



The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works

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

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Looking for Field Day Help



Lithium Batteries - FIRE

New Kenwood Contest Transceiver Review



PCARS K8BF

The Club that puts the FUN in Ham Radio!



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Mark Your Calendars

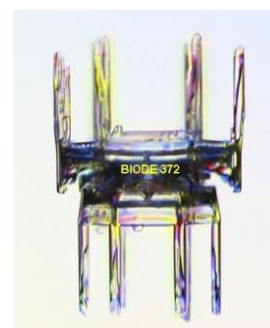
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From the President

Rick, K8CAV
PCARS President



As I am writing this column, I can hear the rain falling outside, as it's been doing all day long. A quick look out back before dusk showed virtual lakes in many places and the pond overflowing its banks. Checking the weather site shows rain tapering off so hopefully we'll avert flooding issues locally but there's an alert out for flooding in Canton.

Just a week or so ago we had some incredibly high winds that knocked down trees and resulted in numerous power outages, some lasting for more than a day, throughout the county. Both of these weather occurrences were severe enough that they might have required the assistance of volunteers and in fact the Portage County HS/EMA Coms Unit and the Incident Management Assistance teams were both asked to stand by in the event they might be needed. Fortunately, that did not become necessary but in light of these incidents it's worthwhile examining the help that we as Amateur Radio Operators might bring to the table. In our county, Amateur Radio is associated with two organizations that provide volunteer assistance. The first is ARES® of Portage County, and the second is the Communications Unit of Portage County Homeland Security/Emergency Management Agency. While the particulars of each of these groups differ somewhat, the common element to both is Amateur Radio Operators volunteering to become part of them, using their skills, training, and time to help our community. Both groups rely on you to make them effective volunteer organizations for our community and both really need more of you to volunteer to keep them effective. Please consider volunteering with either or both, and contact Mike KD8FLZ at dewado@aol.com for information about ARES®, or Jim KC8PD at racesportage@aol.com for information about the Coms unit.

It's been known to snow in April in northeast Ohio (and that's no April fool!) but with the mild winter we've had and current reasonable temperatures we can hope winter is but a memory and spring is really here. With all of the winds we had a couple of weeks ago, now is the time to survey your antennas, feedlines, and other outdoor equipment for damage and come up with a plan to get everything back in tip-top shape. Regardless of what needs to be done, I can't emphasize enough how important it is to make sure whatever you are doing is done with SAFETY as the number one priority. Especially because of the winds that occurred, damage could have taken place that isn't casually observable and that could cost you serious injury or death so be careful and plan ahead when working on your repair projects.

And with spring we can start to look forward to one of our most enjoyable operating events, Field Day! Chuck, W8PT has put together a great team and a great plan. What we need now is for you to volunteer to help him out. Every one of our stations needs operators and loggers. The Power Team, Food Service Team, IT Team and others need your help. This year we're putting a new team in place whose job it will be to erect the antennas for the stations. It's tempting to say that Field Day is down the road and I have time to let them know what I want to volunteer for but it's really not at all far away. So please consider how you would like to help Chuck and his team with and let them know now rather than later how you'll help.

We have a lot of other things going on for you. The Michigan QSO party is this month. We're conducting a General upgrade class starting in April. Jim has a great presentation for this month's meeting on DMR radio. Our regularly scheduled Special Interest Groups, and more. All this so that members of PCARS have the opportunity to get the most out of this great hobby. The only thing we need is for you to be involved, so make time to show up and enjoy the best group of Amateur Radio Operators around and have some K8BF **BIG FUN!**

From the Vice President

Jim, AC8NT
PCARS Vice President



I have been working on a lot of Raspberry PI and Arduino projects aimed at providing low cost solutions to using digital modes on HF and VHF. One project uses a PI to run JT65 and JT9 connected directly to a transceiver without the need of an additional rig interface. This is a \$50 project that is working fine. It was not as easy as I anticipated. I needed to recompile all the modules and find a cheap way to interface the audio signals between my ICOM 7000 and the PI. I also built a filter bandwidth measuring system from a QRP-Labs Arduino shield and a few components I had in my "hell box". This board along with a scope actually plots the filter characteristics. I found it handy in building low pass and band pass filters. My plans are to leave this gear at the club site so anyone can use it. It is a pretty cool setup.

Looking forward we have a lot of events coming up. In preparation for Field Day we are going to have a **training session in the use of WinKey** for those interested in running CW at Field Day. This is a very useful tool for racking up contacts. It is easy to learn and the keyers will be already setup for use. This event is planned for **Saturday April 15th**. That same day we will be providing **training on the logging software** for those that need it. If you plan to log and think you need help with the software, show up on **April 15th**.

We have two build days scheduled. These are the result of the survey that was taken at the March meeting. The first will be to build 4:1 and 1:1 and a switchable 4:1/1:1 baluns. We will provide all the materials for these low powered baluns. You can easily build one of these in a couple of hours. **This build will be on May 13th. The second build will be on June 10th** and will involve building a computer system supporting JT65 from a Raspberry PI. You will need to provide the PI but everything else will be provided for you. This is a software project that will not only set you up for JT65, but also teach you some Linux commands.

If you are interested in any of these events, let me know as soon as possible. It will allow me to order enough materials for everyone. If you are interested in the PI project you will need to have a PI version 3 for the project.

A General Upgrade Class is scheduled to start April 19th. If you or anyone you know are interested in upgrading this is a great opportunity to learn the material. The class will run 8 weeks with the last session a VE test session. Again, I need to know how many are interested. Just drop me an email.

Our April club meeting will feature Ken Dorsey, KA8OAD. He will be giving a presentation on DMR digital radio. He plans also to provide a demonstration of this new technology. The May meeting will feature Rick Kruis, K8CAV talking about ARES and other emergency support groups. Both meetings will provide some great information.

Check out our website at www.portcars.org for a calendar of events coming up. We plan to have lots of fun in the coming months.



Schedule of Events

On the calendar for upcoming meetings and activities are:

- April 10th - PCARS Meeting - 7 pm - DMR Presentation
- April 15th - WinKey and Software Logging demos at the club site - 9 am to noon
- April 15th - Michigan QSO Party - K8BF On The Air - 11 am to midnight
- April 19th - General Upgrade Class Starts - see flier
- May 6th - Antenna Day - Rehearsal day for Field Day 2017
- May 8th - PCARS Meeting - 7 pm - ARES® Presentation
- May 13th - BALUN Build Day at the club site - 9 am to noon
- June 7th - VE Testing at club site - end of General Upgrade Class - 7 pm - walk-ins welcome
- June 10th - PI Build Day at the club site - 9 am to noon
- June 24-25th - Field Day 2017

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



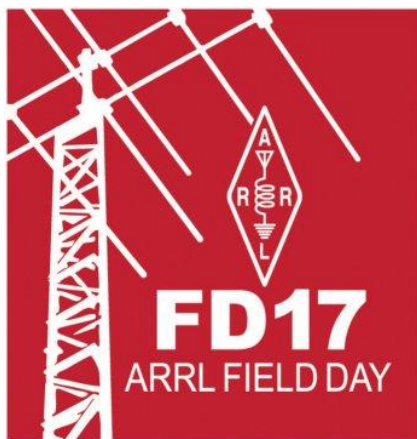
First Tuesday - **Digital** - Moderator: K8CAV
Second Tuesday - **QRP/CW** - Moderator: WB8LCD
Third Tuesday - **Antenna** - Moderator: WA8AR
Fourth Tuesday - **DX & Contest** - Moderator: W8PT
Fifth Tuesday - **Linux for Hams** - Moderator: KB8AMZ

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



First Call for the CW Station - Field Day 2017

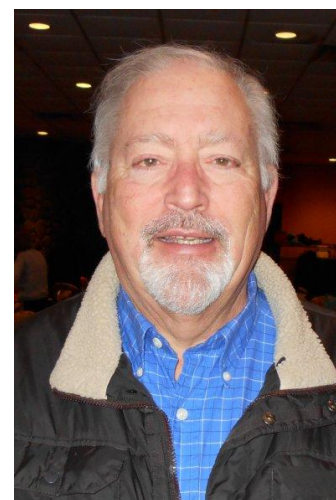
George, K3GP



Field day is less than 90 days away, and we are seeking operators for the K8BF CW position.

If you plan to operate, are just thinking about operating, or are simply interested in operating CW, let me know. If you have a preferred operating time, we will do our best to accommodate your schedule.

We particularly would like to hear from anyone who wants to commit to operating starting at the opening (2 PM local time Saturday) to get the K8BF CW effort off to a strong start right out of the gate.



The CW position will again be located in a comfortable enclosed utility trailer out of the sun, rain, sleet and snow... Drop me line at: K3GP@portcars.org

Move Forward - Part 2

Tom, WB8LCD

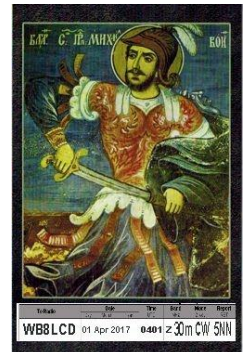
Last month I suggested some Amateur Radio activities you should consider taking part in. The whole purpose being to keep you moving in, motivated in and excited about the hobby. Ham Radio IS the most exciting hobby some one can participate in today! Don't miss out on all of the fun just because you can't think of anything to do. Here are some more suggestions:

Equipment Modeling: Sure, you may not be very good with a soldering iron, you may not be able to wind a toroid or build your own case with a metal pan brake.



Shack Shot composed of mostly "modeled" radios to have someday! Use that photo on your QSL card, or even in your club's newsletter "Shack Shot" and you will impress all of us "lesser hams" with all the cool equipment you operate on!

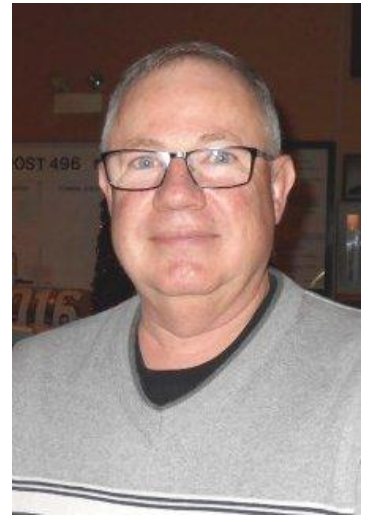
Build a Cool Display Wall in your Shack: Just like Parky, you can have a cool wall filled with awards and QSL cards from all over the world! EBAY is your friend here. You can buy all kinds of QSL cards from every country on planet EARTH. Go ahead, hang em up and pretend they're yours – whose gonna know the difference anyhow! Same thing with the certificates. You can buy certificate paper at any craft store and make up some really fine looking and complimentary certificates! Get ideas out of QST where they have a monthly listing of contests and special events. Do you really think anyone is going to question your certificate for the 15 meter CW contact you had with the special event station in Bugarslavia commemorating the freedom fighters of 1827?



WAS: Worked all States? No – that's and easy one. Anybody with a radio could do that. I'm talking about "Worked All Stools". You'll need to be an active member of PCARS (get those dues paid, will ya?) And, you'll have to come to the PCARS monthly meetings. I figure there are about 40 stools around the canteen bar at the American Legion Hall. Have you had a beverage on every single one of them? Being a relatively new award, you might even have a chance to get certificate # 1 or 2! You're going to have to get busy – between NR8W and WB8VYW those first two numbers will probably be issued fairly soon!



WB8VYW earnestly at work on his WAS award



Build an HF Vertical Antenna: So here's the dilemma, you don't have the bucks to shell out for a PRIMO DX vertical, but you don't want to buy a piece of \$%#&%^ for something of lesser quality. How about building your own? I'm thinking of a "Vertical Beverage" antenna. This would be a quarter-wave monopole built from beverage containers. If you want to start at the bottom and work your way up, the first thing you're going to need is an empty glass beer bottle. This will serve as the insulator between the ground plane and the radiating sections of the antenna. Next you'll need to gather up a blow torch, some aluminum solder and a large number of empty Aluminum beer cans. You'll have to do the math to figure out how many empty cans you'll need, 10 meters will require fewer cans than 160 meters. Yes, the cans are soldered together to give you the proper length for your chosen frequency!



Ham Radio Demo Contact: Has this ever happened to you? Some non-ham friends come over and want to see the radio room. The question comes up: "Can you talk to someone in Deluth?" to which you answer "Deluth, Bucko, I can work **Tierra Del Fuego!**" Now their interested. Show us someone says. You fire up the rig, bands are dead. The Big Guns on 40 don't want to talk to you.



Tierra del Fuego is an archipelago off the southernmost tip of the South American mainland, across the Strait of Magellan

Don't go down in defeat – have a radio "Demo" contact all ready to go! (Works GREAT in one of your modeled radios, as above) Scanning the bands, find some really good QSO's going on. Record those QSO's. Edit those QSO's. Put a player in one of those model radios, controlled by the PTT button on a real MIC. Now, you get on the air, and control the conversation via the MIC! Your none-radio friends will never know that this isn't happening "real time". And it was a real QSO at one time, wasn't it? Never again suffer from the embarrassment of failing to make a Q to impress the unaware.

Stay tuned next month for more inspirational articles in the "**Moving Forward**" Series.



PCARS K8BF

The Club that puts the FUN in Ham Radio!



First Call for the Flex Station - Field Day 2017

Rick, K8CAV



Total thanks to the thirty volunteers who have signed up to operate and log at the Flex station for Field Day but that means no more positions are open to anyone else so ... well April Fools though it would have been nice had it been true! Bottom line is no one's yet volunteered for the Flex Station. You may be saying to yourself that it's early yet, only April but Antenna Day is next month and Field Day just a month after that.



So, let's talk about the Flex Station. The Flex Station is both band and mode agile, meaning we can operate on almost all HF bands and modes. There's only two bands we can't operate phone on, 20 meters and 40 meters. When it comes to CW we only need to make sure that we're not operating CW on the same band at the same time the CW station is operating on. With digital we can operate on all of the HF bands as there are no other PCARS stations that operate digitally at Field Day.

Under better sunspot conditions our plan would ordinarily be to concentrate on the 10 meter and 15 meter bands during the day. We still plan on at least making an effort on 10 and 15 though anyone listening to those two bands of late knows we may not be entirely successful there. In that event, Flex will move to 20 meters digital or CW (as long as the CW station is not on 20) and operate there until propagation starts to fade. At that time, we will move to 40 meters digital or CW (as long as the CW station is not on 40) and continue until conditions are such that we move down to 80 meters. On 80 meters we can operate digital and phone without restriction, and CW as long as the CW station is not on 80.

For equipment, the Flex Station will operate out of an air conditioned trailer. The primary radio will be a Yaesu FT-991 working into an auto-tuner that will feed either an 80m dipole, a 40 meter dipole, or a 20 meter dipole. A Heil headset will be used for phone. For CW, a Winkeyer will be used along with a set of paddles from the club. For digital, a laptop running fldigi will be used with macros set up for K8BF Field Day. Receive audio will be fed into an audio splitter to feed operator headset, logger headset, and speakers, each with the ability to set volume levels independently. IT will have a separate computer for logging.

One of the nice things about the Flex Station is that it is not as much of a high-pressure operation as 40 phone, 20 phone, or CW and that means you don't have to be the big gun operator to be effective. In the past, we haven't had a lot of operators or loggers contact the Flex Station Captain ahead of time to schedule a time to operate. This not only puts more pressure on the Station Captain, it makes for less efficient operation, less contacts, and a lower score than we might have otherwise had. I would ask that if you have any interest at all in operating the Flex Station during Field Day that you drop me a note at k8cav@portcars.org to let me know when and what modes you want to operate or log. Thanks!



WI, ID and the upcoming MI QSO Parties

Chuck, W8PT

WI QSO Party

During the same weekend that the Idaho QSO Party took place (Mar. 11-12, 2017), K8BF also took part in the Wisconsin QSO Party. This was a 12 hour event on Sunday of that weekend.



Here again was a chance for our ops who do not or have not had the opportunity to participate in contests, to have some fun and learn at the same time. Hats off to Amy, KD8SKL who logged the most contacts and seemed to be having a lot of fun doing it.

Last year we entered as a Multi-Multi Op Fixed Low Power station. We scored 1054 pts. This year we were faced with propagation that was not the best, but got better as the contest progressed. We ended up with 2812 pts which made all of us very pleased with our effort.

Our log has been submitted and we will await the results with hopes that we will end up somewhere near the top.

I tip my hat to all the ops who decided to come out and "play radio" for the day. I know that we all had fun and look forward to doing it again. I encourage you who want to try but for whatever reason, could not bring yourself to come to the club -- please do so the next time we are having an event. It's a lot of fun and you just may get hooked on RadioSport.

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ID QSO Party

On March 11th, a few PCARS members gathered to put K8BF on the air in the Idaho QSO Party. Now, we know that there are not a lot of HAMS in Idaho as compared to some other states. But they try their best.

Last year we ended up with only 40 pts. But that was good enough to finish first in the Out of State Multi-Multi Low Power classification.

The band propagation this year was very poor with not many 7-call area stations being heard from Idaho. With all this working against us, we ended up with 56 pts which was certainly a surprise. Frankly, we thought we would not beat last year.

The log has been turned in and accepted. They thanked us for our participation and mentioned that Multi-Multi Op stations like our entry were pretty rare. So here's hoping that we end up on top again. I'd like to keep in mind that small victories are still VICTORIES!

=====

MI QSO Party

If you are not aware of this event, PCARS will be putting our K8BF station on the air to participate in the Michigan QSO Party that takes place on Saturday, April 15th, 2017.

This contest is sponsored by our friends at Mad River Radio Club (MRRC). You may know that they also sponsor the Ohio QSO Party in which we take part.

The contest goes from Noon until Midnight local time on Saturday. It takes place on 80 thru 10 meters excluding the WARC bands and is for CW and SSB only.

There are many reasons for PCARS to take part in this contest. One is to help our friends to the north in their contest. But another more personal to PCARS is that since this is a fairly friendly event that is not hurried, it's another opportunity to have those of us who have not had much experience in working a contest, to dip your toes into the pool. It's a way of getting exposed to contesting without the mad rush to make contacts.

So why not come out to the club and help PCARS put K8BF on the air again and see how well we can do in this contest. Keep in mind that there will be a number of Extra class ops around so you ops who only hold Technician class licenses can get a chance to play on the HF bands. Who knows, you might surprise yourself by having some BIG FUN!



Florida State Parks On The Air



Matthew, KK4FEM

Just a reminder about the first annual Florida State Parks on the Air contest coming April 1st! The 8 hour contest starts at 1400z, and

ends at 2200z.

The goal is to work as many of Florida's 172 state park entities as possible: 1pt/QSO, with parks as multipliers. K4LKL bonus stations will be on the air from various park entities, worth 10pts/QSO.

Mixed mode, CW, and SSB, with high power, low power, and QRP entry categories.

Rules are at <http://flspot.org/rules>, also N1MM contest definition files are available from http://n1mm.hamdocs.com/tiki-download_file.php?fileId=3071 as well as at <http://flspot.org>

Looks good. But remember, if you work a guy in the Everglades, work him fast. The gators are very hungry.



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@portcars.org



AM RALLY - April 1-3

From the ARRL

AM Rally on April 1-3 Weekend an Opportunity to Try a Vintage Mode

If you're not familiar with full-carrier amplitude modulation (AM) or have never used it on the air, you'll have a chance during the AM Rally during the April 1-2 weekend, on the bands between 160 and 10 meters (except 30, 17, and 12 meters) plus 6 meters.

Once the primary voice mode on the ham bands, AM eventually gave way to SSB, a form of AM. Yet AM has remained popular among dedicated radio amateurs who consider it their primary operating mode. Many modern transceivers include an AM button.

"Whether your rig is software defined, solid state, vacuum tube, hybrid, homebrew or broadcast surplus, you'll be a welcome part of the AM Rally," said Clark Burgard, N1BCG, who is spearheading the event with Steve Cloutier, WA1QIX, and Brian Kress, KB3WV.

The AM Rally starts on Saturday, April 1 at 0000 UTC (Friday, March 31, in US time zones) and concludes at 0000 UTC on Monday, April 3. Certificates will be awarded to high-scoring stations in each of five power classes, both for most contacts and most states/provinces worked. The AM Rally website has full details <http://www.amrally.com/>



Lithium Batteries - Be Careful

Jim, AC8NT

I sat down to write a tech tip on a new tuner design when I was asked again to review a lithium battery incident in my engineering capacity. This was my 9th review. Each incident resulted in either personal injury or equipment damage. All were important but this most recent hit close to home. I felt I needed to make some comments on the background of this last incident; its cause; and how we can minimize the risk of using these batteries.



The Incident

A technician had at his bench an instrument used to measure the RF output of some special purpose transceivers. The instrument was powered by three lithium ion AA cells. His charger had failed and he needed to get a replacement quickly. Instead of buying a replacement from the manufacturer, he chose to jump on Amazon and look for a replacement. He found one. The description said the charger would charge 3 AA lithium batteries. It was a "Prime" item that he could get in two days for half the price of the manufacture's charger. GOOD DEAL! He received the charger; connected it to the instrument; and applied power. Next he left it on his bench and went off watch.

What happened next was **very** exciting. A fire alarm sounded about 3 hours later. Before the emergency team arrived, his entire lab was in flames. The fire was extinguished by a very well trained team assisted by a sign on the lab door saying lithium and lithium ion batteries were inside. **The fire resulted in \$300,000 of damage and a setback of 4 weeks in a deployment project. NOT SO GOOD!**

Why did this incident hit home?

As I was reading this report I looked over at my bench and saw the same device charging on the bench using the manufacture's charger as it had for months. Question: Did I need to start charging my gear on the back patio away from the house?

What happened?

Our incident investigation team found that the batteries caught fire as the result of improperly controlled charging. The replacement charger was not designed to work with the batteries in the instrument causing overcharging currents to overheat the batteries. Here is the exact sequence:

1. Excessive current caused the batteries to overheat.
2. The battery cases swelled up and eventually leaked.
3. The very flammable liquid the lithium ions were suspended in caught fire.
4. The fire spread to the instrument and to other items on the bench.
5. Everything went south from there.

What's important to know?

1. There are three common types of lithium based batteries:
 - a. Lithium ion batteries using lithium suspended in an electrolyte solution, often the suspension is very flammable. If overheated, these can leak and the electrolyte can catch fire and burn very hot.
 - b. Lithium polymer batteries use lithium impregnated polymer compounds. These are usually thinner and have higher charge densities. They are commonly used in cell phones. Failure modes often result from internal shorts caused by the overheating of the polymer sheets. Again a very hot and smoky fire can result.

- c. Lithium metal batteries using sheets of lithium. These are often used in modern electric cars and can store very large amounts of energy. Shorts are the most common failure mode. When these catch fire special techniques need to be used to extinguish the fire. Class D extinguishers must be used by personnel trained in their use.
2. Overheating can occur during charging or discharging if excessive currents are allowed to develop.
3. Batteries used or stored at high temperatures can accelerate overheating.
4. Overheating protection can be internal or external to the battery. Internal protection is more expensive far less used.
5. Even though AA cells all look alike, they may have very different charging and discharging specifications.
6. Chargers are usually designed for a small group of battery specifications.

Lessons Learned

1. Always use the correct charger. If you are not educated and familiar with the design and use of lithium batteries, **DO NOT SUBSTITUTE CHARGERS**.
2. Put your equipment during charge in a safe location. My charging station is a metal sheet cake pan located away from anything flammable.
3. Because I use special purpose lithium metal batteries, I have a Class D extinguisher in my work area and both my wife and I have been to training in its use. You can put out lithium ion batteries with water if the mess is contained. **Do not** use water on a lithium metal battery, it will only make the fire worse.
4. If you see smoke or other signs of fire and can safely move the batteries, move them outside and away from buildings.
5. I don't charge overnight unless there is no alternative. My wife saw a demonstration fire and it took a lot to convince her to allow me charge overnight. We even charge our phones in a metal container.
6. If you replace batteries, make sure you replace them with the exact same batteries. Looking the same is NOT good enough.

Summary

Lithium batteries are very useful and if used as designed can provide years of high energy service. They, like a lot of new technologies, come with issues. Pay attention to these issues and they can be safely used.

Some things to remember about lithium batteries:

1. They have very high power densities. We love them because they can power our gear for a long time between charges.
2. Lithium is dangerous. It can self-ignite if exposed to air and/or water. If ignited, it is a hard fire to put out.

Editor's Note: These pictures are from a similar incident at NASA



The machine begins to smoke as its batteries begin to combust



The Defense Advanced Research Projects Agency's 'RoboSimian' exploded at Nasa's Jet Propulsion Laboratory on June 14th, the agency confirmed.

WHAT HAPPENED?

Lithium-ion batteries have a positive side (anode) and a negative side (the cathode), which are separated by a liquid electrolyte, which is highly flammable.

When the battery is charging, ions move from the positive side to the negative side.

If you don't halt that flow when it is fully charged, the battery can fail and, sometimes, explode.

International Marconi Day

International Marconi Day celebrates the huge part Guglielmo Marconi played in the invention of radio.

International Marconi Day (IMD) is a 24 hour amateur radio event that is held annually to celebrate the birth of Marconi on 25 April 1874. The event is usually held on the Saturday closest to Marconi's birthday and in 2017 it will be held on 22nd April.



Period of Operation on 22nd April 2017
0000 UTC to 2359 UTC

The purpose of the day is for amateur radio enthusiasts around the world to make contact with historic Marconi sites using communication techniques similar to those used by Marconi himself.

For the current list of confirmed stations for 2017 click below
[confirmed stations 2017](http://gx4crc.com/imd-stations/) - <http://gx4crc.com/imd-stations/>

Facebook page: <https://www.facebook.com/gb4imd/>

Web Site: <http://gx4crc.com/gb4imd/>

Guglielmo Marconi - Inventor



Elizabeth Bruton

Guglielmo Marconi, 1st Marquis of Marconi was an Italian inventor and electrical engineer known for his pioneering work on long-distance radio transmission and for his development of Marconi's law and a radio telegraph system.

Born: April 25, 1874, Palazzo Dall'Armi Marescalchi, Bologna, Italy

Died: July 20, 1937, Rome, Italy

Nationality: Italian

Awards: Nobel Prize in Physics, IEEE Medal of Honor

Education: University of Liverpool, Bedford School

The early life of Guglielmo Marconi 1874-1895

Guglielmo Marconi (1874-1937) was born in Bologna, Italy and has been called the 'father of radio'. In the early 1890s, Marconi began reading papers on the topic of 'Hertzian waves', including those by, amongst others, James Clerk Maxwell, Heinrich Hertz, Nikola Tesla and Sir Oliver Lodge. These individuals had performed important research on electromagnetism, and had indeed quantified the underlying theories; they had also introduced a number of important experiments that demonstrated the principles involved. However, it can be said that Marconi was the first individual to both consider and realize the practical and commercial application

of this technology; he took 'wireless telegraphy' out of the physics laboratory and into the industrial world. In 1894 Marconi began performing experiments with wireless telegraphy, mentored by Professor Augustus Righi, a close family friend, expert on 'Hertzian waves' and professor at the University of Bologna. Marconi used so-called 'Righi oscillators (improved multiple oscillators)' in his early wireless telegraphy experiments. Marconi soon succeeded in signaling up to a distance of 1.5 miles using basic and crude apparatus. Marconi immediately appreciated the military potential of such a signaling system and offered the technology to the Italian government who refused.

The early history of the Marconi Company 1896-1914

The history of the commercial development of wireless telegraphy has its origins in England: in March 1896, Guglielmo Marconi lodged the first wireless telegraphy patent: a 'holding patent' for a wireless telegraphy system in London. On 2 June 1896, Marconi lodged a full specification for the world's first practical wireless telegraphy system and by the end of the year had extended the range of communications to nine miles. In July of 1897, Marconi was granted his famous British patent (No. 12039) and founded the Wireless Telegraphy and Signal Company Ltd. in London, with the intention of acquiring Marconi patents on an international scale. In December 1897, Marconi established the first wireless station, at the Royal Needles Hotel on the Isle of Wight. It has been said that "from 1897 until the cataclysm of World War One, Wireless Telegraphy was woven into the social and economic fabric of the most sophisticated societies with astonishing speed."



In December 1898, the Marconi Company opened the world's first wireless factory at Chelmsford, Essex. On 27 March 1899, Marconi transmitted across the English Channel from Wimereux near Boulogne, France to South Foreland Lighthouse near Dover, England. Also in 1899, wireless telegraphy was adopted by the British Royal and Merchant Navies. On 12 December 1901, a wireless signal consisting of the Morse code for the letter 'S' was successfully transmitted across the Atlantic from Poldhu, Cornwall to Signal Hill, St John's, Newfoundland, Canada. This transmission over a distance of nearly 2,000 miles was a major achievement as even Marconi himself was unsure of the maximum range of this new technology. By the end of 1902, Marconi had established permanent and reliable wireless stations at Glace Bay in Nova Scotia, Canada and Cape Cod, US. By 1903, the Company had built a number of stations on shore and many merchant ships had been fitted with its wireless sets, which had to be rented from the company and were operated by Marconi personnel, who were allowed to communicate with operators using apparatus from rival companies during emergencies only. As a result of the growing maritime business the Marconi Company began to make a profit.

By 1904, wireless telegraphy had succeeded in being widely recognized as an essential means of modern communication and was used by both sides in the Russo-Japanese War of that year. In January 1909, wireless telegraphy saved over 4,000 lives when it was used to call for rescue when the SS Republic collided with the SS Florida off the shores of Nantucket; this provided the Marconi Company, and indeed wireless telegraphy itself, with the respectability and public acclaim it had been clamoring for. Later in the year, Marconi was co-awarded the Nobel Prize for Physics; the prize was shared with Prof. Karl Ferdinand Braun, a fellow pioneer in the field of wireless telegraphy.

In March 1910, the Marconi Company put forward a plan to link the many far-flung parts of the British Empire by a world-wide chain of 18 high power wireless stations including shore-based and ship-based stations, charging half the cost of cable telegraph rates. It was suggested that this 'Imperial Wireless Scheme' would be of

great strategic advantage, providing ships of the Royal Navy with a global means of communication unhampered by vulnerable landlines and submarine cables. However, the British government was reluctant to hand the communications network of their empire to a commercial monopoly and so negotiations began. Meanwhile, Marconi wireless telegraphy received a major publicity boost when it was used to aid the capture of a criminal. In July 1910, the infamous Dr. Crippen murdered his wife in England and then fled to Canada with his new lover. The pair appeared suspicious to the captain of their ship, who then sent a wireless message to Scotland Yard, and hence they were arrested when they arrived in Canada. This was the first recorded instance of wireless telegraphy being used to aid police work.

By March 1912, the negotiations for the Imperial Wireless Scheme had just been completed when a scandal emerged. While there are many different versions of what actually occurred, it was suggested at the time that the Marconi Company won the contract because of government corruption (i.e. politicians and civil servants were bribed with Marconi shares) and also had conspired to rig the price of these shares on the stock market. However, all of this would be sidelined by the Titanic disaster on 14 April. The details are well known and the event itself has remained in public consciousness ever since that fateful night in 1912. Thanks to wireless telegraphy, 712 people were saved. While the public was awestruck and captivated by the wonders of this new invention of wireless telegraphy, the deaths of 1,517 people shocked the maritime authorities. An investigation into the tragedy concluded that while wireless telegraphy was an invaluable means of saving lives at sea, the overall system and method of usage could be much improved. These improvements were agreed upon at an International Conference on Safety at Sea in London. On 20 January 1914, 16 nations agreed on 74 Articles for improved safety in shipping, including the usage of wireless telegraphy.

By the time the 'Marconi Scandal' had reached its conclusion in 1914, the Marconi Company suffered massive losses in terms of finances, pride and public confidence, along with the loss of the Imperial Wireless Scheme contract. However, "from all this political turmoil the Marconi Company, as a Company, emerged with colors tattered but still flying." It was a weakened but still formidable Marconi Company that would await the perils and successes of World War One in August 1914.

The Marconi Company 1918-1940s

In 1914, Marconi joined the Italian Army but later transferred to the Navy where he investigated the use of short wave transmission. In 1920, the Marconi Company was an early pioneer in Britain in the new field of public broadcast radio, thereafter Marconi and his company went on to great success in the post-war years. Marconi died in Rome on 20 July 1937.



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 1st - June 3rd - August 5th - October 7th - December 2nd
Plus: June 7th at 7 pm at the club site (end of General Upgrade class)
June 24th at 4 pm at the PCARS Field Day site - Walk ins always 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 2 to re-instate your license.



Contest Calendar

| April 2017 | | |
|---------------------------------------|----------------------------|--------------------------------|
| Contest Name | Click for more info | Date - Times |
| Florida State Parks On The Air | Click Here | 1400Z to 2200Z, April 1 |
| Georgia QSO Party | Click Here | 1800Z, Apr 8 to 2359Z, Apr 9 |
| Michigan QSO Party | Click Here | 1600Z, Apr 15 to 0400Z, Apr 16 |
| Ontario QSO Party | Click Here | 1800Z, Apr 15 to 1800Z, Apr 16 |
| 10-10 Int. Spring Contest, Digital | Click Here | 0001Z, Apr 29 to 2359Z, Apr 30 |
| Florida QSO Party | Click Here | 1600Z, Apr 29 to 2159Z, Apr 30 |

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

Tech Tip - Cleaning Wires for Soldering

Al, WA8CCU

Here is an old ham radio operator's trick for cleaning wires for soldering that are old and corroded. It is hard to find this technique printed anywhere! I am a ham, NH7ZE, and learned it from my Elmer (mentor). I am passing it on. I hope it helps people who need to clean wires.

Normally, if you strip a wire, and see it is corroded, there is not much you can do to restore its shiny new conductive properties. There is scraping and scratching which comes to mind, but you'll never get it to the solderable slickness it once was long ago. After laboring and fretting over the corroded pieces of wire for a long, long time, you see that your sweat coming out of your palms and fingers are corroding the copper AGAIN!!!! Oh, dear. NOT TO WORRY!!!! Give yourself a pat on the back, because what you will pull out of your bag of tricks now, will send all the corroded copper wires scurrying and scampering away in fear!!!! Here is how to clean any corroded wire without even touching it, in 30 seconds!! And what's more, you can even solder it!!!

This process uses two solutions, one is regular table salt and vinegar. Any kind of vinegar will work, from balsamic, to rice, to white vinegars. Its the acidity and corrosiveness of the salt and vinegar together that you want. The other solution is Sodium Bicarbonate, or baking soda, and water. This is used to neutralize the corrosive properties of the other solution, and to further clean the wires.

Step 1: Strip the wires to be cleaned.

Step 2: Get 2 containers, one for each solution. They can be paper cups, plastic, glass, bowls, whatever you can find. I have vials, because I am a professional electronics installer and I use these solutions out in the field.

Step 3: Get 1 tablespoon of raw salt, and put it in one of the containers. Fill up the rest of the container with vinegar, and stir the both together. As a general rule of thumb, put as much salt in the vinegar as will dissolve.

Step 4: Get 1 tablespoon of Sodium Bicarbonate, (baking soda) and add it to the other container. Fill up the rest with water, and stir well. Add more baking soda to make it cloudy. The amount is not important, as long as it is alkaline to cancel the acid of the vinegar solution.

Step 5: Put the stripped end of the wire in the vinegar solution, and stir the solution with the wire. Any wire you want cleaned needs to be under the solution. Movement of the wire in the liquid speeds up the process.

Step 6: After 2 minutes or so, the wire will look very shiny and new in the vinegar solution. The acid and salt in the solution is etching away the oxides, exposing the bare metal. Make sure the metal is uniformly shiny. Leave it in longer if it is not perfectly clean throughout.

Step 7: Once the wire is satisfactorily clean, remove the wire from the vinegar, and plunge it into the baking soda solution to neutralize the acid's corrosive properties. If the wire was exposed to the air, without neutralizing the acid first, it would quickly corrode again. The baking soda keeps it clean and shiny. Swish the wire around in the baking soda water for about 10 seconds, and then you are done!! Shiny new wire ready for soldering, and conducting once again!!

Al got this from his neighbor - Dave, W9TVO



Jim, KC8PD

**Radio Officer, Portage County
Communications Unit/RACES**



PCARS **Antenna Day** as well as **Field Day** will be here before you know it and although we put a lot of emphasis on the fun aspects of FD (particularly including the food at the PCARS outing) the event has its serious side, too.

Field Day has its roots in emergency communications. It was a practical way to provide all hams with an organized event that would encourage them to literally get out in the field and operate from there, just as they might have to if a disaster struck. Could you put a portable station on the air and keep it running for twenty-four hours? That was the challenge.

There would need to be some planning and organizing to avoid haphazard setups. Just what equipment would you need? Would it be suitable for portable operations in an outdoor, and possibly inclement, setting? How could you quickly erect appropriate, though temporary, antennas? Could you provide adequate power to keep your station on the air? Would you be better off with a team putting the station on the air or by operating solo?

By adding a “contest” component the ARRL also focused on both the station’s effectiveness as well as the operator’s skills. It was one thing to set up a station in the field, but would it be able to be heard by other hams on the air? Plus, did you have the ability to operate under the pressure of a contest in unfamiliar surroundings and maybe even overnight?

Remember that even starting with the Technician license hams are trained to make sure that they have the capability to help during an emergency. New hams are taught that one of the best ways to ensure that they are prepared is to get their gear out at least once a year and put a portable station on the air. Sound a bit like Field Day?

No matter where you are on the weekend of June 24-25th take the opportunity to get on the air as a Field Day participant. If you can’t make it to a club FD, why not set up in some place like your backyard or garage? Check out that gear that you haven’t used in a while. Make sure that you remember how to operate it and that things haven’t been broken or misplaced and that you backup power supply is functional. It will be worth the effort.

If you have the chance to get out to a FD like PCARS holds, **go for it!** Have some ham radio fun with a bunch of your amateur radio best friends. You can develop and improve your Emcomm skills while you are at it. Plus the food is terrific!

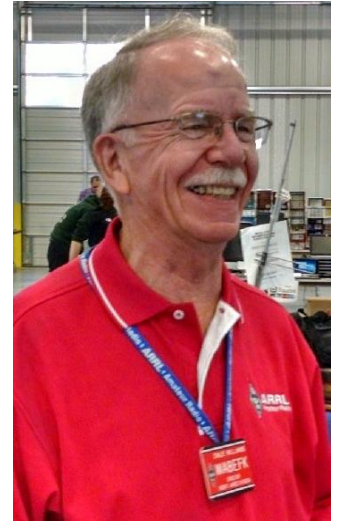
PCARS is on YouTube

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.

https://www.youtube.com/channel/UCFVsDD_gwCLtTw-FPuBcYtA



Dale, WA8EFK
ARRL Great Lakes Division Director



Good News: The FCC released ET Docket 15-99, granting US amateurs the use of the 135.7 137.8 and 472-479 kHz Bands. Check http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0329/FCC-17-33A1.pdf for all the details.

On March 31, Mich Section Manager Larry Camp WB8R and I had the honor of attending a Press Conference in Southfield, MI where Jim Santilli of the Transportation Improvement Association, State Representative Martin Howrylak, and Southfield Police Chief Eric Hawkins announced that Michigan House Bill 4466 was introduced in the legislature to curb distracted driving. MI hams are fortunate that SGL Ed Hude WA8QJE insured that the interests of Amateur Radio were brought into the writing of the bill early on and licensed ham operators are completely exempt from the restrictions of the legislation. Mr. and Mrs. James Freybler of Grand Rapids were present to support the effort. They lost their 17 year old son to the tragedy of distracted driving.

The Bill must go through the complete legislative process, be reviewed by committee before the House passes it and then move to the MI Senate for its approval before the Governor signs it into law.

Thanks for taking the time to read another edition of Dale's Tales. Fortunately, this missive is distributed by ARRL's e-mail system, is reprinted in many of the Great Lakes Division's club newsletters (Thanks editors!) and is also posted on the Division web site. ARRL members have the option of receiving it directly by selecting "edit your profile" on the ARRL web pages. While you are checking out that page, you can also select a number of other useful ARRL subscriptions and services, like getting a notice of your license expiration or our publication The ARRL Letter.

You may not be aware, but we frequently survey many of our members who may be late in renewing. As you might expect, the survey results vary over a wide range, but each response is reviewed as we are always concerned about how our membership views the League. A significant number of membership lapses are simply "Whoops I forgot" and the renewal is on the way. We are thankful for that. Most interesting to me were several who commented that QST was too technical for them, followed by a similar number of responders who stated that it was not technical enough! Then follows comments that there are too many articles on DX followed by others who said there is not enough DX coverage. Several other popular aspects of our hobby had similar results. This all proves our membership likes ham radio and each person views facets of the hobby that are more important to them than others.

Our editors and the staff at Headquarters all work diligently to provide features and articles that cover the gamut of this great hobby. Obviously, with 12 issues a year, each of our specialty areas cannot be covered in a single year or even two. Still, Steve Ford and his team make every attempt to serve us well.

Like you, there are some parts of ham radio that I really like and some that don't fascinate me at all. Still, I read QST from cover-to-cover each month, including the ads. That reminds me of one neat thing about QST,

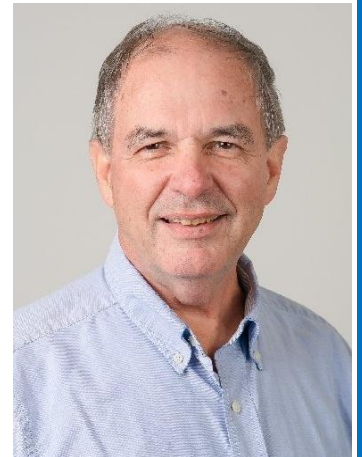
all of the articles are complete within the same series of pages. There is no need to search for the remainder of an article that has been relegated to the back pages of the magazine.

Surprisingly to me, I do manage to find something interesting in each issue and often in an article outside my normal areas of interest. Without doubt, this helps me gain a better understanding of that is happening in Amateur Radio as a whole, and I can have a better grasp on those things that affect us all. Oh, and the ads are important too, because that is where I seem to find all those neat toys I need to add to the ham shack!

ARRL Great Lakes Division Convention in conjunction with Great Lakes HamCon will be held at Michigan International Speedway (MIS) on October 7 & 8, 2017. Check www.GLHamCon.org for information on tickets, flea market spaces and booths. As it becomes available, up-to-the-minute information will be posted on the Great Lakes Division web page.

From the Great Lakes Div. Vice Director

Tom, W8WTD
ARRL Great Lakes Division Vice Director



"The future of ham radio is...." We're all concerned about the future. And many predict that the future of ham radio is here or there, in this program or that. Well, it's probably in a lot of things.

It's in technology. That keeps us relevant. There are software defined radios, new advances in communications techniques. And lots and lots of experiments. Did you read about the two brothers, both in their 20's, out in California, experimenting with long distance communications on the 33 cm band? And new techniques in digital. I'll never be one to invent anything, but I'm grateful for the advances in both voice and data digital technology, and try to make use of them as new things come out.

It's in recruiting. One thing I've learned from being on the Entry Level License committee is that there are paths into ham radio for everyone, from the youngest to the "more-than-middle aged" people. And clubs are working to help those people find their way. Lots of good programs are underway for mentoring and making sure that new hams understand and use these new technologies, as well as just the basics for getting on the air and communicating.

And speaking of youth, I have been amazed to see what happens to young people when they get turned on to ham radio. Not only do they learn to be hams, but their ambitions to do things in technology fields become really great. There's an impressive group doing a net once a week on Echolink, through the W8PIF repeater in Michigan. And there are many other youth nets going on around the country.

We need to be concerned about the future of ham radio. But not too concerned. Do your part. Help a new ham. Make friends with a school group or a scout group. That will keep ham radio alive.

Charlie the Tuner's HF High-Lites

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



February the bands were very cooperative. I wish I could say the same for the bands lately. Hardly a thing has been heard on 15 and 10 meters and lately 20 meters has been fairly quiet. We have had some solar events that have certainly affected propagation. Here's hoping that propagation in April will be kinder to us HAMS.

I continue to thank the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn Packet cluster Network, AB5K & the AR TelNet Clusters Network, K1XN & GoList, NJ1Q & W1AW, NG3K & ADXO, W3UR & The Daily DX, N4AA & QRZ DX, W4DN, K8GI, K8YSE, W8GEX & 60m DX News, W9ILY, N0FCD, CO3JK, DL1SBF, DL7UXG & The DX News Letter, DxCoffee.com, DXNews.com, DX-World.Net, ES1CW, F5NQL, F6AJA & Les Nouvelles DX, I1JQJ/IK1ADH & 425 DX News, I2MQP & DX Italia News, IZ5HQB, OZ6OM & 50 MHz DX News, RSGB IOTA Web Site, Sixitalia Weekly, VA3RJ & ICPO, VHF-DX-Portal(MMMonVHF) and VU2DSI 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"**.

A2, BOTSWANA (Update). A UK Team will be active as A25UK from Botswana between April 25th and May 6th. Operators mentioned are Nobby/G0VJG, Dave/ G4BUO, Nick/G4FAL, Graham/G4FNL, Tony/G4LDL, YL Glenys/G8KWD, Guy/G0UKN, Martin/M0MDR, Toby/M0TBS and Giles/M0TGV. Activity will be on 160-6 meters using CW, SSB, RTTY and PSK. Suggested frequencies are available as a PDF file per the following languages (EN/IT/ES/FR/DE/JA/RU) at: <http://www.a25uk.com/2017-2#mhz> QSL via M0OXO or via ClubLog's OQRS. Also, visit their new Web page at: <http://www.a25uk.com>

AH2/KH2, GUAM. Operators Santos/EA4AK (AH2P) and Tony/EA5BY (KH2BY) will be active from Guam between March 30th and April 10th. Activity will be on 160-10 meters, but a focus on the lower bands (160/80/60/40/30m) using RTTY and CW, with some SSB. Look for AH2P to operate mostly on RTTY and KH2BY mainly on CW. Reports indicate that they will be on higher bands, but mostly for western Europe. QSL AH2P is preferred via LoTW, eQSL or ClubLog's OQRS. Later all AH2P QSLs will be sent by the Bureau. Please, no direct or Bureau QSLing to AH2P to Guam's QTH. Send all your QSLs, direct or via the Bureau, to EA4AK. QSL KH2BY only via EA5BY (see QRZ.com address), by the Bureau, ClubLog's OQRS, GDURE and LoTW is OK. Do not send direct QSL to the KH2BY QTH listed on QRZ.com, please.

AS-071, Arakamchechen Island. Members of Russian Robinson Club (RRC) will be active as R71RRC from the Arakamchechen Island (RRA RR-12-02, RDA C?-06, RFF-165 [NEW ONE], RLHA [NEW ONE], WLOTA [NEW ONE]), near the Chukotka Peninsula, in the Bering Sea Coast North Group, Asiatic Russia, between April 7-17th. The dates are tentative and dependent on local logistics and weather conditions. Operators mentioned are Aleksandr, RA3AV, Yuri, UA0KBG and Victor, UA3AKO. The team plans to be on the island at least 5-7 days. They plan to have two operating positions on the air on 40/30/20/17 meters using CW and SSB. Equipment to be used: two Elecraft K3's, FT-857 (for backup), two 500 watts power amplifiers. The antennas are: 4 SQ for 20m, GP or 2 elements switchable for 30m, GP for 17m and GP for 40m. The electricity to be taken from two power generators (main and backup). QSL via UA3AKO, ClubLog's OQRS, direct and QSL Bureau. DXpedition's Web site is now online at: <http://r71rrc.ru/en/>

E5, SOUTH COOK ISLANDS. Operators Bruce/AD7MM (E51BAS) and Doug/W6HB (E51DLD) will be active from Rarotonga Island (OC-013) between April 30th and May 12th. 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).

HB0, LIECHTENSTEIN. A group of Dutch radio amateurs (from the PI4RAZ Radio Club) will be active as HB0/homecall from Liechtenstein between April 1-8th. Operators are Mans/PA2HGJ, Robert/PA2RDK, Frank/PA3CNO, Paul/PA3DFR, Henry/PA3HK, Gert/PE0MGB and Piet/PE1FLO. Operations will be on all bands, 160-10 meters, using mainly CW and some SSB/Digital modes with an emphasis on the new 60m band. QSL via PE1FLO.

KH2, GUAM. Antonio, EA5BY, will be active as KH2BY from Island of Guam (OC-026) between March 29th and April 10th. Activity will be on 80-6 meters (60m included). Antonio states, "I will make an effort to operate on the bands/modes where Guam/KH2 is most needed. If in need, E-mail to ea5by@yahoo.com for a sked." QSL only via EA5BY (see QRZ.com), direct, by the Bureau, ClubLog's OQRS or LoTW.

OC-098, North Cooks Island, Cezar, VE3LYC, has announced that he will be active as E51LYC from Pukapuka Atoll (Danger Islands), North Cooks Island, between May 9-23rd. This IOTA group has not been activated for more than 22 years. More details will be forthcoming and a Web site is currently under construction.

T32, EASTERN KIRIBATI ISLANDS. Ken, KH6QJ, will once again be active as T32AZ from Kiritimati Island (OC-024) between April 11-18th. Activity will be on 80/40/20/15/10 meters using SSB. He will also be in the WAPC Contest (Worked All Provinces China) [See: <<http://www.mulandxc.org/438>>] QSL via his home call sign, direct or by the Bureau.

T8 PALAU (Update). Ops Toshio/JM1LRA (T88TA), Kazuhiro, JA7WFT (T88FT), Shinichi, JI6IHG (T88IH) and Ichiro, JH7IPR (T88UW) will be active from the VIP Guest Hotel on Koror Island (OC-009), April 14-21. Activity on 160-6 m using CW, SSB, JT65 and JT9. QSL T88IH via JI6IHG. QSL T88FT via JA7WFT. QSL T88TA via JM1LRA. QSL T88UW via JH7IPR, direct, by the Bureau, eQSL, LoTW or ClubLog. For more details about the VIP Guest Hotel (Free Radio Room), see: <http://www.palau-radio.com/index.php?page=rr2014>

VQ917, CHAGOS ISLANDS. Jim, ND9M (VQ96JC), from Diego Garcia Island (AF-006) informs OPDX on March 14th, "Well, the local licensing office came through for me again. The VQ917JC license I asked for just came through here this afternoon." So start looking for Jim to be on the air signing as VQ917JC. Jim told OPDX he will not make an effort on 60m at this time. His operating hours are still limited to 1200-1600z max which doesn't do much good for the NA/SA ops. He states that he will probably focus on 30, 20, and 17 meters just to get VQ9 into some logs. Jim also mentioned he did bring his satellite equipment. QSL via his home call sign. Look for more details to be forthcoming.

XW, LAOS. Bruce, 3W3B (HS0ZCY/XU7ADF/XW1B/AA4XR), who lives in Da Nang, will once again be active as XW4XR from Vientiane between April 12-26th, 2017. Activity will be on 80-10 meters using CW, RTTY and JT65. QSL via E21EIC and LoTW.

SILENT KEY. Members of the Northern Ohio DX Association were saddened this past week to learn their long time Vice President **Dwaine Modock, K8ME** (ex-WA8MEM), became a Silent Key unexpectedly late Saturday evening on March 11th, at the age of 68.

Dwaine was a WAS and VUCC card checker, a member of FIST #1466, a Life Member of the ARRL, Life Member of the QCWA #22130, a Life Member of INDEXA and a member of OMISS #6316. He had DXCC Honor Roll Mixed 351, DXCC Honor Roll Phone 347, DXCC Honor Roll CW 344 and DXCC on RTTY 289. Dwaine had many friends and belonged to many associations and clubs. He will dearly be missed by all. We extend our deepest condolences to his family and friends of K8ME.

There you have it for April 2017. Again, here's hoping that the bands cooperate this month. Get on the air and work some DX and let us know what you hear. Until next month, vry 73.

Hamfest Calendar

04/08 - CFARC 63rd Annual Hamfest - Location: Emidio and Sons Party Center, 48 East Bath Road, Cuyahoga Falls, OH 44221 - Website: <http://www.cfarc.org/hamfest.php> - Sponsor: Cuyahoga Falls Amateur Radio Club - Public Contact: Michael Luoma K8MAL, PO Box 614 Cuyahoga Falls, OH 44222, Phone: 234-206-0270 - Email: hamfest2017@cfarc.org

05/19-20-21 - 2017 Hamvention® - Location: Greene County Fair & Exposition Center, 120 Fairground Road, Xenia, OH 45385 - Website: <http://www.hamvention.org> - Sponsor: Dayton Amateur Radio Association, Public Contact Phone: 937-276-6930 - Email: info@hamvention.org

07/09 - 20/9 Radio Club Hamfest, Computer & Electronics Show - Location: Austintown Senior Center, 112 Westchester Drive, Austintown, OH - Website: <http://20over9.org> - Sponsor: 20/9 Radio Club, Inc. - Public Contact: Dotti O'Neil-Meleski KC8SYF, 17520 Denver Drive Lake Milton, OH 44429 - Phone: 330-651-8420 - Email: hamfest@20over9.org

08/05 - 2017 Columbus, Ohio Hamfest and Ohio ARRL Section Conference - Location: Aladdin Shrine Center, 1801 Gateway Circle, Grove City, OH 43123 - Website: <http://columbushamfest.com> - Sponsor: Voice of Aladdin Amateur Radio Club, W8FEZ - Public Contact: John Lehman K8PJ, 7415 Hagerty Road Ashville, OH 43103 - Phone: 614-571-5179 - Email: voiceofaladdin@gmail.com



"Mike echo oscar whisky! I repeat!
Mike echo oscar whisky, how do you
copy? Over"

Craftsman Maxi-Fuse



Happy Birthday PCARS Members

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

| | | | |
|---------------|----------------------|---------------|-----------------------|
| KD8RJV | James Corbett | KW8KW | William O'Neil |
| KD8GHB | Joe Racco | AB8SX | Mark Eldridge |
| N8QE | Bob Hajdak | K1ZZ | David Sumner |
| WB2DFC | Dave Rarrick | KE8EGG | Alice Harris |
| KC8FQV | Mark Studer | W8JJW | John Wagner |

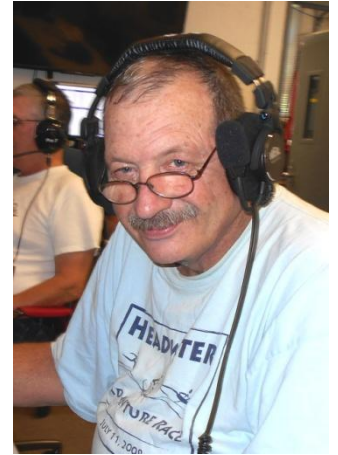
The “V” Word

Terry, KB8AMZ

Since 1986 when I received my Novice Ticket I was told (by Elmer's) that being a good ham it was a requirement that I volunteer for things. Namely, Special Events. It's that time of the year where people in our club are reaching out for volunteers to participate in events that we provide communications for the event coordinators.

Now, I researched ARRL web site and I can't find any where the I or any of you are required to perform this volunteer function (someone will correct if I am wrong) but not only do we help organizations that are not capable of our service we get invaluable experience at communicating in an organized manner using a controlled radio network of communicators.

I have been receiving email requests for upcoming events taking place this year for the past 2 months. Most of the older members of this club have at one time been asked to volunteer to work an event. A bunch of us (more than 10) have been doing this for many years. You don't have to work every event, some of us do though, but you might be able to work one or two. This is more training to better yourself as professional communicators and help your fellow citizens. So **VOLUNTEER**. And, you just may have some fun while doing it.

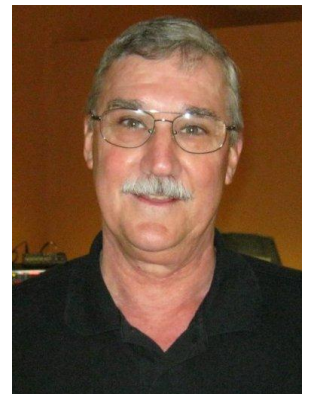


Digital Special Interest Group

Rick, K8CAV

It's been a while since we've done a “Get Up and Running Digitally” topic so this month's Digital Special Interest Group meeting will cover that topic. There will be a short presentation on digital operations and then it will be hands on from there on out.

This month's meeting is especially geared to those who would like to become digitally capable. Bring your laptop, interface, even your radio and we'll help you get everything up and running. Even if you don't have everything you need, this meeting will help you make some choices on what to get. The meeting is on Tuesday April 4th at 7:00 PM at the club site in Ravenna. Hope to see you there!



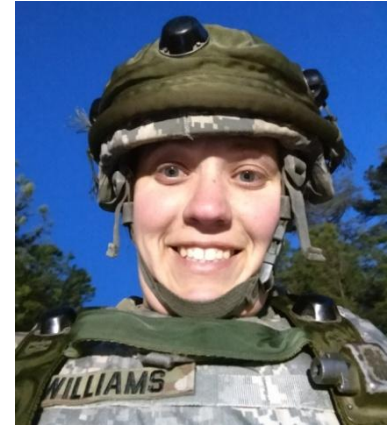
Greetings From the Field....

Jennifer, KB3GXB



Yes - it was a cold ride to camp

equipment and generators, (thanks goes to KD8VT, James for showing me the ropes). Our cooks were trying to set up the MKT (mobile kitchen tent). One cook in particular, SPC. Jamie Fox, found out that I had knowledge of generators and how to trouble shoot issues. Well, she panicked and came and grabbed me from the other end of the camp when things were not working as she thought they should. She says to me, "Williams, you gotta help me! I have the generator running, but I've got no power in the kitchen!!!"



KB3GXB here.. well, as my Annual Training for the Army comes to a close, I sit here on my cot and think back to when I left Ohio on 15th of March.. My MOS is 92F, Refueler.. however while that is my primary job, it wasn't my only job while I was here at WAREX.

During the first couple days, we set up tents. And during the setup phase of things, I had to draw on my years of dealing with comms



All set for the cold weather ride in a soft-side Hummer



Genset 1.5 kW

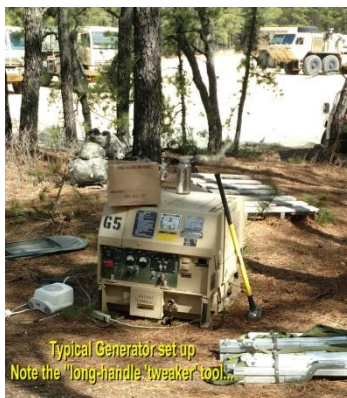
So I go over to where she has the generator. Yes, the generator is running just fine. I notice she has an extension cord plugged in and running toward the kitchen. I trace it out and check all connections and possible pinch points along the route. Everything seems to be connected properly. Then I go back to the gen set and discover that there is a contactor switch on the back side of it.

I told SPC. Fox to go to the door of the tent and let me know if she has power. I flipped the contactor switch and saved her day.

Then, when I got over to the tent where we females were staying, I discover the maintenance crew trying to deal with a heat and lighting issue. I said "No worries, I got the lighting and power problem. Maintenance, you guys can focus on the heat problem. I got this." With 16 people all wanting power to charge their phones and gadgets, folks were getting a bit freaked out. Now, of course I couldn't claim to be part of our PCARS Field day Power team and sit idly by (HA). I brought 1 Heavy Duty 100' Extension cord that has a 4 outlet head at the end of it, 3 power strips - each having 6 outlets and a power hub that has 4 USB ports and 2 outlets. So I'm ready to tackle this.

As a couple females were starting to complain and whine about how they were ever gonna charge their phones, I just start stringing the cords and connecting wires.





As the maintenance crew finished with the heater, the one Sgt turned around and was trying to figure out why all the fussing behind him had subsided. He turned around and saw my power cord and asked "Who handled the power set up?" and I answered.. "I did, Sgt." Again - gotta thank Dad for all the years of teaching me the ins and outs of being on the power team. Also gotta love the Army for the adventure... see ya at the April PCARS Meeting!



Yes - I wear makeup....

Smoke Re-Concentrator Refurbishes Blown Components



As one engineer said: "It's amazing how much black smoke they can fit into even a small FPGA these days, and once it's out there is no getting it back in again - even if you catch it all in a jam jar."

You know what it's like when you connect a power supply to your system with the incorrect polarity – or maybe you connect the power supply the right way round, but you've inadvertently soldered the pins of some component to the wrong power plane(s) – and "poof" – a small cloud of pungent-smelling smoke appears.

Well, I can certainly understand where he's coming from, but that's because he's not acquainted with the Electrical Smoke Re-concentrator from those clever folks at AEROstich.com.

Many people think that this is "game over" and the component in question can no longer function. What you may not realize is that it was only the concentrated smoke that was loaded into the component under extreme pressure during the manufacturing process that made it work in the first place.

In the not-so-distant past, almost any old smoke would do. More recently, we've seen the introduction of solid crystalline smoke because of its small feature size... that popping sound you hear when you apply the incorrect potential to the component is the rapid phase change from solid crystal to gas (the gaseous form is the one with which we are most familiar).

Furthermore, the rumor on the street is that, for next-generation silicon chips implemented at the 20nm process node and below, they are going to have to dispense with even the solid crystalline smoke – my contacts tell me that they're just going to fill the space with individual Bucky-balls and hope for the best.

When you read the product description on the AEROstich.com website, I think you will agree that this little scamper looks like a "must have" for every workshop, and it's a bargain at the price!

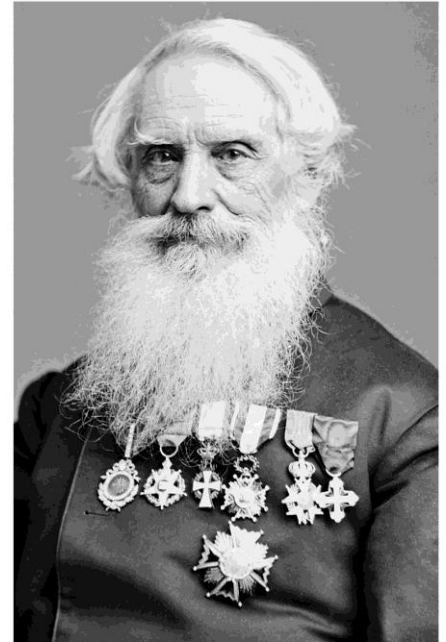


Samuel F. B. Morse

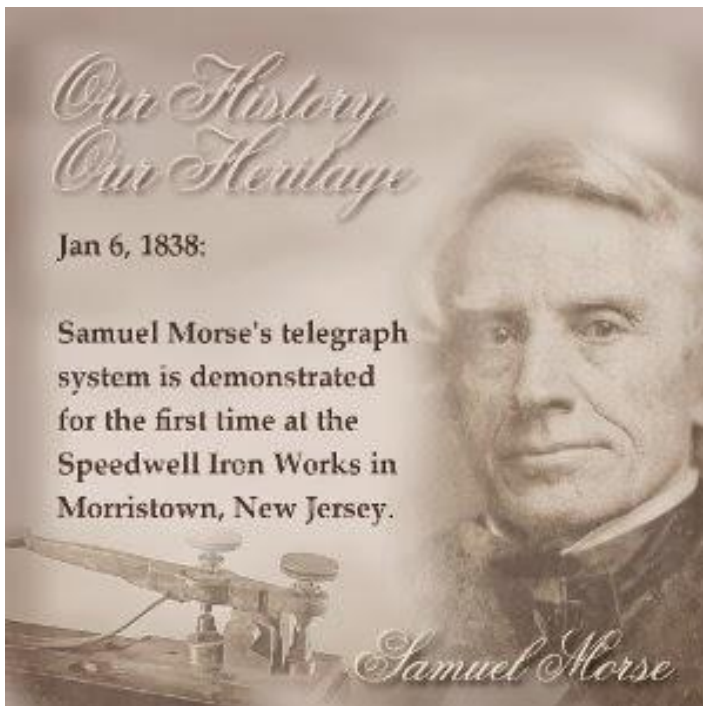
On January 6, 1838, Samuel Morse's telegraph system is demonstrated for the first time at the Speedwell Iron Works in Morristown, New Jersey. The telegraph, a device which used electric impulses to transmit encoded messages over a wire, would eventually revolutionize long-distance communication, reaching the height of its popularity in the 1920s and 1930s.

Samuel Finley Breese Morse was **born April 27, 1791**, in Charlestown, Massachusetts. He attended Yale University, where he was interested in art, as well as electricity, still in its infancy at the time. After college, Morse became a painter. In 1832, while sailing home from Europe, he heard about the newly discovered electromagnet and came up with an idea for an electric telegraph. He had no idea that other inventors were already at work on the concept.

Morse spent the next several years developing a prototype and took on two partners, Leonard Gale and Alfred Vail, to help him. In 1838, he



Samuel Morse - 1866
Photo by Mathew Brady



demonstrated his invention using Morse code, in which dots and dashes represented letters and numbers. In 1843, Morse finally convinced a skeptical Congress to fund the construction of the first telegraph line in the United States, from Washington, D.C., to Baltimore. In May 1844, Morse sent the first official telegram over the line, with the message: "What hath God wrought!"

Over the next few years, private companies, using Morse's patent, set up telegraph lines around the Northeast. In 1851, the New York and Mississippi Valley Printing Telegraph Company was founded; it would later change its name to Western Union. In 1861, Western Union finished the first transcontinental line across the United States. Five years later, the first successful permanent line across the Atlantic Ocean was constructed and by the end of the century telegraph systems were in place in Africa, Asia and Australia.

Because telegraph companies typically charged by the word, telegrams became known for their succinct prose--whether they contained happy or sad news. The word "stop," which was free, was used in place of a period, for which there was a charge. In 1933, Western Union introduced singing telegrams. During World War II, Americans came to dread the sight of Western Union couriers because the military used telegrams to inform families about soldiers' deaths.

Over the course of the 20th century, telegraph messages were largely replaced by cheap long-distance phone service, faxes and email. Western Union delivered its final telegram in January 2006.

Samuel Morse died wealthy and famous in New York City on April 2, 1872, at age 80.

New Kenwood TS-99900 Contest Transceiver

Mark, W8BBQ

**HOT Audio,
COOL Snacks**

Kenwood's newest flagship offering takes contesting stations to a new level. The newly incorporated Kenwood CFT (Contest Feeding Trough) unit flows seamlessly into the radio's main architecture. This suite of contesting necessities provide the user with increased "seat time" over a typical 48 hour contest period.



SPECS

2.3 cu. Ft. refrigerator 10 cup coffee maker 750 microwave 200 watts SSB* *output may vary depending on appliances in use during transmission.

ON THE AIR

The transceiver performs well under brutal contest conditions. The refrigerator has ample room for both drinks and energy food. The door seals are well formed, holding the cool temps steady during even the most tenacious runs. When not contesting the Kenwood-CFT provides plenty of room for enough beers to get you through a Friday night on 75/80 meters (The Jerry Springer band). For you 6 meter "tragic band" lovers, the door adequately holds the extra large size bottle of NoDoz.

The SDR (Software Designed Refreshments) coffee maker performs well, but does periodically produce lack luster temperatures for your fresh brew. The newest firmware update allows the coffee DPM (Drips Per Minute) to be fully adjustable, and the touch screen doubles as a code reader. The Kenwood-MWWM (Micro Wave With Macros) permits you to utilize single button commands to send a string of cooking information with just the touch of a button. "Split Mode" offers a simple solution to re-heating both sides of your food item without having to rotate or flip it over. Unfortunately, Kenwood was unable to crack the code when it came to improvement of the digital readout clock. Available only in 12 hour mode (what were they thinking?) it is a highly complicated apparatus that harkens back to the days of Beta video machines. My readout has now been covered with electrical tape after weeks of operation.



BOTTOM LINE

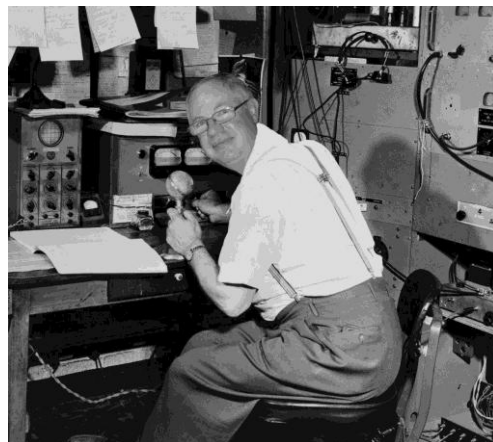
While offering Kenwood's renowned high quality audio, the tepid coffee and extremely complicated microwave clock proved too high a learning curve for this ham. I suppose after spending more time in front of this rig I will get the clock to stop flashing 12:00.

PCARS Thursday Net Control

Tom, WB8LCD
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 out the new receiver located in Sugar Bush Knolls - using a PL tone of 118.8.** The Rootstown receiver still uses the 110.9 PL tone.

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



| April | |
|-------|--------|
| 6 | KB8UHN |
| 13 | KC8PD |
| 20 | WB2DFC |
| 27 | NR8W |

| May | |
|-----|--------|
| 4 | K8IV |
| 11 | WB8LCD |
| 18 | N8RLG |
| 25 | K8CAV |

| June | |
|------|--------|
| 1 | N8QE |
| 8 | AC8NT |
| 15 | KB8UHN |
| 22 | KC8PD |
| 29 | KB8UUZ |



The PCARS net is **BIG Fun** - tell your friends to check in via RF or EchoLink! If you have not been a Net Control Operator for PCARS and would like to give it a try, please contact me at: WB8LCD@portcars.org Everyone who is a club member is welcome to have a turn!

For those of you making the trek to the Dayton Hamvention - Check-In via Echo Link !

PCARS Wants to hear from YOU



PCARS
Join Now
Discover the FUN



PCARS
www.portcars.org



Shut Up and Say Something: Digital Modes

Dan Maloney



In a recent article, I lamented my distaste for carrying on the classic amateur radio conversation — calling CQ, having someone from far away or around the block call back, exchange call signs and signal reports and perhaps a few pleasantries. I think the idle chit-chat is a big turn-off to a lot of folks who would otherwise be interested in the World's Greatest Hobby™, but thankfully there are plenty of ways for the mic-shy to get on the air. So as a public service I'd like

to go over some of the many digital modes amateur radio offers as a way to avoid talking while still communicating.

Of Modes and Modulations

Hams speak in terms of modes and modulations when describing their radio transmissions. The difference between the two terms is mostly not important to our discussion, though, and in practice a lot of hams use the terms interchangeably. But for completeness, modulation is a way of impressing information on a radio wave, and a mode is a way of using a modulation to communicate. Modulation schemes include amplitude modulation (AM), frequency modulation (FM), and single sideband modulation (SSB). Modes include continuous wave (CW), analog voice, digital voice, images, and data.

The digital modes I want to discuss are the ones where you can easily sit down at a keyboard and have your message appear magically on another ham's terminal across the world. I'm not going to cover CW as a data mode here, even though it clearly was the first and is arguably the most successful digital data mode ever. International Morse Code has been going strong for 140 years, and with the many advantages of CW modulation it's likely to remain a powerful tool for as long as people care to learn their dits and dahs. Yes, there are applications that will translate keystrokes to Morse and back, but that just feels like cheating.

modulation:
impressing information
on a radio wave

mode:
using a modulation to
communicate

Equipment

Those of us with long enough memories will recall the early days of the interwebz, when dial-up connections were the only way to get online. The sound of a modem dialing Compuserve or AOL and negotiating a connection was the soundtrack of the pre-Internet days. The modem was modulating the data signals from your computer into audio tones that would fit down the analog phone line, and demodulating the returning audio signals. All ham radio data modes basically boil down to this same process — with the addition of a little outboard equipment, data from your computer is turned into audio tones that are fed to your transmitter, and audio from your receiver is decoded back into data.

In a lot of cases, the extra equipment required to tap into most data modes these days is minimal. There was a time when special converters were needed, but with a powerful DSP built into every computer sound card, pretty much any PC will do. Many ham transceivers now have sound cards built in, too, so sometimes all you need is a USB cable and the right software. FL-Digi is a popular package that supports most of the popular digital modes, provides a waterfall display that lets you easily visualize a huge swath of bands, and even controls your rig, tuning it to the selected frequency and keying the transmitter when needed.

Data Modes

There is a bewildering number of data modes out there, and cruising through the HF bands at night can sound a little spooky. The warbling tones that seem to drift across the bands as the ionosphere does its nightly dance are a little eerie. The audio signature of each data mode is pretty distinctive, and experienced practitioners can pick out the mode just by the sound, or maybe with a little help from its appearance on the waterfall display. Noobs can get help with identifying the modes from any number of websites, or can rely on their software package to autodetect the mode.

Which mode to choose is largely a function of what is going to work best under the given conditions. Unlike modems connected by a telephone line, the physical medium in ham data modes is subject to a lot more potential for interference, both natural and man-made. Signals can be interrupted by crashes of static from electrical storms, two signals can arrive by different paths and suffer phasing problems, or the signal strength can be so low as to be barely above the noise floor. Any useful data mode has to take these vagaries into account, and some do a better job of dealing with one set of conditions than another.

Here's a run-down of the major data modes you'll run across and the relative benefits of each:

RTTY- Radioteletype, or "ritty" as hams call it, is the original digital data mode. It dates back almost as far as commercial radio does, with the first RTTY service established between San Francisco and Honolulu in 1932. Then as now, RTTY uses the 5-bit Baudot code to encode each character. The simplest modulation scheme for RTTY is audio frequency-shift keying (ASFK) with a 170Hz difference between the mark and the space bits. This results in a whopping 45-baud connection (you'll notice that most ham digital modes tend to be on the low side with regard to throughput thanks to the limited bandwidths available at the relatively low frequencies needed to take advantage of the ionospheric skip needed for long-distance contacts.) As slow as it sounds, that's still about 60 words per minute, which is plenty fast enough to keep up with most typists. RTTY has been joined by a raft of other data modes, but there are still RTTY aficionados out there plying the airwaves. The lower end of the 20-meter band is a good place to find RTTY operators.

"As slow as it sounds, that's still about 60 words per minute, which is plenty fast enough to keep up with most typists."

PSK31 - One of RTTY's advantages is that it's technically easy to implement. But it doesn't perform particularly well at very weak signal levels. To fix that, [Peter Martinez (G3PLX)] decided to come up with a better RTTY. In 1998, PSK31 was introduced, and it has become quite popular since then.

[Martinez] took a two-pronged approach: first, he developed a new encoding method for alphanumeric characters, called Varicode. Instead of a fixed word length like the Baudot used in RTTY, Varicode's word-length was more Morse-like, with frequently used letters represented by shorter codes than rarer letters. Then, to modulate the code, [Martinez] leveraged the DSP in a computer's sound card to shift the phase of an audio signal by 180° to represent a zero in the Varicode, while unshifted audio represented a logical one.

This phase-shift keying (PSK) results in a bit rate of 31 – slower than RTTY, but designed to keep up with the average typist. PSK31 is more efficient than RTTY in terms of bandwidth — only 31Hz wide — and coupled with the fact that receiver and transmitter have to be synchronized and the DSP algorithm lends itself to predicting when to expect the phase transitions that signal data being transmitted, PSK31 excels at pulling data from weak signals.

Packet Modes - The user experience for RTTY and PSK31 is pretty simple — the sending party types a terse, abbreviation-rich message on a keyboard, and the receiving party reads the message on some sort of alphanumeric display. But lest you think that Amateur data modes are just for sending straight text messages like those that were sent by Model 33 teletype terminals back in the day, there are plenty of packet modes for sending more complex messages, including email.

PACTOR is a set of modes that are based on frequency-shift keying (FSK) with a 200Hz shift. Unlike RTTY and PSK31, PACTOR encodes data as 96- or 192-bit packets, which allows the use of the Automatic Repeat Request (ARQ) error control protocol to request packets that fail a CRC to be resent. PACTOR clocks in at around 200 baud.

Unfortunately, PACTOR requires an expensive piece of equipment called a terminal node controller (TNC) between the radio and the computer. To remedy this, the WINMOR protocol was developed. Similar to PACTOR in that it's a packet mode with error correction, WINMOR does away with the TNC by using an inexpensive USB audio link, or by leveraging the sound card built into many modern transceivers.

Both WINMOR and PACTOR are gateway protocols to the Winlink 2000 network that provides email service via HF radio. Winlink is an extremely diverse hybrid network of HF and VHF radio links into internet-coupled message servers. Emails can be composed with the full-featured RMS Express client that looks and feels pretty much like any other email client. Emails can include attachments and can be sent peer-to-peer or through the network to any other Winlink user.

As useful as the Winlink network is — it has been a huge boon to emergency communications in natural and man-made disasters where local internet service is disrupted — using it is about as exciting as sending an email, because that's exactly what you're doing. For my money, digging a one-to-one contact out of the noise with a couple of watts on PSK31 sounds like a lot more fun. I'm glad the Winlink network is there, and it pays to practice with it from time to time, but there are a lot more challenging data modes to explore, at least in my opinion.

I've only scratched the surface of the digital modes available to the mic-shy ham. Here's hoping this gets a few more new people into the hobby, or maybe even gets those licensed but largely inactive hams on the air. After all, we all need more people to not talk to.



<http://hackaday.com/2017/03/24/shut-up-and-say-something-amateur-radio-digital-modes/>

Dan Maloney: Staff Writer - Hackaday

Dan has been a tinkerer since the days when Radio Shack still issued an annual paper catalog. Scientist by training but developer by necessity, Dan left his Ph.D. program with a Master's in biology when he realized that automating his experiments and data capture was far more interesting than the ribosomal whooziewhatsis he was supposed to be studying. His day job now is to keep the R&D pipeline filled at a Major Pharmaceutical Company by automating experiments and data capture. What goes around comes around.

The remainder of Dan's time is spent homesteading and trying to pry enough productivity out of 10 acres of New England glacial till and forest to sustain his family. While not remotely close to it yet, his goal is to free himself from the systems of support and build regenerative systems that require as few inputs as possible, which tweaks his hacker instincts as he searches for ways to automate his homestead as much as possible. He also enjoys cosplaying with his children, although we doubt he'll ever admit to it.

Improving Reception - 160-40 meters & 5BDXCC

Neil, N8IL

The Background

Over the last few years, I've focused on improving my chances for DXCC on 40,80, and especially 160M, as well as wrapping up the 5BDXCC (5-Band DXCC Award). I wondered around on my own for a time, adding active verticals, beverages, magnetic loops, and flags. Beverage antennas can be a lot of work, and require a lot of land. I had good results with one that was switchable east/west. I also invested in the DX Engineering NCC-1 receiving phase controller. The controller helped provide some success, making marginal antennas usable. A pair of active verticals worked fairly well, as did a pair of magnetic loops. Then, I watched some Contest University presentations on receiving antennas, and took them to heart. The super-stations were replacing their beverage antennas, or at least augmenting them with arrays of high-impedance short verticals, twelve to twenty four feet in length. I had resolved myself to setting up such an array during the Christmas holiday of 2016.

The Execution

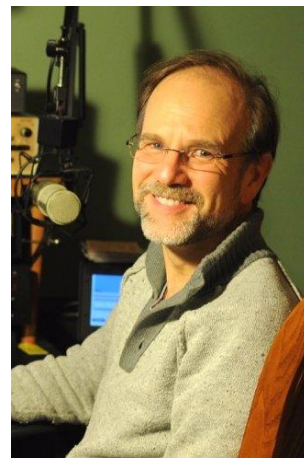
There are a few solutions out there, and I elected to use the nine-circle array developed by W1FC, and further refined by the Yankee Contest Club. It is available in kit form at DX Engineering, and being 120' in diameter, fit within my 150' wide lot. The array is based on a circle of eight verticals with an additional one in the center. The heading to the DX station is set on the controller, and three antennas are phased in that desired direction. All that is included in the kit are the antenna pre-amplifiers, phasing controller, and control switch. It's definitely not for the beginner. There is no surface-mount soldering, but some of the soldering is pretty tight. You have to wind small receiving transformers. Also, you're on your own building the antenna elements, cutting the phasing lines to the correct length, and making all the cabling that's required. You can find the details of the elements I used on my QRZ page. I used a RigExpert AA-54 antenna analyzer to cut the phasing lines to the correct lengths. I also obtained all the necessary tooling to cut and put connectors on all the feedlines. (46 total

connectors, in my case.) I also decided to run bias-tees to get power to the array over the receiver feedline, reducing the cost of the control wire. Due to the length of the feedline, I also selected a Hi-Z pre-amplifier to send the signal back to the shack. My project for next fall will be wireless control of the array.

The Results

I can't say enough good things about my results, and I wish I had made this decision sooner. In spite of the fact that the array sits at the base of a 50' hill, the results have been great, and in some cases, spectacular! On 160 meters, stations that I simply cannot

hear on the transmit antennas, and only slightly on the original verticals or magnetic loops, jump out from the noise! In a seventy day period, I received the necessary confirmations I needed on 80 meters for 5BDXCC, and added thirty-three countries on 160 including Pitcairn Island! The array really came into it's own during the ARRL CW DX contest. The ability to rapidly turn the array electronically was a new experience. No waiting for



rotors! It gave me a leg-up, especially working Oceana, since I could hear signals that few others couldn't. Those were small pileups! For those who are interested, I have approximately 600' of feedline from the transceiver to the array controller. The controller, element pre-amplifiers, along with the Hi-Z pre-amp, pull 280-300ma with a voltage drop of 5.9v. I'm using a linear adjustable power supply to provide power.

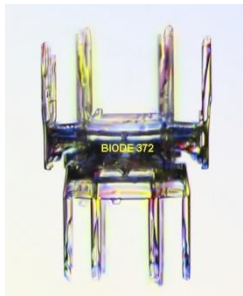
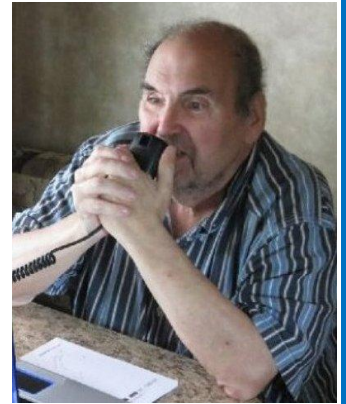
Lessons Learned

The biggest lesson I learned is that you should focus your energies on improving receive capability. It will give you the greatest reward for your hard work and hard-earned wages. Think ahead. While waiting for the kit, I downloaded the manual and started cutting coax. Working mostly alone, it took me 20 hours to get it on the air. I did have an issue with interference from AM broadcast stations. I put band pass filters in my NCC-1, and that resolved the problem. If you don't want that expense, DXE does carry an economical high pass filter from Hi-Z. If you're entertaining the thought of improving your station, start with your antennas! A \$12,000 radio is virtually worthless to you without good antennas. If you already have good transmitting antennas, invest in good receiving antennas before shelling out the cash for that 4 kW amplifier, or that shiny new rig! :) As I write this, I'm applying for my 5BDXCC award. Adding this array was the single most important improvement I've made to my station in the last ten years.

Good DX!

Power Supply - Bad Biode

Chuck, K8BBE



Several years ago, I purchased a cheap power 12 volt power supply and decided to update to a dial power source supply, providing both negative and positive voltages. The supply has a small transformer with only one diode to produce the 12 volt voltage, mounted on a very small place on the PC board with no other places to add anything else.

I found a revised drawing showing the upgrade and all the components except where to locate the “bi-ode”, needed to produce both the negative and positive sign wave from the transformer. I am told any size “bi-ode” will work.

A few years ago, I saw someone searching the Dayton Flea market looking for that exact part. Always wondered if it was found.....

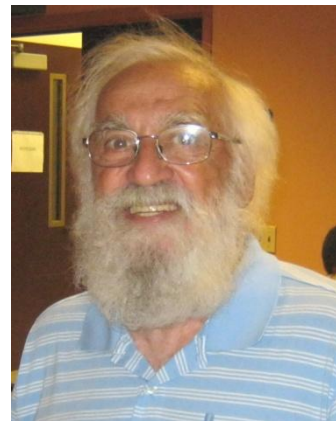
UTC - Zulu - British Summer Time ?

In 1979 London's Capital Radio announced that Operation Parallax would soon go into effect. This was a government plan to resynchronize the British calendar with the rest of the world. It was explained that ever since 1945 Britain had gradually become 48 hours ahead of all other countries because of the constant switching back and forth from British Summer Time. To remedy this situation, the British government had decided to cancel April 5 and 12 that year. Capital Radio received numerous calls as a result of this announcement. One employer wanted to know if she had to pay her employees for the missing days.

Paper Chase

Joe, W8KNO

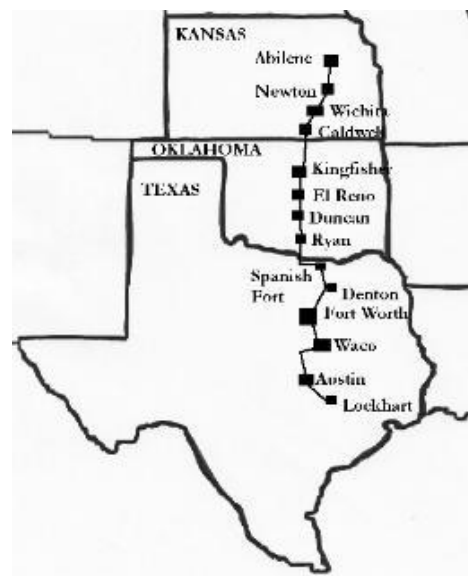
In 2000, a new series of Special Events began. The trial run of the Route 66 Special Event was on the air. It had stations K6A through K6L each in a different city along the route. The event was followed by The Original Thirteen Colonies, The Blue Ridge Mountain and The 300 Mile Garage Sale and I am sure there were more.



This month we see a new Special Event begin. It is The Chisholm Trail's 150th Anniversary which will be on the air from April 25th through the 30th. The Old Chisholm Trail was used in the mid to late 1800s to move longhorn cattle from Texas thru Oklahoma to the rail head at Abilene, Kansas for shipment to states back on the East Coast. The trip on the trail took as long as three months and as many as 5,000,000 cattle were moved during the time the trail was used. The price on Longhorn cattle was \$4 in Texas but would bring \$40 at the railroad.

There will be seven stations active along the trail:

- W5A - Abilene, Kansas
- W5B - Brazos Point Point, Texas
- W5C - Cleburne, Texas
- W5D - Duncan, Oklahoma
- W5E - Enid, Oklahoma
- W5F - Fort Worth, Texas
- W5G - Georgetown, Texas



To obtain a QSL card, send your card and a SASE to the station. The station address can be found at QRZ.com.



PCARS K8BF

The Club that puts the FUN in Ham Radio!





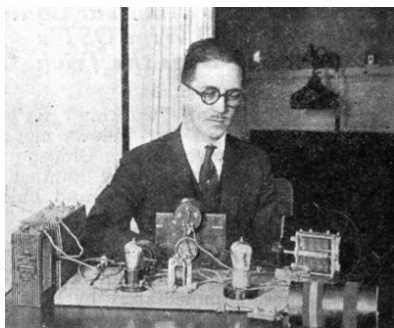
Centennial of Amateur Radio Blackout for World War I Occurs on April 6



World War I commenced in Europe in August 1914, and the US, under President Woodrow Wilson, was determined to remain neutral. As the fighting and the enemy's resolve intensified, however, and Germany began sinking ships attempting to evade a naval blockade of England as well as non-military vessels, including the Lusitania with a loss of nearly 1,200 lives, it became inevitable that the US would enter the fray, and the leaders of the newly formed American Radio Relay League encouraged its 3,000 members to be prepared.

The US officially declared war on Germany and Austria-Hungary on April 6, 1917, and the US government ordered most private radio stations in the US either to shut down or be taken over by the government. For the duration of WWI, it was against the law for private citizens to even own an operational radio transmitter or receiver, so amateur transmitting and receiving stations had to be disassembled. Amateur Radio operating privileges were not restored until November 1919 (QST resumed publication a few months earlier).

Once the US declared war, QST editorials urged qualified



Fred H. Schnell - 1MO

amateurs to volunteer their desperately needed skills to the military. Enlistees were particularly directed to the Navy, the nation's principal service user of wireless. A specific program was developed to induct volunteer amateurs into the Naval Reserve for the duration — the Class 4 Naval Reserve. The requirements included citizenship, the ability to pass a physical examination, and the ability to send and receive Morse code at 10 WPM. Most volunteering radio amateurs chose to join this reserve, ARRL's first Communications Manager Fred H. Schnell, 1MO, among them. He went to sea as a chief radioman.



ARRL co-founder Clarence D. Tuska (photo on left) received a commission as a lieutenant in the US Army Signal Corps, and he established a radio training school at Ellington Airfield near Houston, Texas.

QST itself suspended publication for the duration of the war. — Thanks to Mike Marinaro, WN1M, and United States Early Radio History by Thomas H. White.



Cover of the April 1917 QST, with Uncle Sam looking approvingly over the shoulder of a ham radio operator handling message traffic.

Interesting Gadgets I Wish I Had Time For

Dan, KB6NU



I'm on a lot of mailing lists and participate in a bunch of amateur radio forums. As a result, I see a lot of interesting gadgets that guys are buying or are thinking about buying. Here are three of the latest that look interesting to me. I wish I had time (and money) to purchase all of these and try them out.

Android Antenna Analyzer

On Reddit (<http://tinyurl.com/k8bsgtv>), some of the guys have been talking about the Mini60 Antenna Analyzer (<http://tinyurl.com/n8dn75w>). Its frequency range is 1 – 60MHz, but the cool thing about this device is that you can use it standalone with the built-in LCD display or with some software (<http://tinyurl.com/km8owfm>) and a tablet with a Bluetooth interface to get fancy frequency vs. SWR plots. Of course, this is made in China, but how can you beat the price? It costs \$112 shipped.



Multi-Functional Component Tester

Here's another marvel of Chinese engineering and manufacture – a smart component tester (<http://tinyurl.com/luychxu>) for only \$30, shipped. It identifies and characterizes NPN and PNP transistors, capacitors, resistors, diodes (including Zener diodes), N-channel and P-channel MOSFET, IGBT, JFET, triacs, and batteries.



This isn't the first smart component tester to hit the market, but the unique thing about this unit is that it has a graphical display that not only identifies the type of component that you've connected to it, but also draws the schematic symbol of the part. You can see a video of this tester in action at <https://www.youtube.com/watch?v=07FH6tjzwWg>.

Make your Raspberry Pi into a Desktop PC

Newark/element 14 will soon start selling a kit of part that will make it easier to turn your Raspberry Pi into a desktop PC (<http://tinyurl.com/lkbaxzv>). The kit includes:

- Intelligent and Safe Power Controller
- Interface to connect mSATA SSD (upto 1TB)
- Real Time Clock to keep track of time
- Heat Sink
- Enclosure



They don't list the price just yet, but this might be what I need to actually make use of the Raspberry Pi 3 I bought several months ago.

If you have one of these gadgets, or buy one in the future, please let me know how you like it. I'll put your review up on my blog, so that everyone can benefit from your experience.

When he's not drooling over electronic gadgets, Dan blogs about amateur radio at www.KB6NU.Com, writes the "No Nonsense" amateur radio study guides, and teaches ham classes. You can contact him by e-mailing cwgeek@kb6nu.com.

Swap-N-Shop

FOR SALE: Antennas, Tower, and Radios plus other stuff

| | |
|---------------------------------------------------------|----------------------------------------------------|
| Cushcraft Model XM-520 20 Meter 5 El Beam, \$100 | Kenwood TH-22AT 2 Mtr HT \$25 |
| Kenwood SP-430 Speaker \$25 | Nye Viking MBI-001 Tuner \$100 |
| Hy-Gain 6 Meter beam \$100 | |
| KENT Iambic Paddle model TP-1B \$60 | Code Key McElroy Streamkey Model 200 \$25 |
| AEA model QT-1 Antenna tuner \$25 | Radio Shack HTX-202 2 meter \$25 |
| Astron Model RS-20M Power Supply \$50 | Astron Model VS-35M Power Supply \$75 |
| Pyramid PS-25 Power Supply model \$50 | Swan SWR-1A SWR/ Pwr Meter \$10 |
| Andrew F4PNMV2-HC N Male connector \$10ea | Hy-Gain HG-52SS tower, Good Condition \$500 |
| Cushcraft X-7 Tri band beam \$300 | Hy-Gain Ham IV Rotor \$400 |

Will accept all reasonable offers. Misc tower parts, lots contact me if interested.

Contact: Al, AB8AA at 330-207-3296 or ab8aa@arrl.net [7/2/17]

FREE TO A GOOD HOME: The following **QST Magazines** (good condition). Thanks to the magic of downloadable archives, I'm getting rid of a ton of old QST's that I've hung on to over the years.
June-Dec 1993 Jan-May 1996 All of the following years: 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

Contact: Deron, N8XTH at N8XTH@portcars.org [6/2/17]

FOR SALE: AMERITRON AL-82 LINEAR AMPLIFIER - \$1,550.00 With a pair of Eimac 3-500Z Tubes, puts out 1500 W with 100 W drive. Good Condition, wired for 240V, 160 through 10 meters including WARC bands. Weighs 80 pounds. Prefer local sale, can deliver up to 35 miles.



YAESU FT-1000MP TRANSCEIVER - 100 W - AC VERSION - \$1,000.00 Excellent condition, Loaded with the following filters: Roofing Filter. 8,215 IF: 500Hz, 2.0 KHz, 2.4 KHz, 6.0 KHz 455 IF: 250Hz, 2.0KHz, 2.4 KHz, 6.0 KHz Includes manual and hand microphone.



TEN-TEC CORSAIR TRANSCEIVER - 100 W WITH MATCHING POWER SUPPLY / SPEAKER COMBINATION \$350.00 Good Condition - superlative full break-in CW performance - good starter radio. Has optional narrow SSB and CW filters. Includes manual. Will not sell transceiver without power supply.



HAMMARLUND HQ-129 VINTAGE RECEIVER - \$125.00 Good Condition commensurate with it's age, fully functional. Completely re-capped, re-tubed and re-aligned 10 years ago.



MFJ 259-B ANTENNA ANALYZER WITH CARRYING CASE- \$150.00 Good condition, fully functional, with manual. Covers 0.5 to 170 MHz in 6 ranges.



Contact: George, K3GP at K3GP@portcars.org
or call 330-829-9504 weekdays or weekends [7/2/17]

For Sale or Want Ad policy reminder: This is a PCARS members only benefit. Please don't ask to list items for a friend, relative or SK estate unless they are a member of PCARS. Requests come in from all over the USA (and beyond) to list items for sale or wanted items and we just cannot dedicate that much space to non-members. Listings are good for 3 months unless canceled or changed earlier. The date listed after the contact information tells you when the ad expires - example: [7/2/17] indicates the ad will run until July 2, 2017.



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 club station.

We have 56 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 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/>

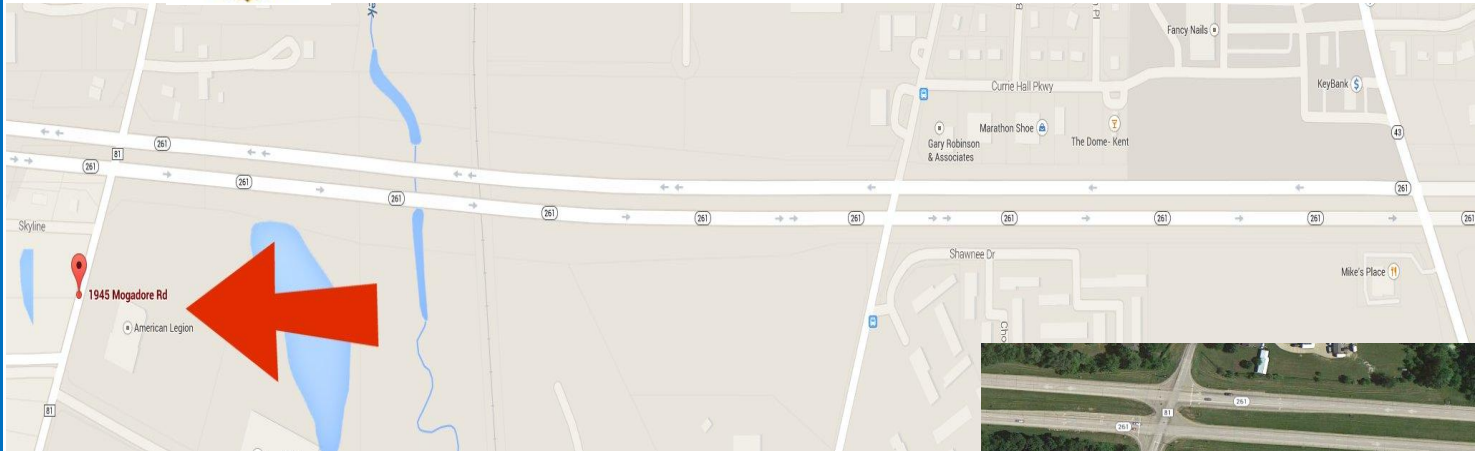


PCARS Meetings

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)*

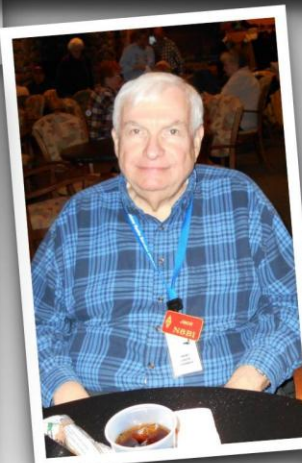
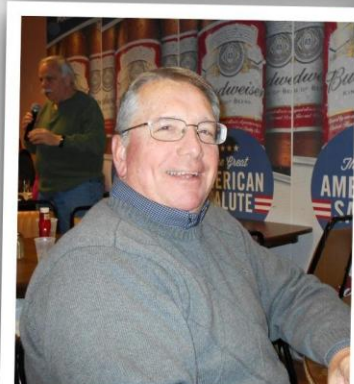
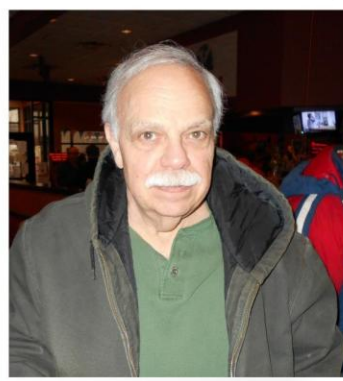
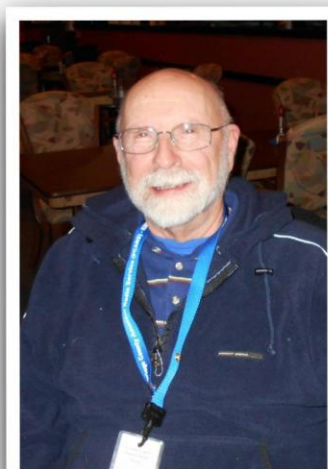
The menu consists of your basic burger / dog / chicken sandwiches, wings, fries, onion rings, and salads. There is also an appetizer selection as well. Adult beverages are available and costs are in line with what you would expect at most bar-restaurant facilities.

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 March PCARS Meeting







PCARS

March 13, 2017

Important Dates This Month

April 2 - Peanut Butter and Jelly Day

Peanut Butter and Jelly Day celebrates the most popular sandwich in America! It doesn't matter whether you like grape, strawberry, orange marmalade, blackberry, or any other form of jelly, the best compliment to them is the amazing and delectable peanut butter! Peanut Butter and Jelly has become such a popular taste sensation that it can be found in hundreds of different derivations.



Peanut Butter was first invented by the Aztecs, who ground roasted peanuts into a rich nutritious paste. Peanut paste has been used all over the world in many different derivations ever since, being an absolute foundation of many cuisines. One thing that made this protein and calorie dense food popular is it's resistance to going off, and the ease with which it could be transported. Combine that with an amazing taste and texture, and it's no wonder that peanut butter is a world favorite!

It comes in so many different varieties too! Chunky, smooth, natural, salted, unsalted, even premixed with jelly! Peanut Butter really is an amazing food, and has been used to feed those who haven't been able to eat 'solid food' for one reason or another. It's been used for a myriad of snacks, including ants on a log (Celery filled with peanut butter topped with raisins), peanut butter cookies, but it's most popular derivation by far is the peanut butter and jelly sandwich!

Peanut Butter and Jelly sandwiches were thought to be invented during the American Civil war, when the men mixed their peanut ration and jelly ration to create a delicious new treat while out on the field. When the men finally returned from the war, bedraggled and tired, they also brought with them news of this wonderful treat that brought them comfort on the field. Peanut butter and jelly sales soared at the wars end, all thanks to this delightful combination of sweet jelly and smooth peanut butter! Jelly in this case is the North American version of the word, referring to a special kind of clear fruit preserve that is created from sugar sweetened fruit juice into a gel-like state often utilizing nothing more than the naturally occurring pectin in the fruit. Sometimes it needs a little help, such as is the case with grapes, who are notoriously low in pectin. None the less, grape is a very popular flavor when mixed with peanut butter, second only to the luscious red strawberry!

There is a veritable rainbow of flavors of jelly available that can be used to help make this snack new every time! Grape, strawberry, blackberry, boysenberry, the possibilities are only limited by the types of fruit you can find! There are even more exotic flavors, such as hot chile pepper, habanero, even wasabi, and while these aren't as popular in the United States, there are those who prefer these spicy kicks to the sweetness every jelly brings!

Peanut Butter and Jelly aren't just found in sandwiches either! There's Peanut Butter and Jelly Ice cream for those who prefer a cold mix of this treat, it can be found in a special brand of spread called "Goobers" where the Peanut Butter and Jelly come pre-mixed! There are Peanut Butter and Jelly cookies, cakes, even the famous breakfast tart company Pop-tarts has come up with a variety of peanut-butter and jelly sandwich Pop-Tarts. No matter what your particular taste, you're bound to find a variety of this delicious mix to suit your palette.

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April 5th - Deep Dish Pizza Day

Pizza lovers far and wide will be making the most of Deep Dish Pizza Day. This is your holiday! But first, let us thank Pizzeria Uno's founder Ike Sewell, without whom this day wouldn't exist. He is credited with creating the spectacular deep dish pizza in 1943 in Chicago. This wonderfully tasty pizza, also known as Chicago-style pizza, is characterized by a superb buttery crust that can be as high as 3 inches tall, along with generous amounts



of flavorful sauce, toppings and cheese. On this day, get together with friends or family to visit your favorite pizza restaurant and enjoy a wonderful slice (or more) of cheesy goodness.

Don't fret if you can't get the exact deep dish pizza – a pan style pizza, thick crusted pizza or pretty much any delicious pizza will do. Better yet, use this day to finally create that perfect pizza you've always dreamed of making, and invite others over to share it with you!

April 6th - New Beer's Eve

For lovers of all brews everywhere, the years of 1920 to 1933 were incredibly sad times. This was the period of the Prohibition in the United States, where any and all forms of alcohol were verboten. Thankfully in 1933, the United States government came to their senses, and President Roosevelt decided that this frothy brew should once again flow freely in the taverns and bars of the country.



On this date in 1933, people lined up around the block at the doors of their favorite public house to prepare to imbibe the first legal brews in 13 years. Ever since that night, this day has been referred to as 'New Beer's Eve', a precursor of 'New Beers Day'. It was said that at 12:01 on 1933, Roosevelt stated "I think this would be a good time for a beer." For such an auspicious patron, Anheuser-Busch pulled out all the stops, delivering the beer with their Clydesdale draw carriage directly to the Commander in Chief. The first 24 hours of the end of the prohibition saw an estimated 1.5 million gallons of beer consumed.

This is a great time to set up a party, bringing in an abundance of different types of brews and calling in New Beer Day with an abundance of craft beers and the like.

Seeing how it's only this year's New Beer's Eve once, it just makes sense to go a little out of well-travelled waters for it. There are micro-breweries popping up all over America, so the opportunity to try a local brew for the first time is popping up every day. Nothing better than celebrating the end of the prohibition by trying out a beer that may never have existed if it had not!

But that doesn't mean you should spend a small fortune on it, most microbreweries produce beers at a very reasonable rate. While there are higher priced beers on the market, there is nothing saying that they are in fact of superior quality. Some of the most delicious beers on the market are bottom shelf mostly unknown micro-brews. So go for a rarely experienced beer, but don't get a new mortgage on your house to make it happen.

There are many good suds to be tried this time of year, and it's a great time to run beer scout for the craft beers that are out there. You can take this opportunity to introduce friends and family, and even fellow beer drinkers to your favorite beverage. But make sure you have a good beer to offer them. There are beers with different qualities that have light fruity qualities, and others with the dark rich body of Guinness. Setting up a party with your friends to get together for a beer tasting is a great way to celebrate this holiday.

So celebrate this New Beer's Eve by heading out and exploring the vast unexplored wilderness that is craft beers! There are so many options out there for the intrepid beer scout to discover. It's been a long time since the prohibition, and the world is full of the amazing achievements of brewers reveling in the new freedom we've been given because of it. This is the time to go out to your favorite pub and perhaps sponsor an event there, helping others to celebrate the wonderful liberation in libations we experience. You're craft brew deprived friends will thank you!

April 12th - Grilled Cheese Sandwich Day

Grilled cheese sandwiches are a delicious, toasted delight popular all across the world. They even have their own holiday, Grilled Cheese Sandwich Day, when it's practically your duty to indulge in them.

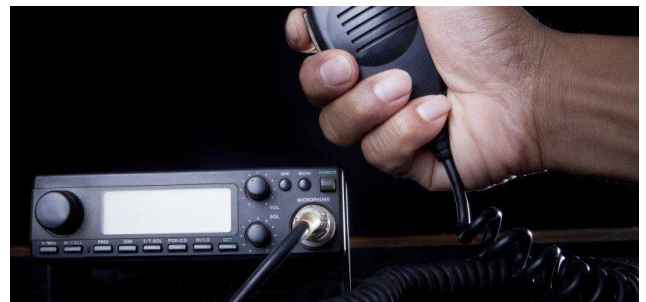
Melting cheese on top of bread is a culinary concept that has been around since the time of the Romans, but grilled cheese sandwiches as we know them didn't become popular until the 1920s. Due to the ready availability of cheese and sliced bread, they became an American staple, but also spread around the world.



Naturally, the best way to celebrate Grilled Cheese Sandwich Day is to make and eat a grilled cheese sandwich. All you need is bread, cheese and butter, although you can experiment by adding more ingredients of your choice. You butter the outside of each piece of bread, and grill the sandwich while the cheese melts on top. Delicious!

April 18th - Amateur Radio Day

Long before the invention of the World Wide Web, when instant communication was a dream and a letter was actually considered a pretty speedy way to communicate (outside of the phone), there were a group of pioneers who had already discovered the glories of a word-wide communication and the joy of communicating with people all over the world instantly. What could this amazing form of communication be? Why, Amateur Radio! Amateur Radio Day reminds us of these great pioneers, their modern descendants, and how radio has been serving a worldwide community for well over 100 years.



History of Amateur Radio Day

Back in April of 1925, the International Amateur Radio Union came into existence in the incredibly cosmopolitan city of Paris. These intrepid adventurers had discovered that the short wave spectrum that amateur radio used to transmit and receive was able to unite people the world over, something that had formerly been speculated as being impossible. This group of experimental radionauts proved this theory wrong, and banded together to campaign for and protect those bandwidths that would come to serve the community of radio enthusiasts.

Since then the IARU has worked tirelessly to broaden the range of bandwidths available to radio fans, and has expanded to include members all over the world, from 25 countries at last count. Interest in Amateur Radio has only grown since those early days, with over 3,000,000 licensed operators spreading their voices across the globe today. It's through this medium that people from different nations and cultures were able to spread ideas with great speed, long before the ability to shoot off an email or video chat was ever possible.

How to Celebrate Amateur Radio Day

IARU has events all over the world to celebrate this great invention and to bring together people who still find value in being able to skip a radio across the ionosphere over thousands of miles and bring together two sides of the globe through little more than a oscillating wave of energy. If you've ever seen or worked with one, take some time on Amateur Radio Day to research the things it has been used for, and maybe see about getting into a small beginners set to start exploring the world of amateur radio. Amateur Radio Day is your opportunity to dive into the world of Amateur Radio and discover what new friends and communities exist all over the world, so why wait?

April 22 - Jelly Bean Day

Some of us harbor a dark secret, one that leaves us shamed and reviled by all those who, by their estimation, are the repositories of better taste. They sneer at our choices and look upon us with disgust as we dive in and enjoy that thing which bears all the rich, bitter sweetness that we love in life. That's right. We like the Black Jellybeans, the dark sheep of the Easter bunny's basket of indulgences. Jelly Bean Day celebrates the entire rainbow of flavors that the world has to offer, and that includes our precious black licorice, and so we can for once agree on one small detail. That Jelly Beans are delicious, and the world would be a sadder place without them.



History of Jelly Bean Day: Jelly Beans have a long history, reaching back further than their association with Easter and, in fact, the Easter Bunny. In the mid 1800's, the Jelly Bean was developed, bringing these flavorful rainbows into our lives and much joy with them. It is thought that the original bean was inspired by the sweet candy known as Turkish delight, comprised of rich fruit and powdered sugar. Perhaps the development was someone trying to find a less messy and more portable version of this already popular treat. Jelly Beans have had a surprisingly deep influence on our culture, with the term expanding beyond meaning a simple delicious candy. The term Jelly Bean has been used to describe simple multi-use electronics equipment in the Electronics Industry, as well as the odd but distinctly American use in the 1910's. During this time Jelly-Bean was often used to describe a youth who dressed in the latest style to catch the eye of young women, but beyond that had little to offer those who took the bait. One of the most well-known uses of Jelly Beans is in the hugely successful Harry Potter series, where-in we can find the devilish and untrustworthy "Bertie Bott's Every Flavor Bean". A rather adventurous assortment of Jelly Beans where the flavors could literally be anything you imagine. While some of these flavors haven't translated into real life, Bertie Bott's Every Flavor Bean is indeed a product you can buy, with such flavors as Earwax, Vomit, and more. Certainly not for the faint of heart.

How To Celebrate Jelly Bean Day: First off, take a big bag of Jelly Beans and make them disappear down your gob hole. Yes yes, you can leave the black ones if you like, we'll just accept them by SASE (Self Addressed Stamped Envelope) at our offices address. Thank you very much. Or you can share them with other right thinking people who live in your vicinity. Another popular activity is to hold a charity event by filling a jar with jelly beans and offering people the opportunity to win a raffle prize. All they have to do is guess the number of jelly beans, and when the day is over you find out how many people got it spot on, or how many guessed the closest. Those who win get to split the prize, while the money goes to your favorite charity!

April 22 - International Marconi Day

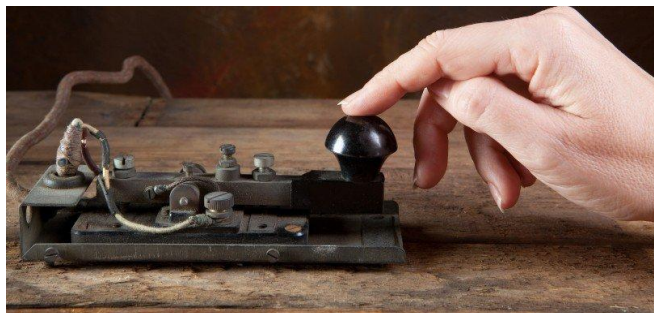
Amateur radios, point-to-point contacts, high-frequency wave transfers, a mysterious yet attractive prize for the most connected stations... All of this sounds like the beginning of a quirky yet adorable B-movie. In reality, it is the essence of International Marconi Day, a 24-hour amateur radio event which celebrates the career of Italian wireless communications pioneer Guglielmo Marconi. The event takes place annually on the Saturday closest to his birthday (April 25, 1874).

To commemorate the Nobel laureate's achievements, fans use HF radio to make direct point-to-point contact between stations, relying on the same technology Marconi developed and utilized in his time. Although nowadays the Internet is the medium of choice for global communications, the idea behind International Marconi Day is to keep the spirit of invention alive. The event also provides an exciting throwback to the days when a connected planet Earth was but a bold dream and only a few exceptional people, such as Marconi, saw the value in it.



April 27th - Morse Code Day

We've heard the sound in movies both old and new, it finds its way into horror movies as some lost mysterious code. Heroes in action flicks use it to help send out secret messages past the villains holding them captive, and secret lovers have passed messages using it in carefully constructed pieces of art or even braille. It served as the foundation for a new era of communication, and has served vital roles in wars old and new. What is it we're talking about? Morse Code of course! Morse Code Day celebrates this amazingly concise, powerful, and influential way of transmitting information and the history of how it changed the world.



The History Of Morse Code Day

The year was 1836, and Samuel F.B. Morse was working on something with a pair of compatriots that would utterly change the way the world transmitted information. What they would develop would be the device and technology that would drive communication until the radio finally became fully developed years later. Even then, radio was often used to transmit Morse Code over long distances, as even weak signals could often carry a comprehensible message in Morse code. It also has the distinction of being a coded language that a human with the right experience can translate by ear, at speed, without a decoder.

While it was developed for English, the alphabet has frequently been modified for other languages, making its reach and use universal in nature. From then it has found its way into Aviation, Amateur Radio, and can even be transmitted by flashing lights, as any fan of media can tell you. Mirrors, flashlights, even bright spotlights have all been used to transmit information in this amazing and diverse code base. Perhaps the most amazing and unexpected use of this language is to help those with disabilities be able to communicate through simple tapping, or even through a simple skin buzzer. It truly is powerful and adaptive.

How to Celebrate Morse Code Day

Morse Code Day makes for a great opportunity to add an unusual and interesting method of communication to repertoire. You can share notes with your friends on pages filled with dots and dashes, you can even send them via your digital devices. Leave messages on cake or flash each other notes with mirrors across schoolyards and workplaces. However you celebrate it, give yourself a chance to find new ways to communicate by adding a little Morse code to your life!



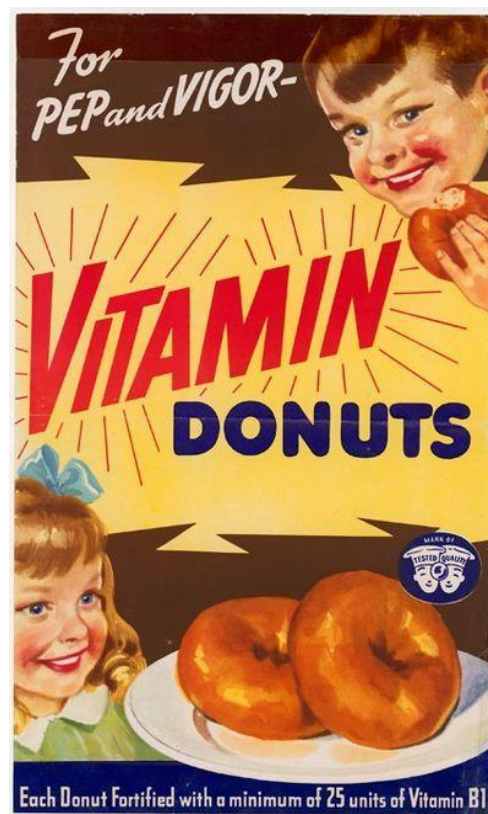
In King Kong (2005), SS Venture captain Englehorn receives a Morse code message calling for the arrest of Jack Black's character, Carl Denham. However, Morse code enthusiasts know that "... --- .- / -- . / - / -- --- -. -.- . -.-" actually means "SHOW ME THE MONKEY."

Just a Few More Chuckles for April

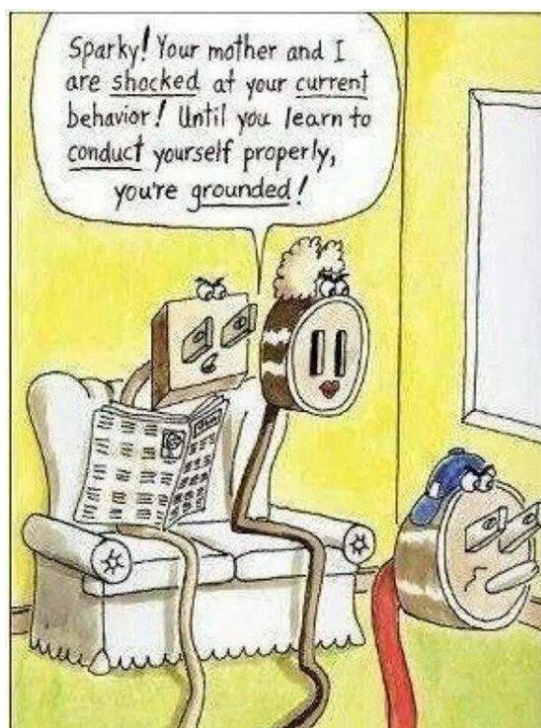
My greatest fear is that I'll die and my wife will sell my



radios for what I told her I paid for them.

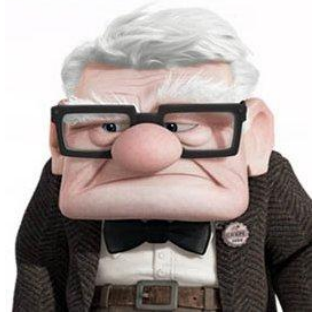


When a HAM finally goes out to dinner....



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 the year.

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

K8CAV, AC8NT, KB8UUZ, K3GP, WB8LCD, W8PT, KK4FEM, N8RLG, WA8CCU, KC8PD, WA8EFK, W8WTD, KB8AMZ, KB3GXB, W8BBQ, N8IL, K8BBE, W8KNO, KB6NU, WX1DER, NF8R, W8EZT, Dan Maloney, Elizabeth Bruton, Loof Lirpa, the ARRL, and the World-Wide Web.

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

Disclaimer

Yes folks, its April. And with that month, I try to throw in material that has a bit of humor to celebrate April Fool Day. If you found something offensive - I am sorry, really. If you found something that made you laugh - That's Great! I must say, finding the material for the April issue is getting harder and harder each year, even with the internet. So when you run across something that you think would be good of the next April issue, please send it to me. I'll throw it in my April Folder.

Now, just to be clear about a disclaimer:

This newsletter is meant for educational purposes only. Any resemblance to real persons, living or dead is purely coincidental. Void where prohibited. Some assembly required. List each check separately by bank number. Batteries not included. Contents may settle during shipment. Use only as directed. No other warranty expressed or implied. Do not use while operating a motor vehicle or heavy equipment. Postage will be paid by addressee. Subject to approval. This is not an offer to sell securities. Apply only to affected area. May be too intense for some viewers. Do not stamp. Use other side for additional listings. For recreational use only. Do not disturb. All models over 18 years of age. If condition persists, consult your physician. No user-serviceable parts inside. Freshest if eaten before date on carton. Subject to change without notice. Times approximate. Simulated picture. No postage necessary if mailed in the United States. Breaking seal constitutes acceptance of agreement. For off-road use only. As seen on TV. One size fits all. Many suitcases look alike. Contains a substantial amount of non-tobacco ingredients. Colors may, in time, fade. We have sent the forms which seem to be right for you. Slippery when wet. For office use only. Not affiliated with the American Red Cross. Drop in any mailbox. Edited for television. Keep cool; process promptly. Post office will not deliver without postage. List was current at time of printing. Return to sender, no forwarding order on file, unable to forward. Not responsible for direct, indirect, incidental or consequential damages resulting from any defect, error or failure to perform. At participating locations only. Not the Beatles. Penalty for private use. See label for sequence. Substantial penalty for early withdrawal. Do not write below this line. Falling rock. Lost ticket pays maximum rate. Your cancelled check is your receipt. Add toner. Place stamp here. Avoid contact with skin. Sanitized for your protection. Be sure each item is properly endorsed. Sign here without admitting guilt. Slightly higher west of the Mississippi. Employees and their families are not eligible. Beware of dog. Contestants have been briefed on some questions before the show. Limited time offer, call now to insure prompt delivery. You must be present to win. No passes accepted for this engagement. No purchase necessary. Processed at location stamped in code at top of carton. Shading within a garment may occur. Use only in well-ventilated area. Keep away from fire or flame. Replace with same type. Approved for veterans. Booths for two or more. Check here if tax deductible. Some equipment shown is optional. Price does not include taxes. No Canadian coins. Not recommended for children. Prerecorded for this time zone. Reproduction strictly prohibited. No solicitors. No alcohol, dogs, or horses. No anchovies unless otherwise specified. Restaurant package, not for resale. List at least two alternate dates. First pull up, then pull down. Call toll free before digging. Driver does not carry cash. Some of the trademarks mentioned in this product appear for identification purposes only. Record additional transactions on back of previous stub. Decision of judges is final. This supersedes all previous notices.

Amateur Radio GENERAL Class ~ Upgrade Class ~



The Portage County Amateur Radio Service, Inc. (PCARS) is offering a General Class upgrade course

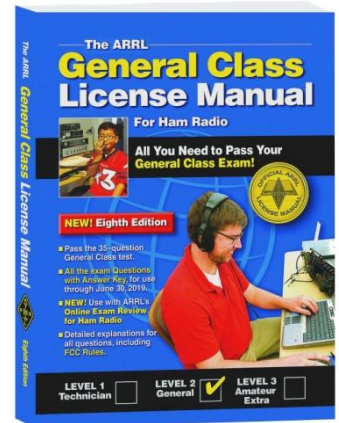
When: **Wednesday Evenings 7:00 p.m.**
Starting April 19, 2017
License testing on the last day of class - June 7th

Where: At the PCARS Club Site located in the
Dietrich Building - 705 Oakwood Street - Ravenna.



Cost: \$25.00 registration fee for non-PCARS members. *\$25 fee includes a One Year Membership in PCARS*
There is **no** fee for current PCARS members

Text: ARRL "General Class License Manual" Book may be purchased from PCARS for \$30.00 (Limited Supply)



Information & Registration: Contact: **Jim Wilson, AC8NT**
by e-mail: AC8NT@portcars.org
or phone: **330-342-8149**

Please register with Jim, AC8NT as soon as you can
You can pay the registration fee the first night of class

As a **General Class Amateur Radio Operator** you will be able to Contact other ham radio operators in the area around the world on the HF Bands.
It will open up a whole new area of fun for you in Amateur Radio.



What are these people waiting for???



Another Cuyahoga Falls Amateur Radio Club Hamfest!

The Cuyahoga Falls Amateur Radio Club, Inc. is holding its 63rd annual Hamfest and Computer show Saturday, April 8, at Emidio & Sons Party Center, located at the corner of Bath and State Roads in Cuyahoga Falls. Doors open at 8 am for general admission and the Hamfest wraps up about noon. Admission is still just \$6, and food and drink service will be provided by Emidio & Sons.

Looking for a new radio, or some coax, or a piece of test equipment you've always wanted? From complete stations to coax adapters, you have a good chance of finding it at our Hamfest. Even if you don't buy anything, it's a great chance to have an eyeball QSO and perhaps share a cup of coffee with a friend or two that you haven't seen for awhile.

Got some gear you want to unload? This is a chance to empty your basement and pick up some disposable income in the process. Consider getting a table and selling your surplus gear. Eight foot tables (which include one chair) are \$15 in advance and if there are any left, \$18 at the door. Vendors can setup Friday evening from 7 to 9 pm, and Saturday from 6 am to 8 am.

Got stuff you hate to throw away but don't think you can sell? Bring it and donate it to the Club by putting it on the "Find what you want, pay what it's worth" tables. No CRT devices (monitors, TVs, etc.) please! And don't forget to look through it yourself – you just might find that goody you've been looking for.

This year, main prizes (courtesy of the Club) are three merchandise certificates to DX Engineering valued at \$300, \$125, and \$75. You do not have to be present to win the main prizes. We will also be giving out ARRL merchandise certificates and several other merchandise certificates as door prizes. Join or renew your Club membership at the Hamfest and get an extra chance at the prizes.

Talk in directions and mobile check-ins (for a mobile check-in prize) will be accepted starting about 7 am Saturday morning. Check in frequency is the CFARC 2 meter repeater on 147.27 + pl tone 110.9, or on the Club's linked 70 cm repeater at 444.85 + pl 110.9.

If you've been to our Hamfest before, you know how much fun it can be. If you're newly licensed, plan to attend and enjoy one of the largest hamfests in the area.

Vendors !!!

Reserve your tables for the
Cuyahoga Falls Amateur Radio Club, Inc.
**63rd Annual
Hamfest
Electronics and Computer Show**

Saturday, April 8th 2017, 8:00 AM - 1:00 PM

Emidio and Sons Party Center

48 E. Bath Road at the corner of State Road
Cuyahoga Falls, Ohio 44223

\$15 each for the first two tables (includes one chair each).

\$12 for each additional table (no chairs).

Extra chairs are \$2 the day of the event subject to availability.

As always, you are welcome to bring your own.

Online Reservations:

<http://www.cfarc.org/hamfest-reserve.php>

For more information, please visit our hamfest page:

<http://www.cfarc.org/hamfest.php>

Major vendors with confirmed reservations (paid in full) will have their organization mentioned on our web flier and newly printed paper fliers.

Thank you for your time and we hope to see you there!

Mike Luoma, K8MAL [234-206-0270](tel:234-206-0270) hamfest2017@cfarc.org

Pioneer Amateur Radio Fellowship, Inc.



Hamvention 2017



Saturday, May 20, 2017 - 5:30 AM

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

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

The cost of the **Bus & Entrance ticket** to the Hamvention:
\$72* before April 15, 2017

The cost of the **Bus Only** to the Hamvention:
\$55* after April 15, 2017

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

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

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

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

Parking will be in the back of the church.

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

Transportation is being provided by the Crossroads Transportation Company.

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

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

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

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

Location of Departure:**

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

***** The church is currently up for sale. We will keep you up to date should that happen and an alternative departure location is needed. (Rest assured, we will work to keep it within the local area.)***

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

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

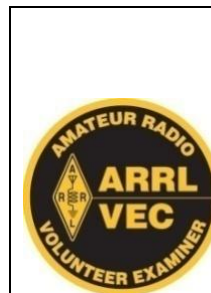
PCARS meets the second Monday of each month at the **Kent American Legion Post 496**.
1945 Mogadore Rd. - just South of Rt. 261 - enter the rear of the building for the meeting room.

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

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

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

| ~ 2017 Officers ~ | | 2017 PCARS Appointments & Committees | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|-----------------|
| President - Rick Kruis - K8CAV Vice President - Jim Wilson - AC8NT Treasurer - Amy Leggiero - KD8SKL 3 Year Trustee - Robert Gurney - N8RLG 2 Year Trustee - Jim Aylward - KC8PD 1 Year Trustee - Chuck Patellis - W8PT Past President - Tom Sly - WB8LCD | ARRL Awards - DXCC WAS, VUCC, WAC | W8KNO | Joe Wehner |
| | ARRL Awards - WAS | KB8UUZ | Tom Parkinson |
| | Club Site Manager/Liaison | KC8PD | Jim Aylward |
| | Contest Coordinator | W8PT | Chuck Patellis |
| | EchoLink | K8SRR | Steve Randlett |
| | Field Day Chairman | W8PT | Chuck Patellis |
| | FYAO Chairman | W8PT | Chuck Patellis |
| | Historian | KB8SZI | Peggy Parkinson |
| | K8BF Callsign Trustee | K8FEY | Bob Hewett |
| | K8BF QSL Manager | K8FEY | Bob Hewett |
| | Membership Chairman | KC8PD | Jim Aylward |
| | Net Control Manager | WB8LCD | Tom Sly |
| | 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**

| | |
|---------------|------------------|
| KC8PD | Jim Aylward |
| KB8UUZ | Tom Parkinson |
| WB8LCD | Tom Sly |
| N8XTH | Deron Boring |
| N8PXW | Jim Korenz |
| N8QE | Bob Hajdak |
| W8PT | Chuck Patellis |
| K8IV | Ed Polack |
| K8QF | Russ Conklin |
| N8RLG | Robert Gurney |
| W8RID | Robert Davet |
| WA8CCU | Al Nagy |
| NR8W | Russ Williams |
| W8EZT | Frank Tompkins |
| N8OQQ | Bryan Buchwalter |
| AC8NT | Jim Wilson |
| K8MSH | Mark Haverstock |
| KA8TOA | Greg Ash |
| KB3GXB | Jennifer Andrews |

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliated
April 20, 2006



Special Service Club
March 22, 2010

The **RADIOGRAM** is the official **Award Winning** (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.) newsletter of the **Portage County Amateur Radio Service, Inc. (PCARS)** – copyright © 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. The **RADIOGRAM** comes out the first day of each month (usually), please have inputs submitted by 8 pm ET on the last Friday of each month. ARES® (Amateur Radio Emergency Service®) is a program of, and both logos are registered trademarks (used with permission) of the American Radio Relay League, Inc. ARRL, the National Association for Amateur Radio™. **Why the Black Squirrel in our logo?** For those of you not familiar with it: The Black Squirrel is commonly seen around Portage County, Ohio. Seems that some of these little guys and gals got loose from Kent State University back in 1961. They have migrated and thrived throughout our county. Kent State University even has an annual Black Squirrel Festival. **So when you spot a black squirrel – think PCARS!**

This is the **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 20 kb photos) to the newsletter editor: kb8uuz@portcars.org



NLC

