to walk-ins
- April 14th - GOTA Day at the Club Site - Come in and operate the radios - Elmer will be there

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



- First Tuesday - **Digital** - Moderator: K8CAV
Second Tuesday - **QRP/CW** - Moderator: KB8AMZ
Third Tuesday - **Antenna** - Moderator: WA8AR
Fourth Tuesday - **DX & Contest** - Moderator: W8PT
Fifth Tuesday - **Linux for Hams** - Moderator: KB8AMZ

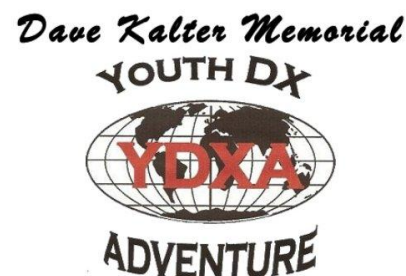


Fourth Thursday - **Net Night at the club site - 6:30 pm**



2018 Youth DX Adventure - PJ2T

Jim Storms, AB8YK
YDXA Team Leader



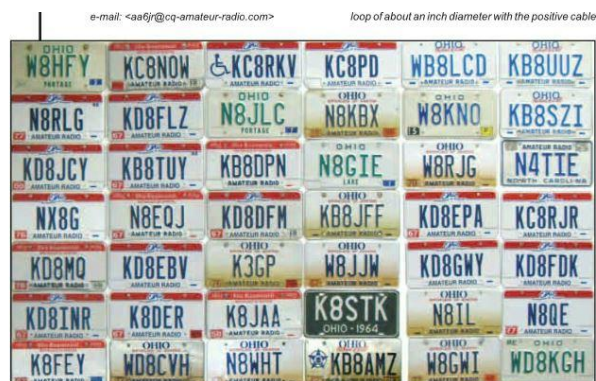
The 2018 **Dave Kalter Memorial Youth DX Adventure (YDXA)** destination this summer will be the PJ2T contest station site in Curacao. During the week of July 19-24th, three young radio amateurs between 12 and 17, accompanied by a parent or legal guardian (no license required), will make the trip. All travelers must have a valid passport and reside in the US.

“We are excited to announce that through the generosity of Geoff Howard, W0CG, and the Caribbean Contesting Consortium, the 2018 trip is returning to the super contest station PJ2T in Curacao, with the purpose of operating DX and learning the finer points of handling pileups, working gray line propagation, and antennas,” the YDXA announcement said.

The window to accept applications for the **Dave Kalter Memorial Youth DX Adventure** now is open; the complement of YDXA travelers may be expanded beyond six people, if fundraising permits.

The application deadline is March 17th.

PCARS Ham Plates in CQ Magazine



The CQ Garage website <<http://bit.ly/2BTKXp>> has ham radio license plates from around the U.S. Is your state represented? If not, please send us a photo of your ham tag and we'll get it posted. These plates, from Ohio and elsewhere, have been collected by Ohio's Portage County Amateur Radio Service. (Courtesy of Portage County ARS)

82 • CQ • February 2018

Visit Our Web Site

Check out the February issue of CQ Magazine. You'll spot something in there on page 82 that should look a bit familiar to you.

The magazine has a picture of some of the PCARS member's ham radio plates.

That picture was sent in to them a few years back and shown on the CQ Garage website. Nice to see that they ran the



The Secret Listeners

Take some time and watch this BBC video on YouTube:

Wartime Radio The Secret Listeners BBC (1979)

<https://www.youtube.com/watch?v=RwbzV2Jx5Qo>

Illustrated with archival film and photographs, as well as interviews with those involved, the documentary traces the evolution of civilian (**amateur radio**) involvement in radio-based intelligence during both world wars.



It was the tireless work of amateur radio enthusiasts during World War I, that initially convinced the Admiralty to establish a radio intercept station at Hunstanton. Playing an integral role during the war, technological advances meant that radio operators could pinpoint signals, thus uncovering the movement of German boats, leading to the decisive Battle of Jutland in 1916.

Wireless espionage was to play an even more important role during World War II, with the Secret Intelligence Service setting up the Radio Security Service, which was staffed by Voluntary Interceptors, a band of amateur radio enthusiasts scattered across Britain. The information they collected was interpreted by some of the brightest minds in the country, who also had a large hand in deceiving German forces by feeding false intelligence.

PCARS
Join Now
Discover the FUN



Happy Birthday PCARS Members

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

W8KNO	Joe	Wehner
WA4WGA	Ray	Mahorney
KE8BBI	Doug	Daniels
K1LTZ	Raiden	Ehrenfried
W8CYN	James	Shoemaker
KD8YFU	Kevin	Settle
K8SRR	Steve	Randlett

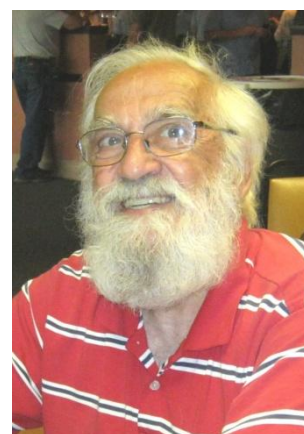
WX1DER	Daryl	Stout
KB3GXB	Jennifer	Williams
K8QF	Russ	Conklin
WB8LCD	Tom	Sly
W0KGB	Kirk	Baxter
KD8NLQ	Richard	Preisendorfer
AE8YL	Erica	Pelz

Paper Chase - Battle of Picacho Peak

Joe, W8KNO



The Oro Valley ARC will sponsor a special event, the Battle of Picacho Peak Commemoration . It takes place March 10th from 11am - 6 pm Ohio time.



Peak, 50 miles northwest of Tucson, Arizona. It was fought between a Union cavalry patrol from California, consisting of twelve Union cavalry troops and one scout, and a party of Confederate pickets from Tucson, and marks the western most battle of the American Civil War.

The Oro Valley ARC will operate as K7T using CW, PSK, FT8 and SSB. Listen for them around 7.040 14.040 for CW, 7.070 14.070 for PSK, 7.074 14.075 for FT8 and 7.200 14.250 for SSB. You do not need to mail a QSL to obtain a QSL. E-mail a request confirming your QSO to hfsig@tucsonhamradio.org.

For more information about the Oro Valley ARC go to www.tucsonhamradio.org.

If you are unaware of the battle, you are not alone. The Battle of Picacho Peak was an engagement during the American Civil War on April 15, 1862. The action occurred near Picacho



Hope to hear you in the Pile-up!

Planning for Field Day 2018

Tony, WA8AR
Field Day Chairman



There will be a Field Day Team meeting scheduled in March 2018 which all interested members will be invited to attend. The exact date and time will be announced using the newly commissioned PCARS QST email system.

Any members wishing to make a special donation to support the 2018 PCARS Field Day event should go to the PCARS web site: see the Club Activities/ Field Day tab; you will find instructions where you can make a donation by check or use the convenient “Donate” button and make your contribution using PayPal. We were about \$300 short of covering Field Day activities last year so we have started soliciting donations early this year, but as always, only from members who can afford to make a donation.

We have three positions remaining to be filled on the Field Day Team:

- **Food Service Director:** Responsible for putting on the Saturday dinner and Sunday breakfast. This is a key position as dinner is a big social element of Field Day for PCARS and of course we need to keep those operators fed so they have the fuel to make all those contacts!
- **Antenna Crew Chief:** Responsible for assembling a team of volunteers to put up all of the station antennas for Field Day. This was a new position we added last year and it worked out very well with all antennas ready for operation by about 12:30, well before the FD start time of 2 pm. I have a document that this years crew chief can use as a guide.
- **Transportation Crew Chief:** This is a new position this year. The crew chief will be responsible for assembling a small team to load the box truck that brings all the equipment to the FD site. Considering the distance to the FD site we just can’t afford to leave any equipment behind. In the past we just put out a general call for volunteers to show up and help. We need to have a specific crew list that we can count on to be there. The crew chief also needs to coordinate closely with the station captains so there is a good manifest of items that must go on the truck.

Any member wishing to volunteer for any of these positions please contact me at: tromito99@gmail.com

Chairman	Tony WA8AR	CW Station Captain	George K3GP
Co Chairman	Mike KB8TUY	Flex Station Captain	Rick K8CAV
Safety Officer	Karen N8HUC	VHF Station Captain	Mike KB8TUY
Public Info. Officer	Tom WB8LCD	20 Meter Station Captain	Erica AE8YL
On-Site PIO & media table	Tom KB8UUZ	40 Meter Station Captain	Ed K8IV
Antenna Crew Chief	TBN	GOTA Station Captain	Jim AC8NT
Transport Crew Captain	TBN	Power Team Captain	James KD8VT
IT Managers	Steve K8SRR	Food Service Dir.	TBN
	Zeb KD8WZS	Educational Program	Jim AC8NT

Note: The NEW **Transport Crew Captain** will be responsible for coordinating volunteers to load all of the equipment on to the box truck going to the field day site and reload it for the return trip to the club site.

Where's our Future ?

Tom, WB8LCD



I've been thinking (a lot) about the presentation we had at our February PCARS meeting. My first thought is: If you weren't at the meeting, or, if you ducked out early before the presentation, you missed out on something very important to the future of Amateur Radio. Please, attend the PCARS meetings. The officer's work hard to make sure you have interesting and pertinent meetings, but if you're not there, what's the point? I have always said that in the business world (and by proxy just about everything else) all you have to do is show up, be on time and be honest. If you can do that you'll beat out 80% of your competition! The next 20% is going to be a real dog fight, and I believe that when it comes to Amateur Radio Clubs, PCARS is in that top 20% and always will be. Our only enemy is complacency.

Back to the meeting topic – Club President Jim Wilson, AC8NT talked about a program he's working on to get younger kids interested in the hobby. If you're interested in Amateur Radio surviving into the next generations, here's what you need to do right now: Contact Jim, let him know you want to be involved in his program, then, when there's work to be done you need to show up! Or, you could just say they aren't interested, why waste the time? We've tried it before, it doesn't work. The kids are too lazy (too dumb, unmotivated, and too glued to their cell phones) – feel free to use whatever excuse you think excuses you from being a part of the solution. Maybe you have tried something in the past and it didn't work. So what? Most great endeavors aren't successful on the first try. It's a process, not an event. The real question is: how many times are we willing to fail before we quit? The key to success is to Never Give Up!

“Working with kids” is a pretty broad category. If you break down “kids” into pre-school, 1st through 3rd grade, 4th through 6th or 7th grade, High School, College, young adults; you've got quite a few different groups, all with different levels of knowledge and ability. We may have to focus on one particular group, or, have several programs at different levels. Before my son Sean was about to start school, we took him to a Kent City Schools Band Concert. They broke it down into about 10 different groups, from beginning to HS Seniors. Although the first group was horrible, every group showed an improvement over the previous one, and the last group sounded like a professional orchestra! Our key will be to identify the different groups, then tailor our presentations, projects and expectations to each groups capabilities. We don't want to fail, but even more importantly is that we don't let them fail!

PCARS as a club, and you, as an individual Amateur Radio Operator, can play a pivotal part in the survival of the hobby, if we (PCARS, Me and You) are willing to take an active part in making it happen!

Hey! One more thing: The world is changing! Kids may look at things differently than we do. You've got to be open to seeing things from their perspective. I took a long weekend vacation recently and one of the things I did was to stop in a Tesla showroom to look at one of the new Model X SUV's. Except for tires, seats



and a steering wheel this vehicle had very little in common with any car I've ever been in before. It was very cool! Imagine your vehicle dashboard being replaced with an iPad. The gull wing doors and, for about 50% more in cost you could get an electric SUV that would do 0 – 60 mph in 2.9 seconds! Very cool.....



PCARS VE Test Sessions

Robert, N8RLG
PCARS VE Team Liaison



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

April 7th, June 2nd, June 23rd at Field Day,
August 4th, October 6th, December 1st

Special VE Session - Wednesday - March 21st - 7 pm
at the PCARS club site for the end of the Extra Class
Walk-ins for Tech, General or Extra testing are welcome

What to Bring to the Testing Session

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



Expired License? Original and copy of your expired Amateur Radio License - you must take and pass Element number 2 to re-instate your license.



Do Numbers Stations Really Instruct Spies?

James Careless
Radio World



Unidentified radio broadcasts have been transmitting coded messages, using numbers for years

OTTAWA, Ontario — “6-7-9-2-6. 5-6-9-9-0.” Tune across the shortwave bands (above AM/MW), and chances are you will come across a “numbers station.” There’s no programming to speak of; just a mechanical-sounding voice (male or female) methodically announcing seemingly random groups of single digit numbers for minutes on end.

Congratulations! You are now officially a spy-catcher, to the extent that you may have tuned into a spy agency’s “numbers station” transmitting one-way instructions to their minions worldwide.

Numbers stations are unidentified radio broadcasts that consist usually of a mechanical voice “reading out strings of seemingly random numbers,” explained Lewis Bush, author of “Shadows of the State” a new history of numbers stations and the spies who run them. “These are sometimes accompanied by music, tones or other sound effects.” He said. “There are also related stations broadcasting in Morse Code and digital modes.”

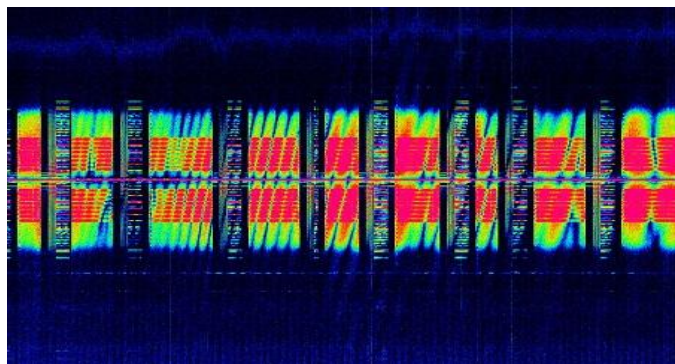


The site of British intelligence’s numbers station transmitter site, “The Lincolnshire Poacher,” at the RAF base in Akrotiri, Cyprus. Credit: Lewis Bush, “Shadows of the State.”

NO PARANOID DELUSION

Program formats aside, the common purpose of numbers stations is “to broadcast coded messages to spies in distant countries,” said Ryan Schaum. He is co-founder of Numbers Station Research and Information Center (NSRIC), a hobbyist group that reports on these signals at www.numbers-stations.com. According to Schaum, the “use of shortwave allows complete secrecy and makes it impossible to determine who the recipient is.”

In order to decode the message hidden within the numbers broadcast, “the recipient uses ‘one-time pad’ encryption, which cannot be decoded by anyone without the time pad key,” said Schaum. Printed on paper pads, the one-time pad key allows the recipient to decode the message just once, it is then discarded for a fresh key after every use, thus making the cipher literally unbreakable. “For these reasons, numbers stations are still used today.”



A waveform file of “The Lincolnshire Poacher” numbers station broadcast.

The notion that spy agencies are contacting spies using code broadcasts over shortwave may seem like a paranoid delusion. But as the saying goes, “just because you’re paranoid doesn’t mean they’re not out to get you.”

In the case of numbers stations and the evidence associated with them, “the most widely agreed upon theory is that they are operated by intelligence agencies,” said Bush. “This theory has been backed up by a number of cases where spies have been uncovered or arrested in the act of listening to or decoding these stations, and in a few rarer cases by declassified documents and government admissions of ownership.”

“Voice (numbers) stations are known to be spy messages,” said Paul Beaumont. He is an associate editor of Eye Spy Intelligence Magazine, an independent publication dedicated to espionage and intelligence. “For instance, V02 in Spanish was used to instruct Ana Belen Montes,” Beaumont said.

Montes was a United States Defense Intelligence Agency employee who spied for Cuba from 1985 until caught by the FBI in 2001. A 2016 report by CNN’s Thom Patterson described Monte as “The most dangerous U.S. spy you’ve never heard of.”

A CENTURY OF SPY RADIO

Motivated by what she saw as the U.S.’ unfair policy toward Cuba, Montes avoided detection by never removing top-secret documents from the DIA. Instead, this spy memorized what documents she could at work, and then transcribed these memories on her laptop at home.

Next, she would receive coded instructions from Cuban numbers station V02 (via shortwave radio) “about where to hand over the discs to her Cuban contacts,” Patterson wrote. “Some of the most damaging information Montes admitted giving to Cuba, the FBI said, were the identities of four American undercover intelligence officers working there.”

Today’s shortwave numbers stations are very much a legacy of the Cold War. The fierce espionage battles between the West and the Soviet Bloc - and their mutual vigilance in ferreting out each other’s concealed agents - required a form of communications that covered long distances, provided ironclad security, and yet could be received using locally available radios if need be. Numbers broadcasts via shortwave fit the bill perfectly.

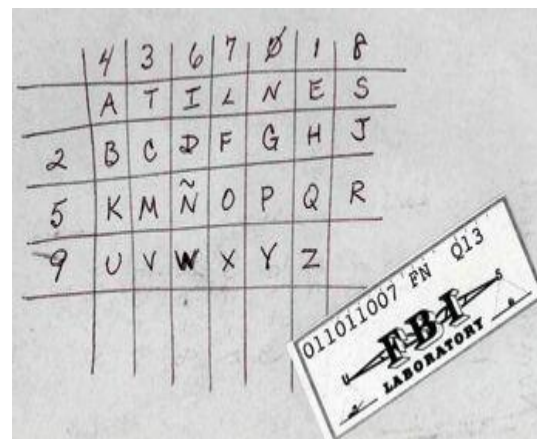
Yet the legacy of using radio to transmit secret information goes back to the First World War. According to Maris Goldmanis, a numbers station listener and NSRIC member based in Riga, Latvia, Allied numbers stations broadcasting in Morse Code were detected by Austrian Archduke Anton Habsburg.

“He was a radio enthusiast, and as a member of the royal family received permission to construct his own radio receiver,” said Goldmanis. “His first activities involving listening to numbers stations such as FL ‘Tour Eiffel’ from Paris, ICI from Cortona [Italy], and FSK from Moscow.”

“The reason coded broadcasts started in World War I was not on a whim,” said Beaumont. “The British had dredged up the underwater telegraphic cables used by Germany and its allies and cut them, forcing the use of radio to send messages.”

FAMOUS STATIONS

Radio as an espionage tool exploded during World War II, and, after that, the Cold War. This is when numbers stations came into their own, as spy agencies such as the CIA, Britain’s MI6, and the Soviet Union’s KGB spent millions building and operating high-powered yet clandestine shortwave transmitter sites.



One of Ana Belen Monte’s notes used for decoding messages from her Cuban handlers.

One of the “best known” numbers stations was “The Lincolnshire Poacher,” due to its use of “The Lincolnshire Poacher” folk song played on a pipe organ as an identifying signal. Amateur radio enthusiasts used direction-finding equipment to locate this station’s transmission location to the RAF base in Akrotiri, Cyprus. This station is believed to have been operated by MI6 from the mid-1970s to 2008, using several curtain-array shortwave antennas.

“Among the historic ones which no longer broadcast, there are many stations which could be considered weird,” noted Bush. “One known as the Swedish Rhapsody could be a strong contender, as it used music played on a child’s music box and the voice that read its numbers sounded somewhat like a child; characteristics which made the station particularly eerie.” This numbers station is believed to have broadcast from a transmission site in Falenty, Poland.

Even after the Cold War, numbers stations have stayed in business. One of these is “HM01, which is thought to be Cuban operated,” said Bush. “It transmits voice read numbers in combination with digital transmissions using the Redundant Digital File Transfer mode. Another example is a station known as XPA, which is believed to be run by one of the Russian intelligence agencies and transmits numbers solely using multiple-frequency key shifting.”

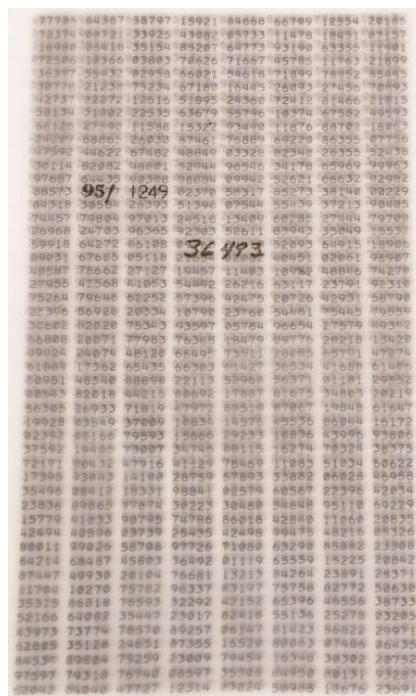
Even North Korea has apparently gone into the spy station business, with one key difference. The dictatorship’s domestic radio service KCBS Pyongyang Pangsong has been noted to sometimes transmit ‘maths lessons,’ which it has been suggested are in fact numbers messages,” Bush said. Whether they are intended for real agents or are simply intended to unnerve South Korea and its allies is unclear. According to Beaumont, this numbers station is known as V15, and “decoded sheets [associated with tuning to its signals] have been recovered.”

The speculated transmission site of “The Swedish Rhapsody” numbers station in Falenty, Poland. Credit: Lewis Bush, “Shadows of the State.”

TODAY

Today, numbers stations remain a reality on shortwave radio, even in the Internet Age. The reason for these stations’ longevity isn’t hard to understand. Unlike communications over the internet that leave digital evidence (even in supposedly secure systems) for investigators to find, receiving instructions via shortwave numbers broadcasts leave no traces behind.

“It’s a rather safe way to send coded messages, unless you are observed listening to them,” said Goldmanis. “You don’t need a large clunky radio. It’s even possible to listen these stations on the internet using remote software defined radio, and that is what we hobbyists do.”



A one-time pad used by the CIA.



The speculated transmission site of “The Swedish Rhapsody” numbers station in Falenty, Poland.

This doesn't mean that receiving instructions via numbers stations is a perfect form of communications for spies, because it isn't. Spies can get caught if the authorities see them listening to numbers broadcasts, as has occasionally happened.

"A Cuban Morse numbers station — M08a — was also cited in an FBI affidavit as being the channel for a husband and wife team, the Myers, who were arrested following shoddy operator discipline," said Beaumont. "I think they used the internet and made reference to a received Morse transmission."

Nevertheless, the numbers station's ability to send secret information securely over large areas means that this form of shortwave communication likely has a secure future; even while other forms of analog broadcast are being supplanted by digital means.

For readers who are now wishing to tune into numbers stations, making your first direct contact with spycraft is easy. Just get a shortwave radio and scan around the dial. You can even tune in using a remote-controlled shortwave radio over the web, at the free site www.globaltuners.com.

To save time, check out a website like www.hfunderground.com to find numbers stations to tune into. Another good bet for frequencies and general information is the United Kingdom's ENIGMA 2000 [European Numbers Information Gathering & Monitoring Association] at www.apul64.dsl.pipex.com/enigma2000.

A third option is to go to NSRIC's at www.numbers-stations.com or <http://priyom.org>, and tap into its archived and live numbers stations feeds.

Be warned: After hearing your first numbers station, your personal experience of espionage will move from fiction to nonfiction. The spies are out there, they are broadcasting, and you will have heard them!



James Careless reports on the industry for **Radio World** from Ottawa, Ontario.

<http://www.radioworld.com/news-and-business/0002/do-shortwave-numbers-stations-really-instruct-spies/341024>

Hamfest Calendar

03/04/2018 - Winter Ham Fest - Location: Elyria, OH - Sponsor: Northern Ohio Amateur Radio Society - Website: <http://noars.net>

04/14/2018 - Cuyahoga Falls ARC's 64th Annual Hamfest - Location: Emidio & Sons Party Center - 48 E. Bath Rd., Cuyahoga Falls, OH - 8 am until 1 pm - Sponsor: Cuyahoga Falls Amateur Radio Club - Website: <http://www.cfarc.org/hamfest.php?festnow=2018>

May 18-19-20, 2018 - HAMVENTION® 2018 - Location: Greene County Fairgrounds - Xenia, Ohio - Sponsored by DARA - Website: <http://hamvention.org>

WARC Bands

Terry, KB8AMZ



I was in discussion with a friend a couple weeks ago when I mentioned the W.A.R.C. (aka WARC) bands on my Heathkit HW-9 and my use of those extra frequencies. My friend was not aware that he had privileges on those bands, specifically 30m, 17m, and 12m. I confirmed with him that he does and during contests, every weekend, those would be the bands to work for casual or rag chewing QSO's since contesting is not permitted on those bands, ever.

Some history...

In September 1939 Europe entered into war. In the United Kingdom and all European countries, all amateur activity was suspended until 1946. Most British Commonwealth followed this decision as well, including Canada. A few German stations remained active throughout the war, some of them being spy stations in Nazi's pay.

U.S. amateurs continued operating although their DX activity was reduced to locations not at war. In June 5, 1940 the FCC forbid US amateurs to contact stations in the war zone. Two weeks later the FCC issues Citizenship Proof of All Licensed Amateur Radio Operators. NOTE: This was after the air raid on Pearl Harbor (December 7, 1941) when all amateur radio operations were suspended. "This new requirement applies to amateur as well as commercial operators, and calls upon them to file such proof in the form of affidavits, fingerprints, and photographs before August 15 next." Communications for fun ceased and the only amateurs that were permitted to communicate did so through the War Emergency Radio Service.

At the start of the war in Europe there were approximately 60,000 licensed amateur radio operators (actually about 100,000 licensed amateurs); about 25K served in the armed forces and about 25K helped the war industries or were enrolled as instructors in military schools. During the war the ARRL continued to publish QST and its offices remained open. QST contained less pages than normal due to paper rationing and its existence was used for military and civilian training during the war. WW II ended August 17, 1945. On November 15, 1945, amateurs are allowed back on the air but only on 10 and 2 meters. In 1946 the military gradually begins to relinquish the prior HF band frequencies except for top band 160 meters; it's slated to be used for the LORAN Radio navigation system. Over the next decade parts of some bands are lost and others are regained. In 1979, the World Administrative Radio Conference, or WARC-79, takes place in Geneva. The ARRL, IARU & other groups have been preparing for years. We lose nothing and gain three new bands at 30 meters, 17 meters, and 12 meters; which are phased in over the next 10 years. None of the commercial amateur radio gear nor the military surplus gear specifically contained the WARC-79 bands but radio manufacturers began including those bands in the new equipment around 1986.

So if you are not a contester and want to work HF on a particular weekend the WARC bands will be free of contesters.

Notes: 1 - WARC - World Administrative Radio Conference was a technical conference of the International Telecommunication Union where delegates from member nations of the ITU met to revised or amend the entire international Radio Regulations pertaining to all telecommunication services throughout the world. (Source: Wikipedia, https://en.wikipedia.org/wiki/World_Administrative_Radio_Conference)

2 - WARC bands - in 1979 a worldwide allocation of these bands for amateur use was named. These bands were opened for use in early 1980. Due the small bandwidth of 100 kHz or less, there is a gentlemen's agreement that the WARC bands may not be used for general contesting. This agreement has been codified in official recommendations, such as the IARU Region 1 HF Manager's Handbook (DV05_C4_Rev_07). Most of the world cannot use phone on 30m; part of Region 1 (Africa, south of the equator, during daylight hours is permitted); amateur radio in the USA limits 200 watts PEP on this band. (Source: Wikipedia, https://en.wikipedia.org/wiki/WARC_bands)

3 - Source: The History of Amateur Radio, <http://www.astrosurf.com/luxorion/qs1-ham-history9.htm>

4 - FCC Order No. 72, Section 303 of the Communications Act and in accordance with Article 8, Section 1, General Radio Regulations (Cairo Revision, 1938) annexed to the International Telecommunications Convention (Madrid, 1934), as issued today, June 5, 1940. (Source: FCC PRESS RELEASE, https://apps.fcc.gov/edocs_public/attachmatch/DOC-310445A1.pdf)

5 - (Source: FCC PRESS RELEASE, https://apps.fcc.gov/edocs_public/attachmatch/DOC-335609A1.pdf)

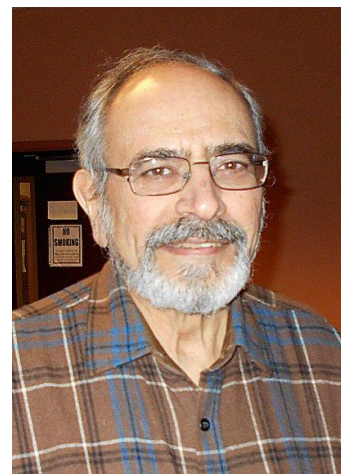
6 - War Emergency Radio Service was a precursor to the Civil Defense and Radio Amateur Civil Emergency Service systems in the United States. (Source: Wikipedia, https://en.wikipedia.org/wiki/War_Emergency_Radio_Service)

Homebrew Code Practice Oscillator

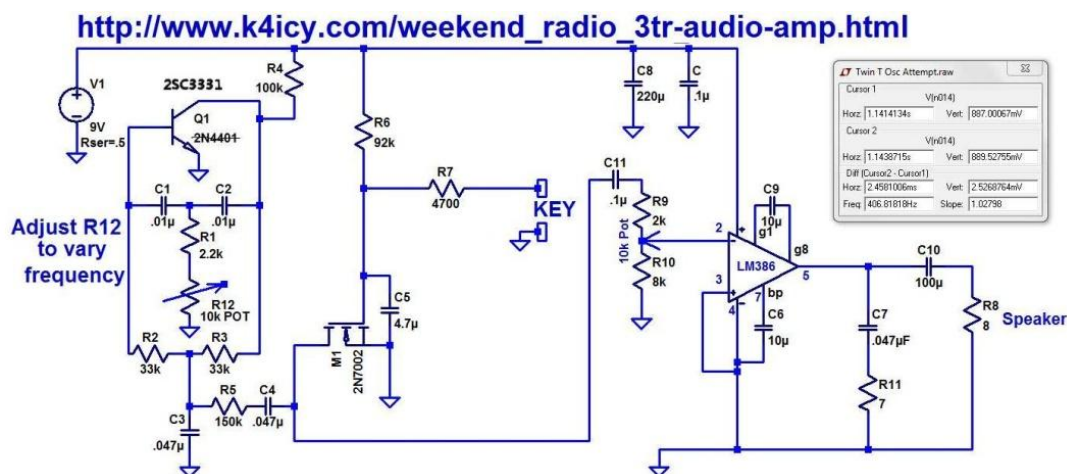
Doug, WA8UWV



Here is a picture of the Key and code practice oscillator project I've been working on.



The design of the code practice oscillator will be provided to interested members. I plan to assemble mine into a gutted Heathkit code practice oscillator enclosure. This design provides a sine wave output with soft attack and decay to eliminate key clicks.



The original design is from K4ICY. http://www.k4icy.com/weekend_radio_3tr-audio-amp.html

It is a Twin-T Oscillator and uses a FET to control attack and decay. I've used an LM386 to enhance speaker volume per suggestion by Terry, KB8AMZ. Terry initiated the "Make Your Own Straight Key Project" at the PCARS CW/QRP Special Interest Group.

PCARS Yahoo Group

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/>



As most of you may know, the portcars e-mail forwarding system is working anymore. Too many internet providers are looking at our forwarding system as spam and deleting the e-mails we send out through that system. So, what to do?

Two things every member should do.

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

Jason, KD8WGR



Skywarn™ training classes by the National Weather Service in Cleveland will be offered on site this year.



NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Groups will be organized through the local county **Emergency Management Agencies** and **Skywarn™** groups to take this training.

While several of the counties will be participating in the training, not all counties will include Skywarn™ training for this season. You may attend any scheduled Skywarn™ session, you do not need to be a resident of the host county.

Check out the complete schedule at: http://www.weather.gov/cle/SKYWARN_schedule

Below are just some of the local classes.

Location	Date & Time	Address	Basic / Advanced	Contact Info	Preregistration
Warren, OH	3/6/2018 600 PM	KSU Trumbull Campus Technology Building Room 117 4314 Mahoning Ave	Basic	Not Available	None
Jefferson, OH	3/12/2018 630 PM	Ashtabula County Engineers Office 2nd Floor 186 E. Satin St.	Basic	Not Available	None
Elyria, OH	3/13/2018 600 PM	Gates Medical Center Auditorium 125 E Broad St.	Basic	Not Available	None
Massillon, OH	3/21/2018 630 PM	Jackson High School Conference Room * Do Not Call School 7600 Fulton Road	Basic	Not Available	None
Akron, OH	3/22/2018 600 PM	American Red Cross 501 West Market St	Basic	Not Available	None
Chardon, OH	4/2/2018 630 PM	Geauga County Department of Emergency Services 12518 Merritt Rd	Basic	Not Available	None
Medina, OH	4/3/2018 630 PM	Medina County Career Center Auditorium 1101 W Liberty St.	Basic	Not Available	None
Ravenna, OH	4/12/2018 600 PM	Maplewood Career Center Dining Room/Cafeteria 7075 State Rte 88	Basic	Not Available	None
Independence, OH	4/19/2018 600 PM	Independence Civic Center Red Oak/Pin Oak Rooms 6363 Selig Blvd.	Basic	Not Available	None
Kirtland, OH	4/23/2018 630 PM	Lakeland Community College R25 Auditorium in T 129 Tech Center 7700 Clocktower Dr.	Basic	Not Available	None
Youngstown, OH	4/25/2018 600 PM	Austintown Fitch High School Auditorium 4560 Falcon Drive	Basic	Not Available	None

SKYWARN™ SPOTTER PAGE

Helping Hands Get the Tower Installed

Dave, WA8GCF



I guess we'll start at the beginning, which is a great place to start. When the need arises, you do what you have to do. After a lightning strike on my old tower and antenna system, the need definitely arose. Five years ago a medium sized strike hit my neighbor's tree. That little event caused approximately \$10,000 worth of damage to my electronics equipment including but not limited to ham radio, TV, VCR, Computer, rotor and controller, a ringo ranger vertical antenna and last but not least a tower leg.

The search didn't begin immediately, but after going through the insurance company to settle on replacement costs (and they did replace everything except the tower). I started pricing all of the new equipment and \$10,000 is a lot of money but, not enough to replace the tower. I went on line to price a new tower. Fold over, crank ups, wire guyed and free standing towers, I checked them all. I settled on the crank up style because of its ease of service and its fold over base. Now the question was price. Should I go new or used, short or tall, steel or aluminum? It seemed like the longer I pondered, the harder it got.



An old acquaintance of mine, who was moving out of state wanted to sell his steel 52 ft. crank up tower with a fold over base. Problem solved. All I had to do was try to negotiate a fair price. Well the long and the short of the story is we settled on a price that was amicable to both of us. The tower was located some miles away and was in use. I took the hour drive with a ham buddy of mine Russ NR8W to go look

at the tower and was very pleased with what we saw. The seller agreed to disconnect and take down the tower and two tri-band antennas to deliver to my home. On the day Al AB8AA and his XYL Jane K8JAA arrived with the tower and antennas we also had my XYL Vivian KB8CLH, Roy KD8IJF his XYL Donna, Russ NR8W and his son Don. Russ brought his big tractor with a front end loader on it to help take the tower off the trailer. We set the whole thing aside to wait for the hole and trenches to be dug.

Almost two months later the contractor finished digging. So now we were ready for the base and conduit to be placed. The control cable, coax and miscellaneous pull strings were pulled into the conduits. Bob WB8KLC and I reassembled the two tri-band antennas in preparation for the tower to be erected. All the little details of assembly that you sometimes forget were accomplished without incident.

The number of wonderful friends, neighbors and hams that gathered to accomplish my tower job was over whelming. Two of my radio clubs put out QST announcements for help on the day we put the tower up. We had lots of hands involved. Too many to mention all of them, but everyone's help was very much appreciated. We got the tower in the air and the weather for the most part cooperated. A little cold, a little rain - all in all, not bad. We raised the tower by hand from about 39 degrees up. The rope we tied on for safety the last few feet is still on the tower. We tested the controller in both directions with no problems.



I would like to thank Russ NR8W, Al AB8AA, Jane K8JAA, Roy KD8IJF, Donna, Donnie, Bob WB8KLC, Terry KB8AMZ, Mike KB8TUV, and neighbors and friends. Hopefully I didn't forget anybody. I am still testing with a QSO here and there but, propagation being what it is we'll see. Thanks to all.

DXpedition to Spratlys Reset for March

Postponed DXpedition to Disputed Spratlys Reset for March

An international Amateur Radio team that postponed a December 2017 DXpedition to the disputed Spratly Islands now plans to be on the air in early March from Layang Layang Island - also known as Swallow Reef - under Malaysian call sign **9M0W** (<http://www.yt1ad.info/9m0w/>), with CW, SSB, and digital operation on 160 through 6 meters. The team, headed by Hrane Milosevic, YT1AD, had to change its plans because the resort on Layang Layang Island, from which the DXpedition will operate, was closed from December until February.

In addition to its call sign, the 9M0W team has a landing permit from the Malaysian government. While the Royal Malaysian Navy maintains a presence on the reef, ownership of the Spratlys has been asserted by the People's Republic of China (PRC), Taiwan, Vietnam, and the Philippines - in addition to Malaysia. The Spratlys are #56 on Club Log's DXCC Most-Wanted List.



A group of islands and associated “maritime features” (reefs, banks, cays, etc.) of economic and strategic importance, the Spratlys are just part of ongoing territorial disputes throughout the South China Sea, characterized by diplomatic stalemate and the employment of military pressure - including the occupation of disputed territory - to advance territorial claims. The Spratlys and Scarborough Reef, another rare DXCC entity, have caught the attention of news media in recent years, owing to the PRC's increasingly vocal objection to the presence of fishing vessels as well as that of American naval vessels transiting the area's busy trade routes in order to assert the right to freedom of navigation within what the US considers international waters.

The approximately 15-acre Layang Layang Island includes some land “reclaimed” from the ocean floor. The PRC has also been involved in an ambitious program of artificially expanding the land mass of South China Sea islands. In 2014, China commenced dredging activities within the Spratlys and, the following year, satellite images showed that China was building an airfield on Fiery Cross Reef, while continuing land reclamation at other sites in the region.



Map of the disputed territory.

DXpedition operated in the spring of that year from Thitu Island (called Pag-asa in Tagalog), using a license

issued by the Philippines. The DX0P operation took place just a few years after the planned DX0DX DXpedition to the Spratlys was “permanently cancelled” in 2011 without explanation after being pushed back at least twice.

A 2016 ruling from an international tribunal discounted the PRC’s claims with respect to the Spratlys and Scarborough Reef. The Permanent Court of Arbitration in the Hague, Netherlands, ruled in favor of the Philippines in a dispute with the PRC over Scarborough Reef — also known as Scarborough Shoal. The tribunal said that although navigators and fishermen from China and other states have historically made use of South China Sea Islands, there was no evidence that China had historically exercised exclusive control over the waters or resources.

According to the tribunal, the PRC had violated the Philippines’ sovereign rights and had caused “severe harm to the coral reef environment” by building artificial islands and an air strip. The PRC refused to take part in the arbitration and said it would not be bound by the tribunal’s ruling. The tribunal made clear that its ruling did not address issues of territorial sovereignty.

New Mobile DXCC Operating Award

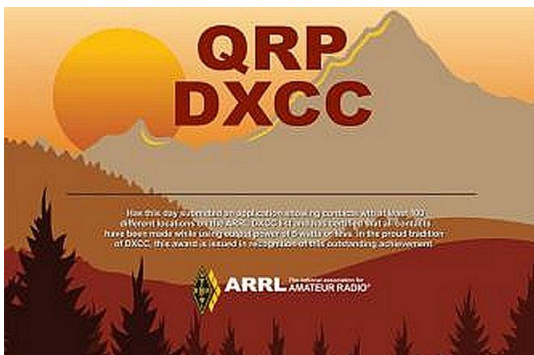
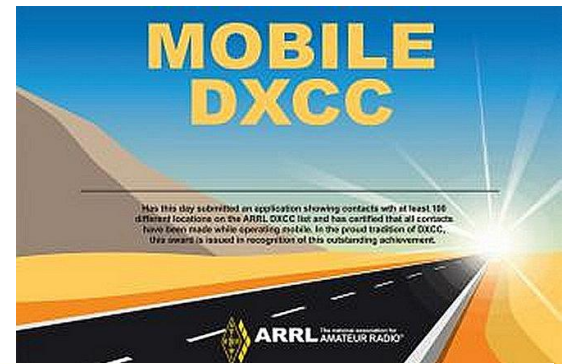
From the ARRL

The ARRL announced a [Mobile DXCC Operating Award](#), available to radio amateurs who have contacted at least 100 DXCC entities from a working vehicle, with antennas and power source capable of operating while in motion. ARRL Radiosport Manager Norm Fusaro, W3IZ, advised those pursuing the award to put safety first.

"Distracted driving is a serious concern, so we hope all mobile operators exercise care when operating from a moving vehicle," he said.

Full, official details are on the Mobile DXCC Operating Award page. The Mobile DXCC is a one-time award and is non-endorsable. Contacts made any time in the past do count toward the award. QSLs are required, but you do not need to submit them.

Mobile stations may use any power that is legal in the entity from which they are operating. This award specifically *excludes* contacts made by aeronautical or maritime mobile stations. You do not have to be an ARRL member to qualify for this award.



Because this award is similar to the [QRP DXCC Operating Award](#), ARRL has redesigned the QRP DXCC Certificate so that the two awards complement one another.

Operators who hold the QRP DXCC award may apply for the new-style certificate with the original date of issue printed on the certificate, but you do not have to re-submit QSL cards or a log. All certificates are \$16.

Contest University 2018

Contest University

Tim, K3LR
CTU Chairman



Still Time to Sign Up for Dayton Contest University

Student registration remains open for the 2018 Contest University (CTU), Thursday, May 17, at the Crowne Plaza Hotel in downtown Dayton, Ohio - the day before Hamvention® in Xenia.

The all-day session for contesting veterans and newcomers will touch on all aspects of Amateur Radio contesting.

Thu, May 17, 2018
Crowne Plaza Hotel
Dayton, Ohio USA

CTU scholarships (registration fee paid) are available through a grant from the Northern California DX Foundation (NCDXF) for students age 25 and younger. Contact CTU for more information.

Registrants who have given (or will give) a Hamvention presentation or who have given a hamfest or group presentation on Amateur Radio since May 17, 2017, may qualify for a \$10 registration fee discount. Choose the "Registration with Club Talk Discount."

CTU sponsors including Icom America, DX Engineering, the Northern California DX Foundation, The Yasmie Foundation, the Radio Club of America, and CQ Magazine. The May 2018 session will mark the 12th consecutive year for CTU Dayton.

More information is on the CTU website. <https://www.contestuniversity.com/>

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: **Amy, KD8SKL** or e-mail her at: KD8SKL@yahoo.com

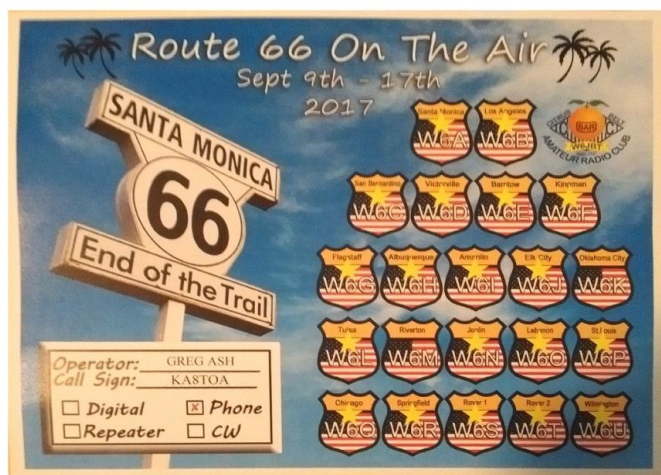


Fun with Route 66 On The Air

Greg KA8TOA

Let me start, participating in the Route 66 Special Event to me was like a kid in a candy store, what fun. It has been a long time since being on HF and it was great to use the new rig and antennas. Half of the contacts were on 40 and half on 20. I was using a vertical antenna for most of the contacts and some were on the wire antenna.

I missed a grand slam by 2 stations. 95% have returned QSL cards and 1 of the stations in Missouri went toward my WAS certificate. Only 7 states to go for WAS.



The new rig is an Icom IC-718 and the wire antenna is a home brew Carolina Windom off center fed dipole, the vertical antenna is a Hustler 5-BTV.

The route 66 contest ran from Sept 9th to the 17th and was coordinated by W6JBT, the Citrus belt Amateur Radio Club.

I would like to thank a couple people for their help during the summer for helping me get back on the air. Mike KB8TUY, Rick K8CAV, Bob N8QE and my Significant Other - Patricia for all their help. Hanging Antennas, purchasing equipment, Tuners, power supply and Knowledge. In closing, If you need help ask for it,

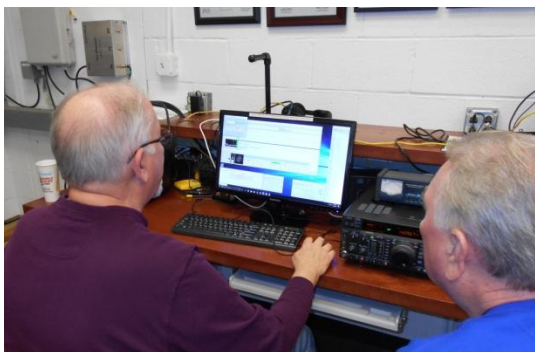
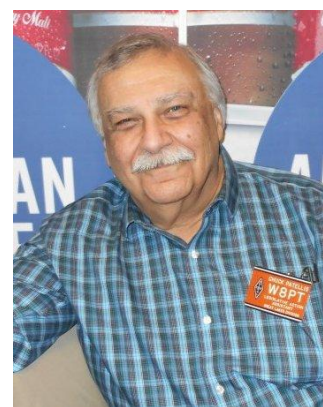
there are a lot of knowledgeable people in our club and they are willing to help you.

DX/Contest SIG

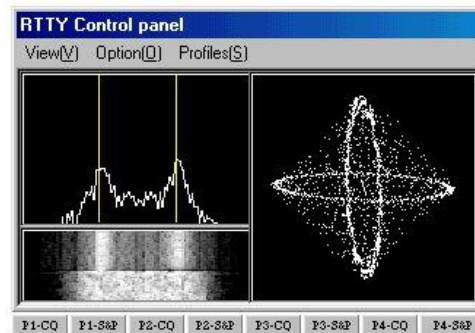
Chuck, W8PT

Here's a brief report (very brief) of our foray into RTTY contesting.

First of all, I want to thank all those who came out to the club site and weathered the inclement WX both outside and inside. We seem to be having a bit of a water problem at the club site with many, many leaks in the ceiling. We found water on some of the gear even with plastic covering just about everything.



Once we got that cleaned up, we had to reinstall the RTTY programming on the computer we were going to use for the contest. That being completed, we then tested the system prior to the start of the contest and all seemed to be operational.



The contest was more exciting than expected and some ops did not want to let go of the chair. They were having fun making contacts and the bands were cooperating nicely. We started on 20 meters and it was so loaded that we thought we might start another op position. George K3GP got busy loading another computer with the software and we were soon up and running on 40 meters. So we ended up operating as a Multi-2 club station. (Multi Operators - 2 Transmitters)



In the evening we abandoned 20 m in favor of 80 and that band took off. I apologize for not taking note of the point total but we did end up with 250 contacts. Not bad for a group that had very little experience in RTTY contesting up to this point.



We said that we would not run the entire time but frankly we could have since a few ops were sad to see us shut down at 11PM! We had 17 people sign in and 10 of those operated at one time or another, Many operated multiple times. The op positions were never empty.

There is another NAQP RTTY contest coming up in July and we have already said that we will be on the air. For those who did not make it this time, you will have another chance in July.

We will have a full accounting of how K8BF did at our next monthly meeting. Until then, 73.

Speaking of Contesting:

At the last PCARS meeting the certificates for participants in the last California QSO Party were handed out to the operators present at the meeting. PCARS scored 27, 871 points which put us as **Number ONE in Ohio** and **Number ONE in the USA** for the Low Power Multi-Multi category !!

California QSO Party

This Certificate of Achievement Is Awarded To

W5OV KD8ICP K8CAV N8QE W8PT KB8AMZ KA8TOA KB8TUY N8BI W8KNO

K8BF

Class: MM-L Rank: #1-Ohio #1-USA Portage County ARS
Ohio

52nd Running of The CQP - October 7-8, 2017

268	Contacts
47	Multipliers
27871	Total Points

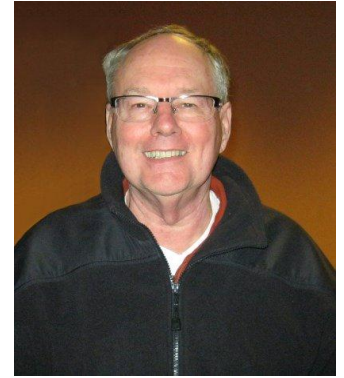
John Miller
John, K6MM, CQP Chairman

Bob Hess
Bob, W1RH, NCCC President



Tech Notes - The Mystery of Wire Gauge

Jim, AC8NT



Last month we discussed how component values were selected. This month it's all about another mystery. How did they pick our common wire gauges? This is another question asked by a lot of my students.

Wire gauge measurement has a very long history going back to the 1700's. At that time there were no real standards and gauge was usually determined by how many times a wire was drawn. So gauge number 2 was drawn twice and gauge 10 was drawn 10 times through the draw plate. These empirical sizes, as you might expect, varied widely among manufactures.

In 1855 Brown & Sharp developed one of the first geometric methods to determine gauge. The diameter of the largest gauge was 0000 (.460"), the smallest was 36 gauge (.005"). These two values were determined by manufacturing limitations. There were 39 steps between these two gauges. This is what we know of as American Wire Gauge (AWG). Again a couple of engineers good at math found for this to happen that the ratio between two gauge diameters needed to be:

$$\text{Ratio between two wire gauges is } \sqrt[39]{92}$$

This is approximately 1.12293. So gauge 9 wire is 1.12293 times bigger in diameter than gauge 10. This equation is developed from the diameter ratio of gauge 0000 and gauge 36 being 1:92 (.460/.005 = 92) and 39 gauge steps. A quick check is to measure the diameter of 12 and 14-gauge wire. You will find the number 12-gauge wire is 1.26098 times bigger. (Number 13 is 1.12293 times bigger than number 14 and number 12 is 1.12293 bigger than 13. This combination computes to 1.26098.)

There are other gauging systems including the Imperial Standard Wire Gauge (SWG) which is based on the largest gauge 7/0 measuring .500 inches and gauge 50 measuring .001 inches. Wire diameter diminishes by 10.557% as gauge size increases.

Another perfect example of: **NOTHING IS AS SIMPLE AS IT SHOULD BE!**

Some quick rules of thumb for wire gauges are:

1. When the cross-sectional area is doubled, the AWG will decrease by 3. (two number 14 conductors have about the same cross-sectional area as one number 11)
2. When the diameter of solid wire is doubled the AWG decreases by 6.
3. A decrease of 10 gauge numbers multiplies the cross-sectional area and the weight by a factor of 10. This is very important to specifying wiring installations in tall buildings.
4. **VERY IMPORTANT!!** For the same cross-sectional area, aluminum wire has a conductivity of 61% of copper. To get the same current carrying capacity Aluminum must be at least 2 AWG's bigger. You might find this error in building built during the period when copper prices were very high and some contractors used aluminum wire.

I hope this helps you understand wire gauge a little bit better.

PCARS Thursday Net Control

Greg, KA8TOA
Net Control Coordinator

Thank you all for helping with this! Anytime you are unable to take the net, please give me as much advance warning as possible! **Check-in using the receiver located in Sugar Bush Knolls ~ 146.895 with a PL tone of 118.8.**

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



March	
1	KB8TUY
8	KA8TOA
15	KB8UUZ
22	AC8NT
29	K8CAV

April	
5	K8IV
12	KB8UUZ
19	WB2DFC
26	KD8SKL

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

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

If you have not been a Net Control Operator for PCARS and would like to give it a try, *please* contact me at: KA8TOA@portcars.org

Everyone who is a club member is welcome to have a turn - and have fun being Net Control !

Net Operators: Please remember to e-mail me a copy of the log for the club records and certificates.
If you have some issues and can't make it as net control see if you can trade with someone.

Daylight Saving Time Starts March 11th

SPRING FORWARD - FALL BACK

Yep, Sunday March 11th Daylight Saving Time starts. At 0200 local, turn your clocks **ahead** 1 hour.

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



Examples:

March 10th - we are still on **EST** (Eastern Standard Time).

At 0800 EST (8 am for you non-military people) it is 1300 UTC (1 pm) - That is a five hour difference between Ravenna, OH and Greenwich, England.

March 11th - we are now on **DST** (Daylight Saving Time).

At 0800 EDT (Eastern Daylight Time) it is 1200 UTC (noon) - That is a four hour difference between Ravenna, OH and Greenwich, England.



FYAO 2018

Chuck, W8PT FYAO Chairman

Well, the Freeze Your Acorns Off (FYAO) for 2018 is now history. It started off a little slow and stayed that way all day. We ended up with only 1 station operating. Frankly, there was a lot less freezing this year than in years past. A bit of rain, but it was kind of warm. Great weather for the traditional Hawaiian shirts.



And if you didn't make it out to Fred Fuller Park, you missed a lot of fun and a lot of good food. It always is surprising to me the amount of food that finally shows up when only a couple of people let me know that they were planning to bring something. I'm certainly not complaining, since I enjoyed Chili, Sloppy Joe's, various soups, and more.

So I'm sure you want to know how things turned out.

**The winner this year is Dan - WD8DAU
with 19 points**

**Congratulations to Dan! His name will be added
to the Freeze Your Acorns Off winner's plaque.**



We also held our Best Recipe cook off. And I have to say if you went away hungry, it was your own fault. We had three impartial judges, whose names will remain secret to protect them from angry contestants.



The winners this year were:

First Place - Ed, K8IV - 'The King of Sloppy Joe'
Second place went to Amy, KD8SKL
Third Place went to Rick, K8CAV
Fourth place went to Ned, N8GPS

There you have it. **Congratulations to all the winners and participants in this year's QRP event.** I really believe that everyone who attended had **BIG FUN!**



FYAO 2018
Feb 10th
Fun in the park

FYAO 2018
Feb 10th
Fun in the park

FYAO 2018
Feb 10th
Fun in the park

FYAO 2018
Feb 10th
Fun in the park

FYAO 2018
Feb 10th
Fun in the park

Pictures from FYAO , 2018





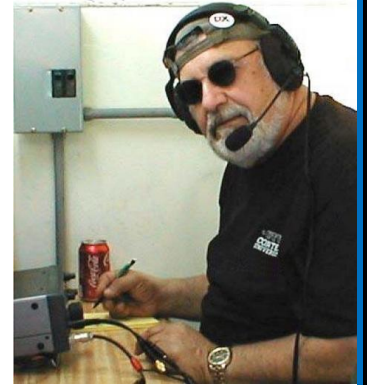
Feb
10



FYAO
2018

Charlie the Tuner's HF High-Lites

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



Hello to all you DXers:

The bands have not been very accommodating lately. DX can still be heard and worked but if you are looking for that rare one, then you somehow need to monitor the bands 24/7. However, there are DX happenings afoot and much of what I presented last month will be taking place in March and April. So you will see a lot of reminders listed below along with some new entries.

So let's take a look at what will be happening DXwise in the coming months.

Thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, ARRL Bulletins, AB5K & the AR TelNet Clusters Network, N1DG, NJ1Q & W1AW, K3LR, NG3K & ADXO, W3UR & The Daily DX, WB6RSE, W7GJ, K8GI, K8YSE, W8GEX & 60m DX News, DL1SBF, DL7UXG & The DX News Letter, DxCoffee.com, DXNews.com, DX-World.Net, ES1CW, F6AJA & Les Nouvelles DX, I1JQJ/IK1ADH & 425 DX News, I2MQP & DX Italia News, OZ6OM & 50 MHz DX News, Sixitalia Weekly, and VA3RJ & ICPO and the WIA Website for the following DX information.

And as always, this report "could" contain "**Pirate/SLIM**" operations or more likely a "**BUSTED CALLSIGN**". As always, you never know, so..... "**Work First Worry Later**".

PLEASE NOTE: The fact that donation requests from various DXpeditions are at times included in this column, does not mean that PCARS or this HAM approves or disapproves of donating to the DXpeditions listed. I am only providing information for you to make up your own minds as to whether or not to donate.

3D2/R, ROTUMA ISLAND (Reminder). Operators Tony/3D2AG, Heye/DJ9RR, Erno/ DK2AMM, Hans/DL6JGN and Ronald/PA3EWP active as 3D2EU from Rotuma Island (OC-060) until March 16. They will have two radio locations on the western peninsula of Rotuma. One in Fapufa in the south. This is the annual QTH of Tony. The second QTH is in Maftoa on the north coast. This is a joint operation using the resources of Tony and the European group. Activity will be on 160-10 meters using CW, SSB and the Digital modes. The team will use two stations (2x K3, 1x Expert 1, 3k-FA and 1x Tokyo Hy-Power HL-1.1KFX), a Spiderbeam and vertical antennas. Subject to a reliable Internet connection, they will upload the log to ClubLog on a daily basis. Otherwise the complete log will be uploaded upon their return. QSL via DK2AMM (OQRS, direct, by the Bureau, LoTW). They now have a Web page online at: <http://www.rotuma2018.de>

3Y0Z BOUVET DXPEDITION NEWS – By now most of you know that the Bouvet DXpedition was called off because of unsafe WX conditions. They are trying to regroup and I am keeping an eye out for reports on what they are planning to do. I will certainly let you know. For now, keep your fingers crossed and hope that some other means can be worked out.

4B4, REVILLAGIGEDO. Mark, XE1B, will be active as 4B4B from Socorro Island (NA-030, WW Loc. DK48mr), in the Revillagigedo Islands, between March 1-15th, 2018. Activity will be on 160-6 meters (no 30m) using SSB. Suggested frequencies are: 1850, 3790, 7065/7165, 7165, 14195, 18140, 21295, 24940, 28475 and 50140 kHz. Equipment will be an Icom IC-7600 transceiver with an ACOM 1010 amp into a Spiderbeam (20-10m), vertical for 40/80m, 160m long wire and a 4 element yagi for 6m. QSL via XE1B direct or Club- Log's OQRS. PLEASE support this DXpedition, it has been 7 years since the last operation by Mark, XE1B. Check out QRZ.com for more details and possible updates.

4S, SRI LANKA. (Reminder) Takayuki, JI1SHQ, has reportedly moved to Sri Lanka (AS-003) at the end of June, and will be active as 4S7TNG for the next several years. He is preparing his antenna and will soon be able to be on the air. Activity will be mainly on 30 and 20 meters using mainly CW. His station is an Icom IC-706MK2G transceiver (50w) into a V type Dipole, using two mobile whips; its height is approx. 60m. QSL via JI1SHQ by the Bureau.

5V, TOGO. John, N9MDH, will be active as 5V1JE from Lomé until end of May 2018, more or less. Activity will be on 80-10 meters (he likes the 30m band) using SSB and the Digital modes. He will use an Icom IC-7300 transceiver into a Gap Titan antenna. QSL via eQSL or LoTW.

C8, MOZAMBIQUE (Reminder). Members of the Lion DX Team (OT8T) will be active as C8T from Mozambique between May 2-15th, 2018. Operators mentioned are Kurt/ON8KW (Team Leader), Roger/ON7TQ (Co-Leader), Bruno/CS7ABG (Co-Leader), Paulo/CU2CO, Emil/DL8JJ, Ron/ON1DX, Philippe/ON4ACP, Marc/ON4AMX, Erik/ON4CCV, Olivier/ON4EI, Hermann/ON4QX, Ivo/ON5CD, Cis/ON6LY and Franky/ON7RU. Activity will be on 160-6 meters using CW, SSB and RTTY, and possibly other Digital modes (PSK, FT8). They have permission to do 60m and will also do 2m-EME. The setup will consist of 4 stations on the air for 24 hours and a fifth station for 2m EME + 60m and extra digimodes on all bands. QSL Manager has not been named, but it looks like they will be using ClubLog. Look for more details to be forthcoming. Visit their Web page at: <https://mozambique2018.wordpress.com>

CN, MOROCCO. M'hamed, CN8NK, in Rabat, will be active as CN4P during the CQWW WPX SSB Contest (March 24-25th) as a Single-Op/Single-Band (??m) entry. QSL via EA5XX.

DP0, ANTARCTICA. Matthias, DH5CW, will be active as DP0GVN from the German Neumayer Station III (AN-016, WWFF DLFF-022, WW Loc. IB59UH) between mid-February 2018 to mid-February 2019. Activity will be on various HF bands during his spare time. QSL via DL5EBE.

E5, SOUTH COOK ISLANDS. Oleh, UR5BCP, will be active as E51BCP from Rarotonga Island (OC-013) between April 15-20th. Operation will also including some SOTA activations. QSL via KD7WPJ.

E5, SOUTH COOK ISLANDS. Operators Bruce/AD7MM (E51BAS), Marilyn/KI7DLK, Doug/W6HB (E51DLD) and Peter/WA6HXM will be active from Rarotonga Island (OC-013) between May 13-25th. Activity will be holiday style on 160-10 meters, and operating from E51AND and E51KC QTHs (also possibly from E51JD, E51BQ and E51CG QTHs). QSL via their home call signs direct (see QRZ.com).

FG/TO7, GUADELOUPE. Jean-Pierre, F6ITD, will once again be active as FG/F6ITD from Guadeloupe and one of its islands between January 29th and March 15th. Island mentioned is La Desirade Island (IOTA NA-102, Lighthouse GUA005 and French Flora Faune FFF 1000). Activity will be on all HF bands (160-6m) using CW, SSB and the Digital modes. Look for him to use the call sign TO7D during some contests. Radio equipment is a FT-450D + Tokyo 550 Power 500w. QSL via his home call sign, direct or LoTW (preferred). Logs will be uploaded to ClubLog and LoTW.

FG/TO3, GUADELOUPE. Operators Michel/F6GWV and Gildas/F6HMQ will be active as FG/homecall between February 23rd and March 12th. Activity will be holiday style on various HF bands using "light equipment". They will also be in the ARRL Inter. DX SSB Contest (March 3-4th) using the call sign TO3Z. QSL via F6HMQ. QSL FG/F6GWV and Gildas FG/F6HMQ via their home call sign, direct or by the Bureau.

FY, FRENCH GUIANA. Operators Didier/FY5FY, Herve/F5HRY and Marc/F1HAR active as FY5KE from French Guiana during the ARRL Int DX SSB Contest (March 3-4) as a Multi-Single/High-Power entry. QSL via LoTW.

H40, TEMOTU PROVINCE. After his Honiara operation, Chungki, VA7YM will be QRV as H40YM from Lata in Nendo Island, IOTA OC-100, until March 12. QSL via EA5GL.

JW, SVALBARD. Erik, LA2US, active as JW2US from Bear Island (IOTA EU-027) for the next 4 months. Activity will be limited to his spare time and he will operate on various HF Bands mostly CW at the lower band edges and IOTA frequencies. Also, on this trip he will be on BPSK, FT8 and RTTY. Equipment is a FT-450D, Signalink USB, Expert 1K-FA and a OCFD antenna. QSL via ClubLog's OQRS, LoTW or eQSL.

KL7, ALASKA (Attn: NPOTA enthusiasts). The North Country DX Association (NCDXA) will be active as KL7RST/KL7 from the Denali National Park in Alaska starting around April 20th. QSL via K7ICE. This stopover is part of the 2018 Worked All "RST" stations special event running from February 1st to May 31st. The NCDXA "RST" stations are on Facebook. Check out the hams you worked and learn about them at: <https://www.facebook.com/North-Country-DX-Assoc-K7ICE-1717462798496577>

LZ, BULGARIA, Special event station LZ140LO is QRV until the end of March to celebrate the 140th anniversary of Bulgarian Independence. QSL via LZ1ZF.

TX5, FRENCH POLYNESIA (Updated). Ops Bill/KH6OO and Will/W0ZRJ (son) active as TX5X from the north shore of Mt. Orohena on the island of Tahiti (OC-046) between March 10-17th. Activity will be on various HF bands using one 100w station (Flex 6700) into a vertical dipole. Modes will be CW, FT8, JT9 and JT65. All QSOs will be uploaded to LoTW, eQSL, QRZ.com and ClubLog (OQRS) at the completion of their trip. In addition, EVERYONE in the log will be sent a QSL via their Bureau. Please do not send them Bureau cards. Read "Tips to get into our log" on QRZ.com.

TY, BENIN (Update). Members of the F6KOP team, the Provins ARC, active from Bénin between Mar 7-18. Call sign is still pending. There will be an international team of 12 ops lead by Jean-Luc, F1ULQ. The other ops mentioned are Damien/F4AZF (Co-leader), Jo/ DJ3CQ, Arno/DL1CW, Andreas/DL3GA, Henri/F1HRE, Raymond/F5MFV, Xavier/F5NTZ, Philipp/OE7PGI and possibly others. Frank/F4AJQ is the team pilot station. Plans are to be active with 4 stations on the air, 160-10 meters using CW, SSB and the Digital modes (RTTY, PSK and FT8). QSL via F5GSJ, direct, by the Bureau, LoTW or their OQRS. For more details and possible updates, see: <https://ty2018dx.wordpress.com>

V3, BELIZE. Michael, K5MDK, will be active as V31MK from Maya Hill Lodge near central Belize between March 1-5th. Activity will be on various HF bands. QSL via his home call sign, direct or by the Bureau. He also plans to operate with V31VP during the ARRL International DX SSB Contest (March 4-5th). Watch QRZ.com for more details.

XV, VIET NAM. William "BJ", WA7WJR, reports on his QRZ.com page that he will once again be active as XV9WJR during April and May.

XV, VIET NAM. Sookun, HL1AHS and Jinho, HL1LUA will be QRV as XV9HL from Ho Chi Minh City until 6 to March 6. Activity will be on 160 to 10 meters using CW, SSB and various digital modes. QSL via HL1AHS. In addition, some members of the Lufthansa Amateur Radio Club will be QRV as XV9DLH from Phu Quoc Island, IOTA AS-128, beginning February 24. QSL via DK8ZZ.

3W, VIET NAM, Dirk, DF2XG is QRV as 3W9XG from Hai Phong while here on work assignment. Activity is in his spare time on 40 to 10 meters using CW. His length of stay is unknown. QSL via ops instructions.

3W, VIETNAM. Charles, W0DLE, will be active as 3W9DLE from Saigon for 90 days between February and April. Activity will be mainly 20 meters using CW, SSB and FT8, as well as entries in the ARRL International CW DX Contest (February 17-18th) and Russian DX CW Contest (March 17-18th). QSL via W0DLE.

YJ, VANUATU. Grant, VK5GR, announced this that he is "planning another holiday style DXpedition for 2018" on Efate (OC-035) between Apr 17-29. He hopes to operate as YJ0AG (waiting to receive the license). Activity on 80-10 m using mostly the Digital (RTTY, FT8, PSK, Olivia) as well as SSB and some SSTV, possibly CW. Grant states, "I am looking to particularly work unique stations and will be where possible targeting Europe Short Path where YJ is high on the ClubLog most wanted list. Operation will of course be intermittent as again family comes first but I will attempt to operate during the main openings (EU SP at night will be a feature). The station will be a K3/KPA500 with a G3TXQ UltraLight HexBeam for 20-10m plus a multi-band vertical for 80-10m (with water access along the EU SP and NA LP paths). I also hope to operate in the SPDX RTTY Contest." QSL will again be managed by M0OXO through his OQRS service for electronically requested cards delivered to you either direct or via the Bureau. QSL via the Bureau to VK5GR.

Z2, ZIMBABWE (Update). Operators Rune/LA7THA, Arne/LA7WCA and Thor/LA9VPA will be active as Z2LA between March 2-11th. Activity will be holiday style on various HF bands (160-10m) using CW, SSB and the Digital modes. QSL via ClubLog's OQRS, M0OXO or his OQRS. Visit their new Web site at: <http://www.la9vpa.com/z2la>

ZF2, CAYMAN ISLAND (Satellites, Grids, HF). Adrian, AA5UK, will once again be operating as ZF2AE from Grand Cayman (between March 1-4th) and ZF2AE/ZF8 from Little Cayman (between March 5-10). Activity will be holiday style (usually) on 40-10 meters using a IC-7300 and vertical antenna. Operations will be focused on the Digital modes (FT8, RTTY, PSK and other digital modes upon request) with possibly some SSB, and the satellites using 2x FT-817s and Arrow Antenna for satellite. Most of his activity will be in the afternoons and evenings. For the latest operational updates, watch his Twitter links <@AA5UK and @ ZF2AE>. QSL direct to AA5UK with a SAE/SASE, LoTW or eQSL.

IOTA NEWS.....

NA-102. Jean-Pierre, F6ITD, will be active as FG/F6ITD from **La Désirade Island**, lighthouse (LH GUA005) and France Flora Fauna site (FFF 1000) until March 15th. Activity will be on 160-6 meters with 500 watts and multi-dipoles using SSB, the Digital modes and CW. QSL via F6ITD.

OC-016. Jim, WB2TJO, will once again be active as 3D2JS from **Taveuni Island**, Fiji, until the middle of March, 2018. Activity will be on 40-15 meters using CW, SSB and the Digital modes. The rig will be an ICOM 706 MK IIG with an MFJ 971 manual tuner. QSL via his home call sign.

OC-128. Bodo, DF8DX, will be active as DU1WQY/1 from **Palawan Island** between April 15-18th. Activity will usually be on 40-10 meters using mainly CW with 100 watts into a vertical antenna. QSL via his home callsign, by the Bureau, direct or LoTW.

Well that's what I have for the coming month plus a few months out. I hope you find time to get on the air and work some DX. And take advantage of any of our club's Open House days and work some DX from the club site. Until next month, vry 73.

Digital SIG

Rick, K8CAV

Winlink 2000 is a digital system that allows users to send and receive conventional e-mail using radio to make the initial connection into the internet. It can be used by Amateur Radio Operators who are travelling and have no conventional connection to the internet, such as RV'ers and campers, marine mobile, and other to send and receive basic text e-mail.



It can also be used to support emergency operations with basic text e-mail where a regional internet outage exists.

The Digital Special Interest Group meeting for March will talk about the WL2K system and how it works, along with what you need to do to use the WL2K system. The meeting will be on Tuesday March 6th at 7:00 PM at the club site in Ravenna.

As always, we'll also be available to answer any questions or help with any problems you may have with digital modes.



Terry, KB8AMZ

Hello all. March 13th will be the next CW/QRP Special Interest Group at the PCARS Clubhouse at 1900 EDT. Doug, WA8UWV will be presenting his code practice oscillator. He'll explain the schematic and parts list. If time permits we will have some Get On The Air time for a few CW contacts.



Linux for Hams SIG

Hello all Linux users. March 27th will be the next special interest group meeting. Be sure to bring your RPi's and peripherals, e.g. - keyboard, mouse, monitor. I will be presenting some commonly used command line programs along with some tips and tricks to make your experience with your RPi more fun and meaningful whether you run a stand alone system or a headless system. You don't have a Raspberry Pi yet? Shame on you. So bring something to take notes, paper and writing utensils. If time permits and the network is not busy I may show you how to download and install some ham applications. I will also have Marv, KB1OIQ newest Ham DVD version 21 running on Ubuntu 16.04.3 LTS 64-bit version. If you need the 32-bit version go to sourceforge.net/projects/kb1oiq-andysham for downloading. This might run on your RPi but it will not be very efficient. Recommended hardware is 1GHz CPU, 1 GB memory (RAM), and 10-15 GB disk space. Note that recommended is always the bare minimum so you can expect less efficient operation.

And final input, there is a podcast titled "Linux in the Ham Shack" located at <http://www.lhspodcast.info/> Russ Woodman, K5TUX, co-hosts the Linux in the Ham Shack podcast which is available for download in both MP3 and OGG audio format. Contact him at russ@bluecows.com

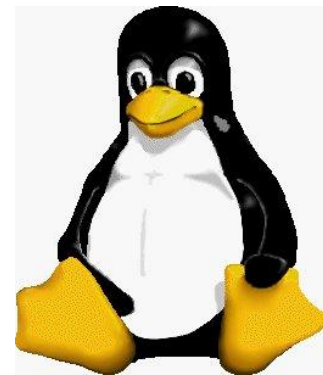
How to install LibreOffice 6 on Linux

This information was provided by Ron Herring, W7HD, Editor of the *Linux SIG Newsletter*. I have mentioned his newsletter in Radiogram Linux for Hams related articles previously. You too can receive this wonderful newsletter. All you are required to do is send an email with your name and call (if you have one), and your general location to Ron using this email: linuxsig@comcast.net to join.

Why Would I Want This Updated Version 6.0 Over The Stable Version 5.4 I Am Currently Using?

Check these features:

- A form menu has been added to Writer to make it easy to add forms to documents.
- New commands have been added to Calc for selecting unprotected cells on spreadsheets.
- Spell checking has been greatly improved.
- Impress has 10 new templates.
- LibreOffice online has seen several improvements.
- OpenPGP can now be used to sign documents.] end bulleted section



For full list of features and improvements, check the wiki Documentation page at LibreOffice 6.0 release notes at <https://wiki.documentfoundation.org/ReleaseNotes/6.0>

My Advice Before Proceeding To This Article

If you are a Linux newbie or squimish about doing anything out of your comfort zone, I suggest you wait for the newest LibreOffice to show up in the repository of your distribution of Linux. The instructions by Jack Wallen are straight forward. You shouldn't have any difficulty with the installation, provided you follow his instructions. Note: Jack's instructions are for Debian and Red Hat based distributions of Linux.

For the Newbies **ALWAYS**: If you feel that you might make a mistake and want to be sure that your /home directory is safe and secure you may want to make a backup of your /home directory prior to this procedure. For most users this is not required.

Jack Wallen's Installation Instructions: Visit this web site for instructions How to Install LibreOffice 6.0 On Linux at <https://www.techrepublic.com/article/how-to-install-libreoffice-6-on-linux/?ftag=TRE475558a&bhid=20298706887022346266466387843484> That's it. Enjoy learning the new features of LibreOffice 6.0.

3Y0I Bouvet Island DXpedition Revived

From the ARRL

Polish DXpeditioner Dom Grzyb, 3Z9DX, and four other operators announced over the weekend that their postponed plans to mount the [3Y0I DXpedition](#) to Bouvet Island are back on. This comes as the [3Y0Z DXpedition](#) team members, who were unsuccessful earlier this month in landing on the remote South Atlantic island, and had to re-route to Cape Town, South Africa on their way back home. According to the latest ClubLog [DXCC Most-Wanted](#) List, Bouvet is the second most-wanted DXCC entity, behind North Korea.

"Our trip, planned originally at the end of 2017, was canceled at the request of the organizers of the 3Y0Z expedition," an announcement said. "Due to the cancellation by the [3Y0Z] organizers, we are now returning to the implementation of our project and preparations for our trip as a matter of urgency."



DX-World has reported that the 3Y0I license has been renewed and a landing permit - good for 1 year - issued by the Norwegian Polar Institute. While no specific dates for the DXpedition have been announced, the 3Y0I team said its plans call for operating during the subantarctic summer, which suggests they could be on the air late this year.

The 3Y0I team said it has chartered a seagoing yacht adapted for extreme weather conditions to make the 12-day, 2,800-nautical mile trip from South Africa to Bouvet Island. The team anticipates operating for about 2 weeks. The participants have financed the trip out of their own pockets.

In addition to 3Z9DX, the 3Y0I operators will include Stanislaw, SQ8X; Leszek, SP3DOI; Branko, YU4DX, and Frans, J69DX.

Swap-N-Shop

FOR SALE: YAESU FT-2000 D 200 WATTS & POWER SUPPLY, two microphones, (Desk and hand mike), with manuals & books. The transceiver has been operated probably six times so it's like new. I tested it on 20 and 6 Meters, and it works perfectly. I also have the Yaesu box. HF+6. Featuring DSP filtering and a host of outstanding ergonomic and performance features. Asking \$1700.00 or Best Offer.



Contact Chuck, K8BBE at k8bbechuck@gmail.com or 330-936-9000 [4/2/18]

FOR SALE: Hammarlund HQ-180A general coverage receiver tunes from 540 to 30000 kHz in six ranges. It has improved mechanical and electrical stability, tunable BFO for CW or fixed BFO for optimum SSB, silicon rectifiers, accessory power supply and 115/230 VAC 50/60 Hz operation. Other enhancements include: antenna trimmer, noise limiter, RF gain, S-meter, stand-by and AVC on/off. There are 3.2 ohm speaker terminals on the rear panel. The clock works. It is in excellent physical and electrical condition. An original manual in excellent condition is included. It is used frequently and a demo is possible. The first reasonable offer takes this champion of the tube era. A complete new tube set was installed 6 months ago.



Contact Dave, N8NB at 330-501-5031 [4/2/18]

FOR SALE: 30' Aluminum Free-standing Tilt-Over Tower with Base Section. Ready to put up. Full specs can be found at http://www.universaltowers.com/pdf/standard_models/01-model-04-30.pdf \$300.00

Contact John, KD8MQ at 330-936-5021, or kd8mq1@gmail.com . [04/02/18]

FOR SALE: Package deal - If you're looking for a complete, no-tune 500-watt mobile (or home) station, this is it. All equipment is in excellent condition and worked the last time I put it on the air. If you want to use it as a home station, you'll need 2 additional separate power supplies (not included) to get on the air. I cannot sell separate pieces; all of the following must be sold as a package:

- ICOM 706mkIIg** (s/n: 1511093) with hand mic+ remote head connecting cord
- SG-500 amplifier**, fully transistorized, with SGC cooling fans attached (purchased in 2008; S/N 52963558)
- Tar Heel Model 40-A mobile antenna**, 1,000 watts capability, w/ 6-foot whip; works 40 through 10 m
- Ameritron AWM Mobile SWR/Wattmeter**
- Ameritron ARB 704 Interface Buffer**
- TuneMatic Model TM-1 Automatic Motorized Antenna Controller**

Total purchase price = \$1,790.00, payable in cash or bank check. Purchaser must pick up or pay shipping. The only reason I am selling is that I downsized my vehicle, and there is no room in my new one for all of the gear.

Contact Jack, K8HGX at: 330-995-0506 or email to: jack@alpernlaw.com [06/02/18]



PCARS K8BF

The Club that puts the FUN in Ham Radio!



PCARS
Join Now
Discover the FUN



Contest Calendars

March 2018	
Contest Name	Times - Date
ARRL Inter. DX Contest, SSB	0000Z, Mar 3 to 2400Z, Mar 4
Oklahoma QSO Party	1500Z, Mar 10 to 0200Z, Mar 11 and 1400Z-2000Z, Mar 11
Stew Perry Topband Challenge	1500Z, Mar 10 to 1500Z, Mar 11
Idaho QSO Party	1900Z, Mar 10 to 1900Z, Mar 11
Wisconsin QSO Party	1800Z, Mar 11 to 0100Z, Mar 12
Virginia QSO Party	1400Z, Mar 17 to 0400Z, Mar 18 and 1200Z-2400Z, Mar 18
Louisiana QSO Party	1400Z, Mar 17 to 0200Z, Mar 18
CQ WW WPX Contest, SSB	0000Z, Mar 24 to 2359Z, Mar 25

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

Keep the following dates open - K8BF will be contesting from the PCARS club site.

Check the PCARS web site for up-to-date details from Chuck, W8PT.

Contest Name	Times - Date
Idaho QSO Party	1900Z, Mar 10 to 1900Z, Mar 11
Wisconsin QSO Party	1800Z, Mar 11 to 0100Z, Mar 12
Florida QSO Party	1600Z, Apr 28 to 2159Z, Apr 29
ARRL June VHF	1800Z, Jun 9 to 0300Z, Jun 11
NA QSO Party - RTTY	1800Z, Jul 21 to 0600Z, Jul 22
CQ WW VHF	1800Z, Jul 21 to 2100Z, Jul 22, 2018
Ohio QSO Party	1600Z, Aug 25 to 0400Z, Aug 26
California QSO Party	1600Z, Oct 6 to 2159Z, Oct 7

PCARS
Join Now
Discover the FUN



Coming in May - **HAMVENTION® 2018** - Stay Tuned
More information in the April issue of The RADIOGRAM



PCARS Ham Radio License Plates Wanted !!!

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

We have 65 PCARS member's ham plates now, **but we can use more.** Don't have ham radio call plates on your vehicle? Well for those of you in Ohio, you can get the plates sent to you by going to any License Bureau office and filling out the special plate registration form. Have a copy of your current FCC license when you apply. The official form to obtain your Ohio Amateur Radio license plates is on the [PCARS Yahoo Group](#) site. Then you'll have an old plate to bring in to get hung up as a **permanent part of PCARS history.**



From the Ohio BMV:

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

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

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

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

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

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

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

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

PCARS is on YouTube

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

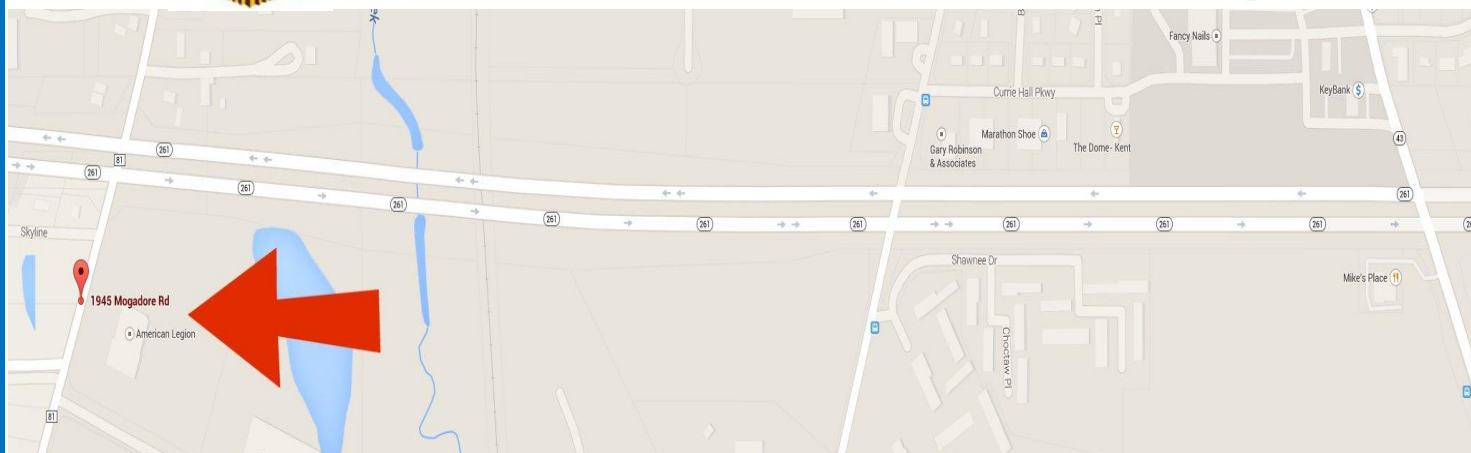


PCARS Meetings

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



*The meetings are held at The American Legion, Post 496
1945 Mogadore Road - in Kent. (Just South of Route 261)*



The American Legion Post 496 is located on the southeast corner of State Route 261 and Mogadore Rd. The driveway is on the south side of the building and as you enter you will pass through a parking lot on the south side of the building. Please do not park in this lot but instead continue on to the parking lot on the east side of the building which is the near the rear entrance into the Post 'Canteen'. As you enter the post from this entrance you'll see a bar to the left and a dining area to the right. The meeting area we'll be in is on the right, to the rear of the dining area.

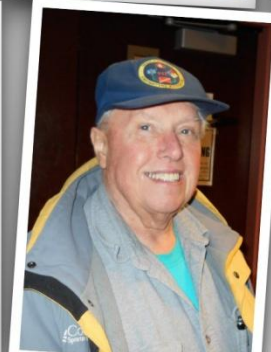
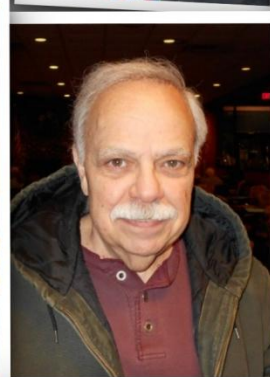
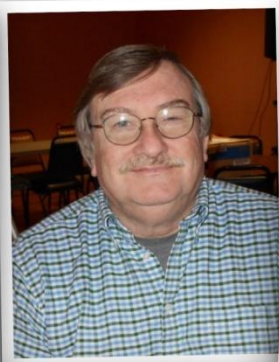


*The picture on the left shows
The American Legion Post 496
as viewed from Mogadore Road.
(looking East)*

The menu consists of your basic burger / dog / chicken sandwiches, wings, fries, onion rings, and salads. There is also an appetizer selection as well. Adult beverages are available and costs are in line with what you would expect at most bar-restaurant facilities.

If you are a member of the The American Legion, The American Legion Auxiliary, or the Sons of The American Legion, bring your ID card as you get a substantial discount on adult beverage pricing.

Photos from the PCARS Meeting in February





February 12, 2018





PCARS K8BF

The Club that puts the FUN in Ham Radio!



PCARS
Join Now
Discover the FUN





PCARS
www.portcars.org





Important Dates in March

March 2nd - Banana Cream Pie Day

On March 2nd every year, it's time to celebrate cream pie – banana cream pie, to be precise. On this day, pie lovers in the United States raise a spoon to one of the most popular sweet treats in the country. And if you want to join in with your own banana cream pie, don't worry – there's no law that says you have to share!

The History of Banana Cream Pie Day

A cream pie is very much what its name suggests – if you buy one or make one, you'll usually be getting a thin shortcrust pastry filled past the crust with thick creamy custard. On top is usually a thick layer of whipped cream, and depending on the chef it might be topped with coconut, nuts, or dusted with sugar or chocolate.



The creamy custard pudding which makes up its center is similar to creme patisserie, the main part of many French tarts. It's usually made from milk, flour, cream and eggs and has a soft, smooth consistency that helps give cream pie its wobbly appearance.

You've probably seen cream pies been used as a comedy gimmick by clowns, and in cartoons and kids shows, where getting a pie in the face is a time-honored way of getting some laughs. Although usually when used on TV, a cream pie will be a plate of whipped cream, without any bananas in there at all!

The English version of banana cream pie is called 'banoffee' pie, being a portmanteau of 'banana' and 'toffee'. The recipe for this desert is much richer than its American counterpart, calling for lashings of condensed milk and toffee and often served with ice cream.

How to Celebrate Banana Cream Pie Day

This is a simple one – all you really need to do to successfully observe this day is to get your hands on one of the sweet treats yourself! You don't have to go far to find a supermarket or patisserie that will be able to sell you a slice or two, but to really get into the spirit of things you could always try your hand at rustling up a pie of your own!

To make a good banana cream pie, you only need a few ingredients – pie crusts, milk, cream, egg, banana, sugar. Simply pour your custard mixture into the pie crusts and top with whipped cream – add an extra flourish with some powdered chocolate or shredded toffee.

March 11 - Check Your Batteries Day

We all know that some days are silly or light-hearted, but there are others which serve an important purpose. Check Your Batteries Day is definitely highly recommended because it could actually save your life.

Created to raise awareness of the importance of testing and having working batteries in household appliances like smoke detectors and carbon monoxide detectors. These devices help to warn you of a potentially life threatening situation, giving you vital time to get yourself and your family to safety. However, it's important they are tested (usually you can do this by pushing a button) regularly to ensure they're working correctly. Check Your Batteries Day is a reminder to do just that.



While you're in the routine of checking, it's a good idea to check other household appliances, such as remote controls, toys, clocks and other electrical items. If you don't have spare batteries on hand, consider buying some.

March 14th - Potato Chip Day

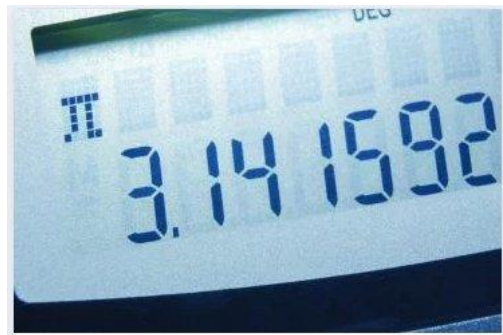
This is one holiday you may take with a pinch of salt! Potato Chip Day is a celebration of the world's best-loved snack, first created in the 19th century. Tycoon Cornelius Vanderbilt was staying at Saratoga Springs in New York and kept on sending back his French fries because he said they were cut too thick. Chef George Crum cut his spuds as thin as possible, initially as a joke – and the result was the world's first potato chips. The snack's popularity spread in the 1920s, when the first mass-produced packs went on sale.

Lay's Potato Chips were the first big-name brand, but there are also many other products on the market. It's not clear when the holiday was invented, but you can chip in and join the celebrations. Just invite round some friends to try some of the most unusual flavors, like seaweed, buffalo wing and ketchup.



March 14th - Pi Day

Pi, wonderful pi. It plays into so many aspects of our lives and goes on forever and ever and ever and ever and eve... You get the point. Every year there comes a certain day that shares numerical values with Pi, and on that day there is a celebration of Pi with every kind of Pie you can imagine. You see, pies are round, and Pi is circumference over diameter, a number that, while being functionally infinite, also happens to be a constant in every circle ever. Pi day celebrates the long history of this fantastic number, and the long journey science has taken (and is still on) to seek the end of a number known to be infinite in length.



History of Pi Day - The history of pi day is, without a doubt, intrinsically tied to the origins of the number itself. The need for pi is as old as the wheel itself, and many techniques have been tried in many cultures to capture this elusive number in mathematics. The reach for the whole of this number was difficult, with ancient mathematical cultures only being able to barely find out to the seventh decimal, and Indian mathematicians (some of the greatest of their time) could only manage to decipher it out to five. Pi is truly one of the most fascinating numbers in existence, and the quest for the ultimate end of Pi has been sought for time out of mind. This seems a fool's errand, given that it seems to extend infinitely in mathematical loops beyond and nothing has ever been found to contest this, this is particularly remarkable when you consider the following: modern techniques have been used to calculate pi out to millions of digits, and at no point has the pattern ever been found to reliably repeat itself.

How to celebrate Pi Day - Ahhh an easier and more delicious question has never been posited! How do we celebrate Pi day? Why, by eating a great deal of Pie! Remember, Pies are circles, Pi describes circles, and through that we find that everything in the universe can be described with a pi(e). Other ways to celebrate this most amazing and transcendental of days (Pi is a transcendental number, look it up) is to research this number and discover all the amazing secrets it hides. Once you really get to understand the depths and complexities of it, you'll understand why Pi day exists to celebrate a simple combination of digits.

March 15th - Buzzards Day

The annual celebration of a bird whose circling overhead was a signal to the cowboys of old that a once living creature had met its demise seems strange to say the least. Yet, Buzzard Day is circled on the calendars of many dedicated Ohio residents who, once a year, eagerly scan the skies with binoculars watching for its return. For them this graceful, winged creature with its bald head and red beak signals, not death, but rebirth.

The mid-March buzzard celebration is led by an 'Official Buzzard Spotter' on the Hinckley Reservation in the Cleveland Metroparks. A large number of enthusiasts converge on Buzzard Roost at around 6:30am in anticipation of the bird's return. Those for whom this is beyond the call of duty can still participate in the joyous celebrations by attending Buzzard Sunday for festive family fun that celebrates the return of this flying precursor to spring.



March 17th - Saint Patrick's Day

Saint Patrick's Day, colloquially St. Paddy's Day or simply Paddy's Day, is an annual feast day which celebrates Saint Patrick, the most commonly recognized of the patron saints of Ireland.

Saint Patrick's Day is celebrated worldwide by those of Irish descent and increasingly by people of other ethnicities as well, notably in Argentina, Australia, New Zealand and North America. Celebrations are generally themed around all things Irish and, by association, the color green. Both Christians and non-Christians celebrate the secular version of the holiday by wearing green, eating Irish food and/or green foods, imbibing Irish drink and attending parades, which have a particularly long history in the United States and in Canada.



Thanks & 73



Parky, KB8UUZ
PCARS Newsletter Editor



All of our members (and others) look forward to getting this newsletter every month, so keep sending those inputs! I'm sure PCARS is known as the **BIG FUN** amateur radio club with plenty of activities. So chip in and send your report in to keep this newsletter great all throughout 2018.

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

AC8NT, WA8AR, KB8UUZ, AB8YK, W8KNO, WB8LCD, N8RLG, KB8AMZ, WA8UWV, KD8WGR, WA8GCF, K3LR, KA8TOA, W8PT, K8CAV, NF8R, CQ Magazine, The BBC, James Careless - Radio World, ARRL and the World-Wide Web.

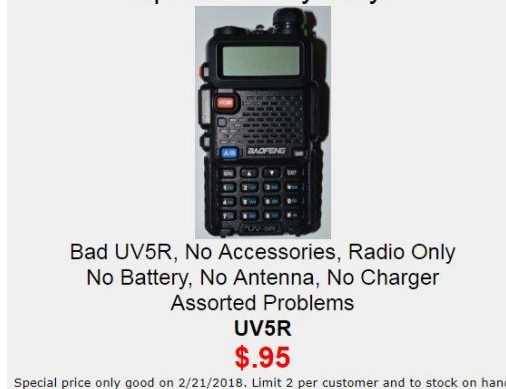
With *your* continued help – we can keep making this a *great* newsletter.



This sounds like Ohio



This was a REAL ad on a dealer website
Special Today Only!



Hamfest Sign



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

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

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

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

PCARS uses the **K8IV** repeater: **146.895 MHz** PL 118.8 in Sugar Bush Knolls ~ PL 110.9 in Ravenna ~ EchoLink Node: K8SRR

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

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

~ 2018 Officers ~		2018 PCARS Appointments & Committees	
President - Jim Wilson - AC8NT Vice President - Tony Romito - WA8AR Treasurer - Amy Leggiero - KD8SKL 3 Year Trustee - Ed Polack - K8IV 2 Year Trustee - Robert Gurney - N8RLG 1 Year Trustee - Erica Pelz - AE8YL Past President - Rick Kruis - K8CAV	ARRL Awards - DXCC WAS, VUCC, WAC	W8KNO	Joe Wehner
	ARRL Awards - WAS	KB8UUZ	Tom Parkinson
	Club Site Manager/Liaison	K8CAV	Rick Kruis
	Contest Coordinator	W8PT	Chuck Patellis
	EchoLink	K8SRR	Steve Randlett
	Field Day Chairman, 2018	WA8AR	Tony Romito
	FYAO Chairman	W8PT	Chuck Patellis
	Historian	KB8SZI	Peggy Parkinson
	K8BF Callsign Trustee	K8FEY	Bob Hewett
	K8BF QSL Manager	K8FEY	Bob Hewett
	Membership Chairman	WB8LCD	Tom Sly
	Net Control Manager	KA8TOA	Greg Ash
	Net Night - Club Manager	WB8LCD	Tom Sly
~ Meetings & Net ~		Newsletter Editor	
2 nd Monday of each month. 7pm Thursday night Club Net at 8 pm on 146.895	OSPOTA Chairman	KB8UUZ	Tom Parkinson
	Public Information Officer	WB8LCD	Tom Sly
	Secretary	WB8LCD	Tom Sly
	Tech, Gen & Extra Class Manager	AC8NT	Jim Wilson
	Volunteer Examiner Liaison	N8RLG	Robert Gurney
	Webmaster	KD8MQ	John Myers



**PCARS
Active
Volunteer
Examiner
Team
Members**

N8RLG	Robert Gurney
KB8UUZ	Tom Parkinson
WB8LCD	Tom Sly
N8XTH	Deron Boring
N8PXW	Jim Korenz
N8QE	Bob Hajdak
K8IV	Ed Polack
W8RID	Robert Davet
WA8CCU	Al Nagy
NR8W	Russ Williams
W8EZT	Frank Tompkins
AC8NT	Jim Wilson
K8MSH	Mark Haverstock
KA8TOA	Greg Ash
KB3GXB	Jennifer Williams



THE RADIOGRAM

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliation
April 20, 2006



Special Service Club
March 22, 2010

The **RADIOGRAM** is the official newsletter of the Portage County Amateur Radio Service, Inc. (PCARS) – copyright © 2018. The **RADIOGRAM** is an **Award Winning** newsletter: **ARRL Ohio Section Newsletter First Place Winner for 2012 AND 2013. Second Place in the Great Lakes Division for 2013. Second Place ARRL Ohio Section Newsletter for 2014. Third Place Winner in the Ohio Section 2015. Second Place Winner in the Ohio Section for 2016. First Place Winner in the Ohio Section for 2017 and First Place Winner in the Great Lakes Division 2017.** Articles are the opinion of the authors and not necessarily those of PCARS. Or, better yet, let me express it this way: "These are my opinions and only my opinions, unless you share them as well, which would make them our opinions, but I am not of the opinion that I can express your opinion as my opinion without your prior expression of said opinion, and then my re-utterance of that opinion would, in my opinion, be foolish unless I were expressing agreement to your opinion, and then it wouldn't be my opinion but your opinion to which I only agree." **GO AHEAD - STEAL THIS NEWSLETTER! You have our permission to post, e-mail, copy, print, or reproduce this newsletter as many times as you like, but please do not modify what you use. If you use material in this newsletter, all we ask is that you give credit to PCARS along with the author of the article.** Caution - some of the articles in this newsletter maybe covered by copyright - please do not copy and use the ones that have by-line information unless you obtain permission from the original author. If you're not sure, drop an e-mail to KB8UUZ@gmail.com. The **RADIOGRAM** always obtains written permission for reproducing copyright material. The **RADIOGRAM** comes out the first day of each month (usually), please have inputs submitted by 8 pm ET on the last Friday of each month. ARES® (Amateur Radio Emergency Service®) is a program of, and both logos are registered trademarks (used with permission) of the American Radio Relay League, Inc. ARRL, the National Association of Amateur Radio™. **Why the Black Squirrel in our logo?** For those of you not familiar with it: The Black Squirrel is commonly seen around Portage County, Ohio. Seems that some of these little guys and gals got loose from Kent State University back in 1961. They have migrated and thrived throughout our county. Kent State University even has an annual Black Squirrel Festival. **So when you spot a black squirrel – think PCARS!**

This is an **Electronic E-Mail** version of the **PCARS Newsletter, The RADIOGRAM**. The advantages to receiving this way are: You get **COLOR** pictures, active links, **NO** postage needed and the newsletter is delivered right to YOUR e-mail box! The **RADIOGRAM** is published every month and only sent to subscribers. If you would prefer not to receive this newsletter, we understand. We'll try not to take it personally. It's not you saying you don't like us, but maybe you just don't have the time to look at all this hard work we've done just for you. Hey, that's cool. But if your heart is truly set on making sure you no longer receive this newsletter, even though we promise to one day reveal the meaning of life in it and you're going to be really upset when you miss out on that, we can take you off the e-mail list. Yes I know the cover says there is a cost, don't worry you won't get sent a bill or be hounded by bill collectors. Since this now looks like a magazine, I thought - what the heck, let's put a price on it. Every month it's listed in a different currency just for fun. Send your newsletter inputs (in **.TXT format**) along with in-focus pictures (not small 50 kb photos) to the newsletter editor: KB8UUZ@gmail.com



NLC

