



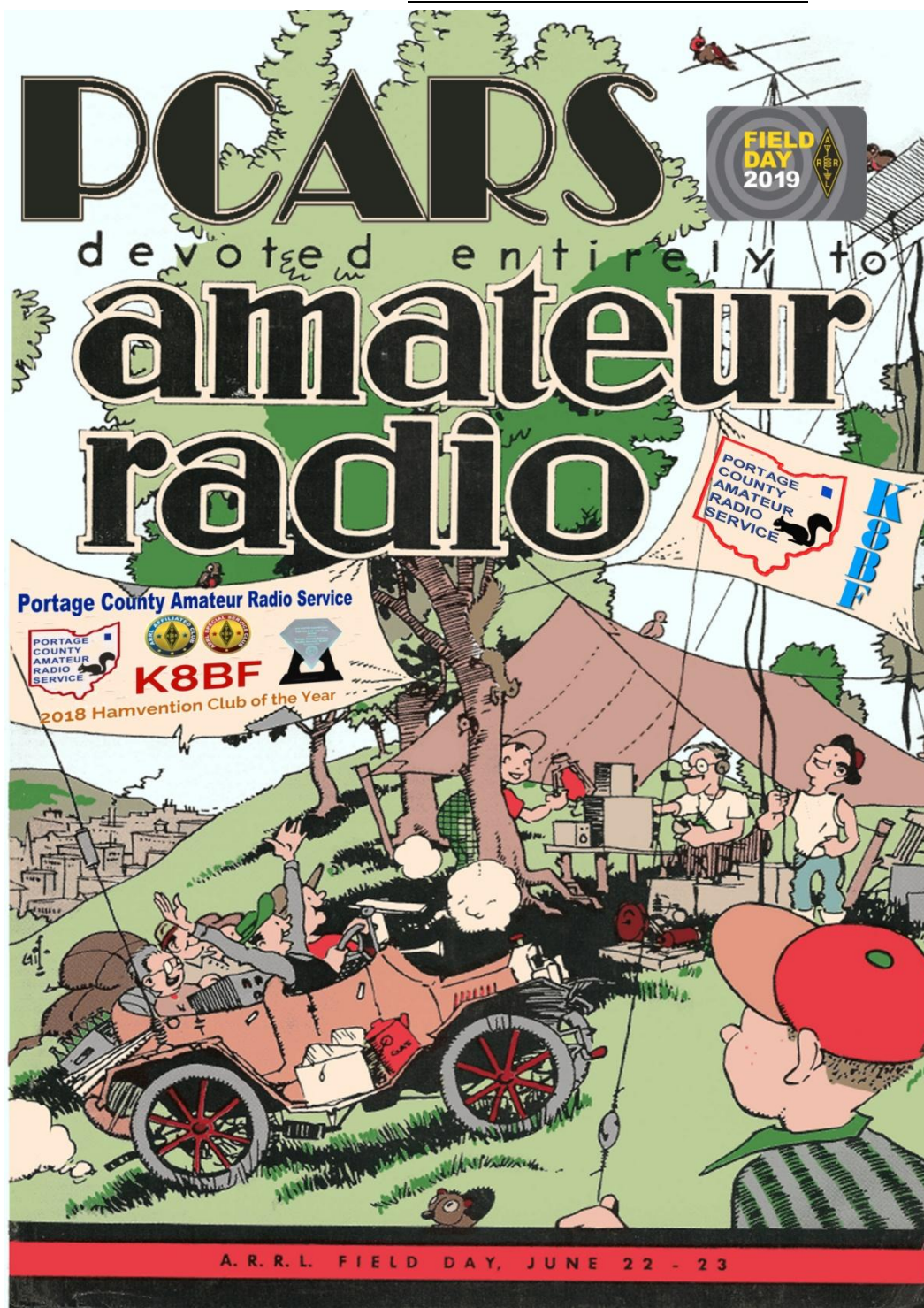
The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works

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

PCARS - the 2018 Hamvention® Club of The Year

June 2019 - Volume 14 Number 6



FIELD DAY 2019

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

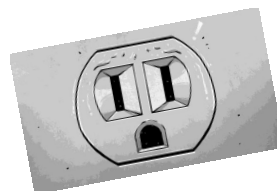


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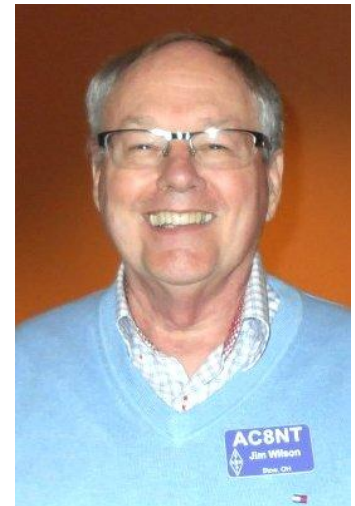
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From the President

Jim, AC8NT
PCARS President



Hamvention

Had a lot of fun at Hamvention this year. I took the Pioneer bus and that was also a blast. You meet some interesting people on that bus. Spent some quality time with potential speakers for our monthly meetings including Steve Thomas, M1ACB General Manager of the RSGB. He has agreed to make a Skype presentation containing two areas of interest. First is ham radio in Britain and second is a Skype tour of the RSGB station at Bletchley Park. This should be a great presentation. We are currently planning this presentation for January 2020.

Also spent some quality time at the AMSAT booth. That visit resulted in two new projects, a CubeSat simulator and adding telemetry reception and decoding to the capabilities of my portable station. The projects they are involved in are very interesting.

Yes, I bought a few things. The usual small stuff that costs much less at Hamvention. How many adapters and cables does the average ham need? Seems I add more each year.

My Portable Station Project

I have read a lot about portable stations. They are stations that can do almost everything your home station can do and also be portable. These stations can be very useful for emergency operations and operations at other public events like Maker Faires and schools.

Like most of you I have Go-kits. As an example I have a LDR-5 HF station with end-fed antenna and battery pack in one of those boxes. But more and more I find I need a full portable station. One that will work all bands and modes including digital and satellite modes. It needs to be portable so I can take it anywhere but not necessarily small enough to backpack. With the new addition of my IC-7300 I found I could use my IC-7000 as the transceiver for this station. The station also has a wide range HF automatic antenna tuner, Signalink interface, antenna measurement equipment, battery management system, 120 VAC power supply, active USB hub and its own laptop all in one portable case. It can do everything I can do from my home shack with this station. I researched a lot of options for housing the system. I asked my son JC, KC3JXQ with his experience in music and studio what he would use. He suggested I house my station like "Roadies" (those unsung men and women that move equipment for musical tours) do. That turned out to be a very good idea. Their cases can take serious handling without damage to the electronics they carry. I now have a full station in a box including coax and power cables and even two antennas. **Grab the box and go** where ever you need to operate without forgetting anything. That is my idea of remote operations.

I suggest we all think of what we can do remotely. Maybe our Go-kits need some rethinking. How much can you do remotely given only a short time to prepare?

Club Site

You will be seeing a lot of QSTs on work that needs to be done at the club site. We need to get bay three ready for use. Basically this will require organization the equipment in the bay, some cleanup and some painting. We could use your help. If interested please respond to one of the QST you will be getting.

Field Day

Please plan to take part or at least visit Field Day. This is really ham radio in action. Invite non-hams young and old to visit and see how we operate. We will have a GOTA station and some things that kids will enjoy, so please come and at least visit. I am sure Tony could use some more help and some of the stations captains still have operating slots open.

Final Note

Remember that PCARS and ham radio is about fun. So have some fun with all that gear you have purchased. Learn something new and get some great contacts.



From the Vice President

Nick, AC8QG

PCARS Vice President

This was my first year at Hamvention. I have to say, I was not disappointed! I was there part of all three days and I never ran out of things to see or people to meet. It was great to see so many people from PCARS out there, too. I think we were well represented throughout the weekend.



As some of you have already heard, I was crazy enough to attend Hamvention with my five kids plus four on loan. It was... interesting at times, but we all had lots of fun. At the youth forum, we saw Carole Perry, WB2MGP and several wonderful young people who presented on their unique amateur radio experiences. Carole said some wonderful things about PCARS, and even let me say a few words about

the club at the end of the forum. I felt a lot of pride to be part of such a great club with such great members!



Upcoming Monthly Meetings

We had a great presentation in May from Jim Storms, AB8YK! It's encouraging to learn about the support and opportunities for youth in the hobby. As a parent of a couple young hams, I'm really grateful for volunteers like Jim who ignite the spark of curiosity and adventure in the next generation. He's a true all-star in the amateur radio community, and it's great every time we see him at a PCARS meeting!

The summer lineup is filled with more fun! Come on out, enjoy some face-to-face time with other club members, and maybe learn a thing or two from our presenters!

June: Hal Turley W8HC will talk about his experience with DXpeditions

July: Frank Tompkins W8EZT "Finding the Fox - The Art and Science of Amateur Radio Direction Finding"

August: Jim Wilson AC8NT - Antenna analysis

September: Ryan Shackelford - Director of the Portage County EMA

October: Australia Radio Club - Special Skype Presentation from Down Under

As always, if you have any suggestions for a meeting topic, or if you are interested in giving a presentation please let me know. We're always looking for new and interesting topics! Thank you to all the people that helped fill this list!



PCARS
www.portcars.org



Schedule of Events

On the calendar for upcoming meetings and activities are:



- June 1st - VE Testing at the club site in Ravenna - 10 am
- June 3rd - Board Meeting at the club site - 7 pm
- June 10th - PCARS Meeting at the American Legion in Kent - 7 pm
- June 22-23 - FIELD DAY
- June 22nd - VE Testing at the Field Day Site - 4 pm
- July 1st - Board Meeting at the club site - 7 pm
- July 8th - PCARS Meeting at the American Legion in Kent - 7 pm
- July 20th - NA QSO Party RTTY at the club site



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

- First Tuesday - Digital - Moderator: Rick, K8CAV
 Second Tuesday - QRP/CW - Moderator: Terry, KB8AMZ
 Third Tuesday - Antenna - **CANCELED FOR JUNE**
 Fourth Tuesday - DX & Contest - Moderator: Chuck, W8PT
 Fifth Tuesday - Linux for Hams - Moderator: Terry, KB8AMZ
 Fourth Thursday - **Net Night at the club site - 6:30 pm**



Happy Birthday PCARS Members

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

AC8XO	Vince	Bednarz
WB3HUS	Richard	Berezanich
KD8WCK	Richard	DeMattia
KA8OAD	Ken	Dorsey
W8SV	Howard	Evans
KD8ZTZ	Darlene	Fetherolf
	R. Daniel	Foreman
KC8YSU	Steve	Hannah
KE8LAM	Doug	Magill
KD8EPF	Rena	Martin-Wehner

KD8SIZ	John	Miles III
KB8VJO	Gary	Overfield
KD8JN	Randall	Phelps
KD8LIR	Jennifer	Sly
W8CDL	Coletta	Tomasik
WD8DAU	Dan	Trout
KE8JUJ	Ben	Wagner
KE8LWO	Bernadette	Wagner
WB8OVQ	Bob	Warner



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



Hamvention® 2019

Hamvention® 2019 is in the history books. No official count yet, but it appeared that the attendance was at an all time high. The weather cooperated with sunny skies, no rain and the traffic was improved since last year. The food vendors were GREAT. Friday seemed to be the busiest day at least in the main buildings. Large crowds, steady and all day long. I kept looking outside to see if it was raining, wondering why so many people were in the buildings. Since I was working (DX Engineering booths), I did not have a chance to wonder very far and did not make it to the flea market or some of the smaller buildings and tented areas. But from what I did see, it was a very busy three days. Never heard anyone complaining. The DARA volunteers were everywhere and all seemed to be going very smooth.



I sent out a QST asking for all PCARS people that were at Hamvention to send me some pictures and stories of how it went. To date, I have only received photos from: AC8QG (36), WB8LCD (19), K8BBE (16), WB2DFC (1), N8NB (1), K8SRR (4), KA8TOA (2), KD8SNM (1), KW8KW (1), N8FUM (4), WA8SAJ (5), WA8UWV (2), plus a few more that I got from the web. **COME ON - I KNOW there are more out there !!!!!!!!!!!!!!! AND I know that there MUST be a few good stories as well.** So - I'm asking again: **PLEASE** send me your pictures and stories. I plan on putting them all together in a supplemental issue to the newsletter. That would really be great to see all the pictures in one place.

Soooooo - the only picture I'm posting in this issue of the newsletter is one that WB8LCD sent - **the PCARS member's annual Hamvention® photo that was taken on Saturday at 2 pm.** Look how many members showed up (and there were more at Hamvention® that missed getting into the picture) - now I know that most of you must have taken photos - so send them in for all to share. Send your pictures and stories to: KB8UUZ@gmail.com - 73, Parky



Field Day 2019

Tony, WA8AR
Field Day Chairman



Well, mother nature did not cooperate with Antenna Day. The past rains had made the site *way* too soggy for us to be on. We did not want to risk putting big divots in the ground, plus the chance of more thunderstorms were predicted for June 1st.

So - **ON TO FIELD DAY** - that date will not change - **June 22, 23** - Hope to see you there !!!!!!! All members, please stay tuned for QST announcements regarding Field Day activities; requests for volunteers for specific tasks or last minute changes.

FIELD DAY 2019 CREW			
Field Day Chairman	Tony WA8AR	CW Station Captain	George K3GP
Field Day Co-Chairman	Mike KB8TUY	Flex Station Captain	Rick K8CAV
Safety Officer	Karen N8HUC	VHF Station Captain	Mike KB8TUY
Public Info. & Social Media	Tom WB8LCD	20 Meter Station Captains	Tom WB8LCD/Chuck W8PT
On-Site PIO & Media Table	Tom KB8UUZ	40 Meter Station Captain	Ed K8IV
Antenna Crew Chief	Tony WA8AR	GOTA Station Captain	Jim AC8NT
Traffic Messages	Bill WB9LBI	Power Team Captain	James KD8VT
IT Managers	Steve K8SRR	Food Service Captain	Ed K8IV
	Zeb KD8WZS	Educational Program	Jim AC8NT
Satellite Coordinator	Jim AC8NT	ARRL Bulletin	Rick K8CAV
News Paper Info Coordinator	Nick AC8QG	Finance Chairman	Paul KE8EGF

CW Station - Field Day 2019



George, K3GP
Field Day CW Station Captain



Based upon the current level of interest, the preliminary operator schedule for the K8BF CW station is as follows:

CW Station Schedule - Field Day 2019		
DAY	Local TIME	OPERATOR
SAT 23	1400-1700	Dave N8NB
	1700-2000	Mark W8BBQ
	2000-2300	Bill WB9LBI
	2300-0000	Rod K8RR
SUN 24	0000-0200	Rod K8RR
	0200-0500	George K3GP
	0500-0800	Terry KB8AMZ
	0800-1100	Ray ND8L
	1100-1400	Ed K8IV

There is flexibility in this schedule - if your time slot is inappropriate, or if there are any others that would want to play CW on Field Day, just let me know (rttyfan@gmail.com) - and I will make adjustments so everybody can have BIG FUN !



Flex Station - Field Day 2019

Rick, K8CAV
Field Day Flex Station Captain



HERE ARE THE PRELIMINARY FLEX STATION CREW MEMBERS FOR FIELD DAY

Hey fellow PCARS members there's only TWO MORE SPOTS LEFT for those of you who want to operate at the Flex Station during Field Day! The 10:00 PM to midnight slot is open on 80 meters for anyone wanting to operate Phone, Digital or CW. From noon to 2:00 PM on Sunday Digital and CW can be worked on either 20 meters or 40 meters, whichever band the CW station is not on. We also have some slots open for those who want to help by logging. Contact me at k8cav.coms@gmail.com if you're interested and I'll get your name and call on the schedule. I'm hoping you'll step up so that Flex will have a very productive Field Day this year!

For those who want to operate digitally, we're doing a training session during the June Digital Special Interest Group meeting on June 4th where we'll be discussing the FT8 Field Day contest mode and also fldigi macros for Field Day.



Flex Station Schedule - Field Day 2019				
DAY	Local TIME	MODE	OPERATOR	LOGGER
SAT 23	1400-1600	40M FT8 DIGITAL	Jim AC8NT	Rick K8CAV
	1600-1800	20M DIGITAL	Steve K8SRR	Rick K8CAV
	1800-2000	20M DIGITAL	Amy KD8SKL	Wayne K8FF
	2000-2200	80M CW	Terry KB8AMZ	
	2200-0000	80M PHONE/ DIGITAL	OPEN	
SUN 24	0000-0200	80M PHONE	Deron N8XTH	
	0200-0400			
	0400-0600	80M DIGITAL	Rick KD8WCK	
	0600-0800	80/40/20M	Andrew KE8BWA	
	0800-1000	80/40/20M DIGITAL	Gene W8NET	John Lopez
	1000-1200	40/20M DIGITAL	Mike N8WCP	
	1200-1400	40/20M DIGITAL	OPEN	



20 Meter Station - Field Day 2019

Tom, WB8LCD, Chuck W8PT
Field Day 20 Meter Station Captains

HERE ARE THE PRELIMINARY 20 METER OPERATORS FOR FIELD DAY



20 Meter Station Schedule - Field Day 2019		
DAY	Local TIME	OPERATOR
SAT 23	1400-1600	Bob N8QE
	1600-1700	Chuck W8PT
	1800-2000	Greg KA8TOA
	2000-2200	Amy KD8SKL
	2200-0000	Paul N8QZ
SUN 24	0000-0200	Steve K8SRR
	0200-0400	Joe W8KNO
	0400-0600	
	0600-0800	Mike N8WCP
	0800-1000	Bill WB9LBI
	1000-1200	Bob N8QE
	1200-1400	Chuck W8PT



40 Meter Station - Field Day 2019

Ed, K8IV
Field Day 40 Meter Station Captain

HERE ARE THE PRELIMINARY 40 METER CREW MEMBERS FOR FIELD DAY

40 Meter Station Schedule - Field Day 2019			
DAY	Local TIME	OPERATOR	LOGGER
SAT 23	1400-1500	Ray KD8DFL	KD8DFL
	1500-1600	Ray KD8DFL	KD8DFL
	1600-1700	Ed K8IV	K8IV
	1700-1800	Ed K8IV	K8IV
	1800-1900	Melanie K8KSU	W8PT
	1900-2000	Melanie K8KSU	W8PT
	2000-2100	Parky KB8UUZ	K8KSU
	2100-2200	Chuck W8PT	K8KSU
	2200-2300	Chuck W8PT	K8KSU
SUN 24	2300-0000	Amy KD8SKL	WB8LCD
	0000-0100	Tom WB8LCD	KD8SKL
	0100-0200	John N8GIE	K8IV
	0200-0300	John N8GIE	K8IV
	0300-0400	Ed K8IV	KD8DFL
	0400-0500	Deron N8XTH	N8XTH
	0500-0600	Deron N8XTH	N8XTH
	0600-0700	Deron N8XTH	N8XTH
	0700-0800	Ray KD8DFL	K8IV
	0800-0900	John N8GIE	K8IV
	0900-1000	Ray ND8L	ND8L
	1000-1100	Ray ND8L	ND8L
	1100-1200	John N8GIE	K8IV
	1200-1300	Ed K8IV	KD8DFL
	1300-1400	Ray KD8DFL	N8GIE

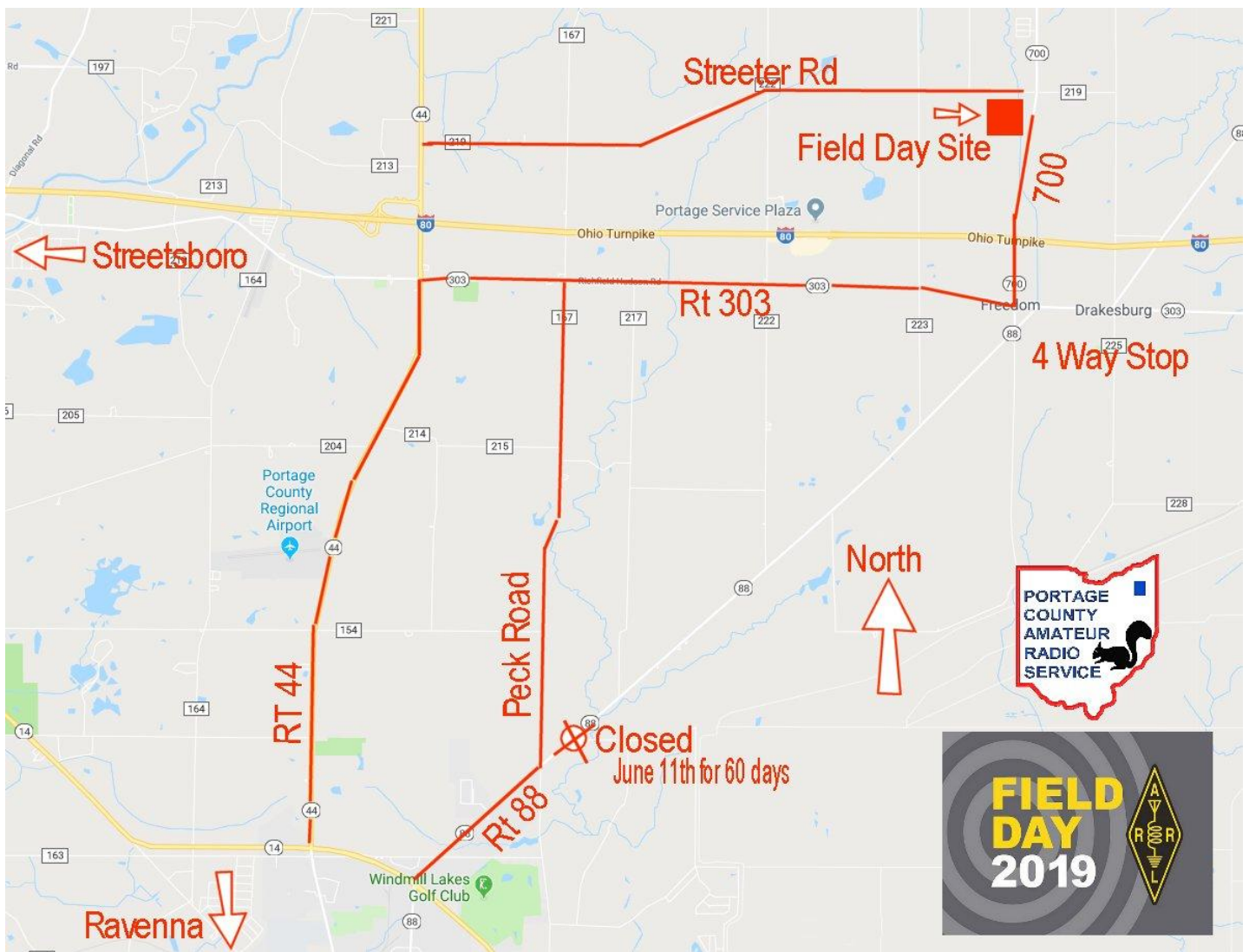


Field Day 2019 - Map

Here's a map showing where PCARS will be for Field Day 2019.

PCARS will be set up for Field Day at the Freedom Township Park located on State Route 700 and the corner of Streeter Road. That is just about 2 miles north of Route 303. See you there!!!!!!!!!!!!

And, ODOT strikes again - - The signs went up about a week ago - starting on June 11th, State Route 88 will be closed for 60 days to repair a bridge. The road will be closed between Beechwood and Cooley Roads. So, the best alternative route coming from the South would be Route 44 - North to State Route 303, then go East to State Route 700, There is a 4 way stop at 303 & 700. Turn left (North on 700) and go about 2 miles - the park is on your left. **Or** you can go north on 88, Left (North) on Peck Road to 303, then East on 303 to 700, left (North) on 700 to the Field Day Site.



Dead Electrical Dude - James C. Maxwell

Philip, KA4KOE



**Jimmy boy, wife Katherine,
and unidentified dog.**

This Month's Stiff: James Clerk Maxwell
Entered mortal coil: 13 June 1831
Assumed Room Temperature: 5 November 1879

The homely individual pictured is none other than James Clerk Maxwell, father of all that we hams hold sacred. Jimmy's mathematical formulas, which had as a foundation earlier research by Faraday on electricity and magnetism, predicted the existence of electromagnetic waves, i.e. radio. These formulas are quite complex, and even I, with a full year of college calculus under my belt courtesy of a questionable institution of higher learning (after all, they DID admit me, didn't they?), have difficulty digesting them. Here are the formulas below for your enjoyment-

$$1. \operatorname{div} E = 0$$

$$2. \operatorname{div} H = 0$$

$$3. \operatorname{curl} E = c \times dH/dt$$

$$4. \operatorname{curl} H = c \times dE/dt$$

*Where E = electric field strength,
 H = magnetic field strength,
 curl = rotation (or rate of change and vorticity),
 div = divergence,
 dH/dt and dE/dt are partial differentiations with respect to time.
 \times = multiplication*

Okay, you may ask, what does all this gobbledegook mean? Simply put, a changing electric current in a conductor will set up an expanding electromagnetic field propagating outward at the speed of light (this is the foundation on how transmitters work). Conversely, an electromagnetic field intersecting a conductor will induce a varying electric current (this is the foundation on how receivers work). A few years after Jimmy's death, all of this mess was proven to be true when a particularly bright German researcher, Heinrich Hertz, demonstrated the existence of radio waves via experimental means. Our hero was vindicated!

Maxwell was not a particularly good teacher at St. Andrews University in Great Britain. Maxwell did other important work on the orbital dynamics of Saturn's rings and developed the kinetic theory of gases. Maxwell's theories on electromagnetic radiation, however, were later considered to be the greatest contribution to science in the 19th century. Jimmy died quietly in bed, at peace with himself and his Maker.

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Free Exam Review Updated on ARRL Web Site



From the ARRL

The ARRL Exam Review for Ham Radio™ (http://arrlexamreview.appspot.com/?_sm_au=iVVPnLrK6QM7Fnbr)

Sign Up in Three Easy Steps

Step 1: Sign up to create an Exam Review account – Enter email address and password. If you have an ARRL website account you may use the same email and password but a **separate** Exam Review account is required.

→ CLICK HERE →
SIGN UP FOR AN EXAM REVIEW ACCOUNT

Step 2: Respond to confirming Email – Click the link in the email to activate your account (check spam folder as well). This account activation is **required** before you will be able to login.

Step 3: Login to Exam Review – Click the Login button at upper left and then on the Login page enter your account email and password and click the Login button.

has been updated in advance of the release of the ninth edition of The ARRL General Class License Manual for Ham Radio. ARRL Exam Review is a free online resource for use with current editions of ARRL License Manuals. The service can be accessed via a web browser, and uses the official examination question pools to construct chapter-by-chapter reviews. Upon completing study, Exam Review helps the license candidate take practice exams with the same number and variety of questions that he or she will encounter on exam day.

Practice tests can be taken over and over, scored in complete privacy, or even printed with an answer key. Exam Review includes quick feedback about the questions missed.

The update to Exam Review and the new edition General Class License Manual coincides with a new General Class question pool released earlier this year by the National Conference of Volunteer Examiner Coordinators (NCVEC). The new 2019 – 2023 General Class question pool becomes effective July 1, 2019 for examinations in the Amateur Radio Service. The 2015 – 2019 General Class pool remains in effect for exams given until June 30, 2019. ARRL Exam Review provides access to both the current and new General Class questions.

ARRL Exam Review for Ham Radio™

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Review questions for exams given July 1, 2018 to June 30, 2022
Technician Review

Review questions for exams given July 1, 2015 to June 30, 2019
General Review

Review questions for exams given July 1, 2019 to June 30, 2023
General Review

Review questions for exams given July 1, 2016 to June 30, 2020
Extra Review

Feedback

ARRL Exam Review for Ham Radio™

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General Exam Review

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GOA10. What is one thing that can be done if evaluation shows that a neighbor might receive more than the allowable limit of RF exposure from the main lobe of a directional antenna?

☐ A. Change to a non-polarized antenna with higher gain

☐ B. Post a warning sign that is clearly visible to the neighbor

☐ C. Use an antenna with a higher front-to-back ratio

☒ D. Take precautions to ensure that the antenna cannot be pointed in their direction

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See page 9-13
in The ARRL General Class License Manual 9th Edition

A federally licensed service, Amateur Radio (or “ham radio”) provides the broadest and most powerful wireless communication capability available to private citizens anywhere in the world. ARRL, the national membership association for Amateur Radio licensees in the US, offers books, online content, and other resources for Amateur Radio licensing, operating, and lifelong learning.

For more information about getting started in Amateur Radio, visit What is Ham Radio or call 800-326-3942 (800-32 NEW HAM). ARRL can help you find local radio clubs, classes, and testing sites.

PCARS Group IO

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

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

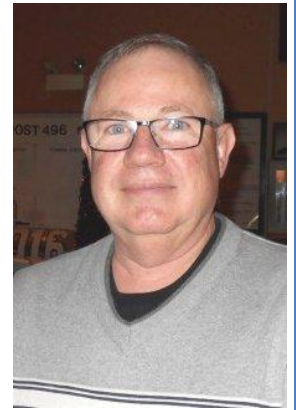
Two things every member should do.

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



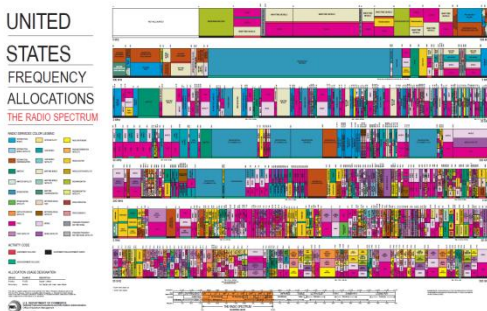
Hamvention® 2019 and Ham Radio Fun

Tom, WB8LCD



Another FANTASTIC Year at Hamvention®!

The past few years I've travelled with and stayed with Chuck, W8PT for Hamvention®. I always have a good time with, and enjoy Chuck's company. Although I consider Chuck to be fully engaged when it comes to Ham Radio, he also has several other hobbies and interests that make him an interesting guy to spend the weekend travelling with.



This year I probably spent less than I have in past years, but that's OK. I came home with a (free) Radio Spectrum Allocation Chart that is poster size. It's fascinating to me to look at all the services that use the radio spectrum and think about how much in dollars the Amateur Radio allocations must be worth! At the Carole Perry's Instructors Forum I got

to meet Dr. Tamitha Skov, WX6SWW the 'Space Weather Woman' who had a very interesting presentation on the Mars Generation. Later, thanks to DX Engineering I got to have my photo taken with her!



So, now onto what I really wanted to talk about: County Hunting. My second freebie from Hamvention was given to me by the folks at the Mobile Amateur Radio Awards Club (MARAC). It's a map of the United States broken down into all the counties in every state. There are 3077 of them. How many have you worked?

From their flier, <https://protect-us.mimecast.com/s/MqahCzp5vqcykW4h4-JJC?domain=marac.org> is the official website of the MARAC club. Next up is <https://protect-us.mimecast.com/s/6uArCADO8uPwpEt8ZdOZ?domain=dxawards.com> here you will find the official website of the CQ Magazine's USA County Award rules. You'll also want to check out <https://protect-us.mimecast.com/s/3bdTCBBpN1skwW8uNmTxg?domain=countyhunter.com> and <https://protect-us.mimecast.com/s/TegtCDkr1wfWEY3FZBDZq?domain=ch.w6rk.com> (a spotting site).



Working all counties is not something you might do in a weekend. (I've worked almost all states in a weekend during the ARRL Sweepstakes) This is just a bit harder than that. I'm guessing it's going to take you years. But, it can, and has been done! It's a good reason to get on the air everyday and make a couple Q's. The award starts at 500 confirmed Q's and goes on up to all 3077.

The hardest counties to get in the US include: Kalawao, HI; Tillamook, OR; Sullivan, NH; Nantucket, MA and Fulton, NY. You could be a real hero putting one of those counties on the air! Even in OHIO there are some counties that are needed more than others? Harrison, Henry, Defiance, Morgan, Mercer, Vinton and Hardin. Go there, put your spot out on the County Hunters spotting page, and I'm sure you'll be making plenty of Q's.

I've made it my personal goal to have at least 1 HF QSO every day from now on. Also, to keep better records (logs) of my on-air activities. If I'm fortunate enough to live another 10 years, that's 3650 Q's more than I might have had. I'm pretty sure that 1 a day will lead to many days with more than 1. I'm not going to beat myself up if I miss a day or two, but by setting the goal, I hope I'll be able to do more of what I want to do, and not just burn myself out on doing all the stuff I have to do!

Ham Radio has many activities that you can involve yourself in: Worked All States, DXCC, County Hunters, **Ohio State Parks On the Air**, Field Day, Sweepstakes, State QSO Parties, Islands on the Air, Special Event stations, rag-chewing, nets, maybe even a 'Breweries on the Air' sometime in the near future. The point is, **get out there and get on the air**. Even if you enjoy the technical part of the hobby, the end-game of the technology is to see if you can use it to make Q's, and can you make more Q's than the other guy!

Put some '**BIG FUN**' in your life, put your butt in the chair and get on the air!



PCARS
www.portcars.org



PCARS Custom Coffee Cups - Limited Edition

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

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

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

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



Portage County Amateur Radio Service



K8BF



2018 Hamvention® Club of the Year

Getting Loaded (Antenna Wise, Anyway)

Dan, KB6NU



A couple of years ago, I homebrewed a “Cobra” antenna. (<https://www.kb6nu.com/yet-another-new-antenna-the-cobra/>) It’s a doublet antenna, meaning that it consists of two elements connected to a center insulator, where it connects to a feedline. The unique thing about the Cobra antenna is that each element consists of three parallel conductors connected in series.

My antenna uses a lightweight, three-conductor rotor cable that used to be available from Radio Shack. The feedline is 450 Ω ladder line that connects to an antenna tuner to give me multi-band operation.

Connecting the conductors in this way is supposed to provide “linear loading.” Somehow, running the conductors in parallel is supposed to increase the antenna’s effective length. My antenna is only 73-ft. long, but it easily tunes up on 80m.

The ARRL Antenna Book has a short section on linear loading. It says that linear loading is a “little understood” alternative to inductive loading that can be applied to almost any type of antenna. Furthermore, “...it introduces very little loss, does not degrade directivity patterns, and has low enough Q to allow reasonably good bandwidths.”

As I mentioned, I’ve been using this antenna with good results for a little more than two years now. When I first put it up, someone mentioned the concept of linear loading to me, but not being an antenna guru, I didn’t ‘give it much thought. About a week ago, though, I ran across a link to the page Short Ham Antennas for HF (<https://www.hamradiosecrets.com/short-ham-antennas.html>). That got me thinking about the topic again.



This page describes a way to build a linearly-loaded dipole antenna with a feedpoint impedance of approximately 35 Ω . This allows you to feed it with coax instead of the ladder line that I use. The author uses 390 Ω ladder line for the elements. He says it’s commonly available, but I don’t think I’ve ever seen 390 Ω ladder line. You could probably use 450 Ω ladder line by adjusting the element lengths a little.

At that point, I started Googling. The next linear-loaded antenna design that I ran across is a design from M0PZT (<http://www.m0pzt.com/40m-linear-loaded-dipole/>). He built his elements from some sturdy wire and homebrewed spacers made from PVC pipe. He’s used this design for the 40m elements of a fan dipole covering the 40m, 20m, 15m, and 12m bands. Only the 40m elements are linear-loaded.

I also found a design for a linear loaded vertical antenna for 40m and 80m (<https://www.qsl.net/pa3hbb/ll.htm>). This antenna is only 7.736 m, or 25.4 ft. tall. Of course, it requires a good radial system to work well, but it will work a lot better for DX than a low doublet or dipole.

Finally, there’s an eHam discussion on linear loading <https://www.eham.net/ehamforum/smf/index.php?topic=84418.0>. Unlike a lot of eHam discussions, this one is quite civil. It’s worth reading if you’re interested in the topic. So, if you’re thinking of getting loaded, errrrr, I mean loading your antennas, here’s a method for you to consider. It works!

When he's not teaching ham radio classes, Dan blogs about amateur radio, writes exam study guides (www.kb6nu.com/study-guides), and operates CW on the HF bands. You can email him at cwgeek@kb6nu.com.

PCARS VE Test Sessions

Tom, KB8UUZ
PCARS VE Team Liaison

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

June 1st, August 3rd, October 5th

Saturday, June 22nd at the Field Day site - 4 pm



What to Bring to the Testing Session

- \$15 is the current test fee. We prefer the exact amount in cash or a check made out to: **ARRL-VEC**
- A government photo ID (**driver's license or state ID card preferred**).
- Your Social Security Number or FCC Federal Registration Number. We are required to submit either your Social Security Number (SSN) or your FCC Federal Registration Number (FRN) with your application. If you are upgrading, your FRN is on your current Amateur Radio license.
- A pen (black ink) and pencil (we can loan you either or both)
- **If you already have an Amateur Radio license: 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.

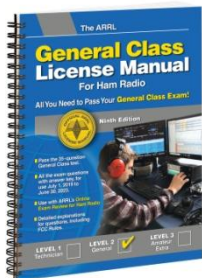


Expired License? **Original and a copy** of your expired Amateur Radio License - you must take and pass Element number 2 to re-instate your license.

Any Questions? Contact: KB8UUZ@gmail.com

This note came in from our PCARS member in Little Rock, AR: **Daryl Stout, WX4QZ**, UALR Ham Radio Club VE Team Liaison

A reminder to folks that for those wanting to upgrade to the **General Class** license, that the current question pools and resulting exams for it, **EXPIRE** on June 30, with **NEW Question Pools and exams taking effect on July 1**. If they plan to test **BEFORE** July 1, they can test on Saturday, June 1, and PCARS is doing a test session during Field Day, on June 22 at 4 pm at the Field Day site. But, you won't get to test for the General Class exam until **AFTER** July 1. Go to www.ncvec.org, and download the NEW Updated 2019 General Class Question pool, with errata. Otherwise, you're going to be in for a rude awakening on exam day. It's amazing how many folks show up to an exam session, having studied the **WRONG** material...and they wonder why they failed the exam!!



The Amateur Extra Class Question Pool changes July 1, 2020 -- then it takes 2021 off... and starts again with the Technician Class Exam Question Pool changing on July 1, 2022.

Conversation - Try a Different Verb

Brian, N9ADG
ARRL Contest Update



"X Is **Killing** Y" - We've all heard it. I'm sure that everyone has their own pet X. Add whatever sub-facet of our hobby you see fit under column Y. Sometimes what was once was a huge issue doesn't mean so much now. For example, if you weren't around in the late 1950's, you might wonder why sideband is even on the list. The 'competition' between AM and SSB was such a big deal we still collectively remember it. Keyers were even controversial at one time.

Sideband
Keyers
Memory Keyers
Computers
Packet Spots
Cellular Phones
The Internet
Automated Data Stations
HOAs
Echolink
CW Skimmers
Lack of Sunspots
Millennials
No-Code Licensing
Video Games
RFI
FT8/FT4
DMR
Tech Digital HF Privileges
Remote Stations

Amateur Radio
Contesting
DXing
Repeaters
UHF/VHF usage
Amateur TV
NTS
SSTV
HF Nets
DXCC Honor Roll
Phone Patches

X is killing Y

Sometimes the impact of something isn't really felt until everything has just... changed. How many 1985 repeater users understood the impact that cellular phones would have?

You'd think that SSTV would be "dead," killed by globe-spanning networks and all SSTV capable computers also being on the Internet, but non-SSTV operators still seem to avoid 14.230 - 14.233 MHz even in contests.

CW Skimmers were sure to lead to the demise of contesting about ten years ago, but has instead turned into a tool that gives smaller stations better opportunities to be worked.

FT8 is in the spotlight nowadays as a "disruptor" of all we hold dear. But last January's ARRL VHF Contest saw the largest number of participants in almost two decades, directly attributable to new participants using FT8 on 6 meters. Those new FT8 contesters are having way too much fun to worry about how they might be doing it wrong.

Factors that are "killing" Amateur Radio in general aren't doing that good a job. The [absolute number of licensed Amateurs](#) is the highest *EVER* in the U.S. Over half the U.S. population of Amateurs are Technicians. So something *is* attracting new people to Amateur Radio, but they're not necessarily making it to HF contesting.

Changing is a more appropriate word to describe the overall effect, because in some cases the X ended up enhancing the Y, in others, diminishing.

But **changing** is a harder word to use than **killing**. "Killing" implies that the activity that we enjoy is not going to exist because of some external factor that is maybe beyond our control. "Changing" implies that our favored activity still exists, but we haven't necessarily changed along with it.

That's all for this time. Remember to send contesting related stories, book reviews, tips, techniques, press releases, errata, schematics, club information, pictures, stories, blog links, and predictions to contest-update@arrl.org



Home Project Jams Cars & Garage Doors

Sudden and mysterious reports of car key fobs and garage door openers not working started back in late April in a **North Olmsted, Ohio** suburban neighborhood, befuddling locals as to what could be the cause. It was like something out of the *Twilight Zone*, and it took weeks to find out what was actually happening. On the surface, the story featured by the New York Times this weekend had all the makings of a great Spielberg movie. Residents in North Olmsted and nearby Fairview Park were having problems unlocking their cars and getting their garage openers to work. Nearby was the NASA Glenn Research Center, which some thought may have had something to do with it.



“Garage door repair people, local ham radio enthusiasts, and other volunteer investigators descended on the neighborhood with various meters,” the May 4 article by Heather Murphy recounted. “Everyone agreed that something powerful was interfering with the radio frequency that many fobs rely on, but no one could identify the source.”

Officials and investigators quickly figured out it had to be a mystery radio frequency somewhere locally interfering with the frequencies used by the neighborhood electronics, but they struggled in their search to find a source. There was also a team of local amateur investigators, including ham radio operators and a television repairman who walked around with a signal detector. After weeks of the weird issues, the source of the interfering frequency was finally found.

From the New York Times:

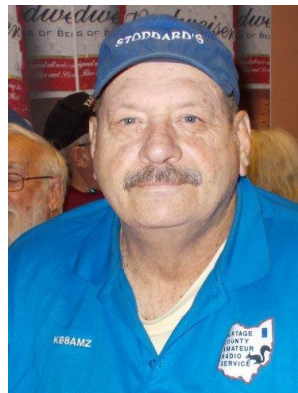
Officials from the cable company and AT&T joined the search for answers, and on Thursday, the Illuminating Company, a local electric utility, dispatched inspectors to investigate. “They began by shutting off the power in the places where they detected the strongest reading for interfering radio frequencies,” said Chris Eck, a company spokesman. But even after shutting off power on an entire block, the overpowering frequency persisted. “It’s like trying to talk to someone at a nightclub,” said Adam Scott Wandt, a professor at John Jay College of Criminal Justice in Manhattan, in explaining how a strong frequency can derail a weak frequency.

By Saturday afternoon, City Councilman Chris Glassburn announced that the mystery had been solved: The source of the problem was a homemade battery-operated device designed by a local resident to alert him if someone was upstairs when he was working in his basement. It did so by turning off a light. “He has a fascination with electronics,” Mr. Glassburn said, adding that the resident has special needs and would not be identified to protect his privacy. The inventor and other residents of his home had no idea that the device was wreaking havoc on the neighborhood, he said, until Mr. Glassburn and a volunteer with expertise in radio frequencies knocked on the door. “The way he designed it, it was persistently putting out a 315 megahertz signal,” Mr. Glassburn said. That is the frequency many car fobs and garage door openers rely on.

The device’s battery was removed, the signal stopped, and all who were involved breathed sighs of relief. Nothing nefarious, no weird NASA experiments, no aliens. An entire neighborhood filled with slightly frustrated and likely hopeful suburbanites wondering if they were in the presence of a real-life E.T. got their answer in the form of a basement dad who just wanted to know when other people were home, by the looks of it. Incredible. I just want to know if this guy goes by “Doc” and keeps a DeLorean parked the garage. It sounds like he has ideas.

New England QSO Party 2019 Follow Up

Terry, KB8AMZ



Typically, when I work a contest with the PCARS Contest Team I am scanning the band, most of the first few hours, for the call sign section number or that operator that identifies the contest in his/her CQ announcement, while the phone part of the team is busy making contacts.

I don't know why both parts of a given band don't work in unison during a contest but they don't. Typically, there are at least two contests every weekend but typically more than five contests all running at generally the same time. There are suggested spots of bandwidth to use for the particular contest, but most contest operators seem to discount this and use the entire CW portion of the band. It's the same on the phone portion so there is nothing unique about the operating practices of CW operators contesting.

Other than Field Day contesting using Morse is a matter of searching the band for the particular contest the team is working. Quite often I hear other testers most of the time. At times it seems like all I hear is the contest I am working but usually it's a small pileup that may last 15 minutes then nothing for an hour but other contests.

Sometimes, out of necessity, I don't start at the start time of the contest due to a previous schedule. Sometimes I can let the scheduled call know that I won't be available and work the contest from the beginning start time to the end. More often than not I could arrive after the start time because it seems that most of the stations I want to contact don't begin to appear on CW until 4 hours into the contest.

This Saturday, May 4th, was one of those Saturdays that I reported to the clubhouse to begin at the start time. This was a first time experience for me and very thrilling to boot. I began about 2 minutes after the start time with my first contact on 40 meter CW. Unheard of in the past 4 years of contesting with the club team. I kept hearing "NEQP" on the CW portion of the band in the suggested bandwidth. I wondered how long this would last. I was taking full advantage of this phenomenon since it is virgin territory for me. Another new quirk. The New England stations were adhering to the suggested operating bandwidth frequencies. I don't know how long this last before I began hearing too many 'DUPES' and relinquished the 40 meter station to a phone operator so I could try some 20 meter and later 80 meter CW, but as the little Asian kid in Mash used to say, "It work long time". A repeated highlight of this contest was working PCARS member K1ZZ, Dave Sumner from his home QTH on two bands again this year. This contest is my 2nd year of working Dave on two CW bands, for the same contest.

Another new item was this was the second weekend that we had very little noise floor noise on the bands we worked. I don't think the level went above S1 where in the past the noise floor was S6 - S7 for most of the weekend. Contesting the past two weekends has been more opportunistic for the team to hear the weaker stations and work them.

I know the band condition Saturday was a fluke. Sunday was typical but, after having a great Saturday, Sunday in comparison was a loser. I only worked 15% of the contacts on Sunday that I worked on Saturday. Many of the stations heard were duplicates from Saturday. Saturday's condition for 20 meters was much better than Sunday. Sunday the experience of QSB (fading signal) was ever apparent. Sometimes a station would get halfway through their call then poof they were gone. If I stayed on the same frequency for a few minutes that station might re-appear. All the bands, usually 20 meters and lower, have been fading in and out for more than half a year now. Typical time to make a contact is around 2 minutes. That probably explains why I am hearing and working a lot of fast senders more now than in past years. Good for me is I can copy those fast senders. I amaze myself at my copy speed at times. I do have moments where everything I hear is garbled junk, yet other times I hear every character.

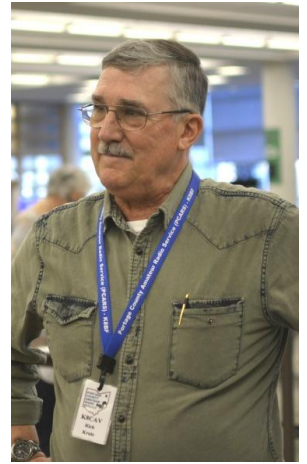
Have I told you lately? I really like this club. Kilo-eight-Big-Fun.



Comms Volunteers Needed

Rick, K8CAV

Portage County Coms Unit Commander



Communicator Volunteers needed for the Headwaters Adventure Race

The Portage County Park District will be holding its annual Headwaters Adventure Race on Saturday July 13th 2019 and has again asked for communications volunteers to staff the course. The Headwaters Adventure Race is a three course event consisting of a two mile run, a ten mile bicycle, and a five mile canoe race. Communicators will staff key points on the course, and a land sweep and canoe sweep to keep the Race Director and her staff informed about events on the course. Communicators will also provide any emergency communications on the course in the event they're needed.



This is a great way to polish the skills needed to operate in a structured net for incidents or events you may be called on to participate in. Don't be put off volunteering if you're new to this sort of thing. We'll pair you up with a more experienced communicator so that you can learn these communications skills too.

We will be writing a communications plan for this event and sending it to all communicators. We'll brief it on-the-air prior to the event and also provide a hands-on training event for anyone who may need help programming their HT's or any other help needed. Please consider volunteering for this event and contact me at k8cav.coms@gmail.com if you can volunteer. Thanks!

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: **Paul, KE8EGF** or e-mail him at: phyland@neo.rr.com

Youth DX Adventure

Tom, WB8LCD



David Kalter, KB8OCP, Youth DX Adventure

At our May meeting PCARS member Jim Storms, AB8YK – came over from the Dayton area to make a presentation on the **2019 YDXA** trip. The YDXA (Youth DX Adventure) trip will be on-the-air in Curacao from July 14 - July 19, operating from the world famous PJ2T contest station.



AC8NT presented the YDXA donation to AB8YK

The YDXA is an outstanding opportunity for new, young Ham Radio Operators to get the thrill of being a DX station. I can tell you from personal experience, the thrill will be there for them! PJ2T is an outstanding venue for a program like this.

Once again, PCARS made a donation to the YDXA in support of their program and the good it does for ALL Ham Radio Operators. The donated funds make the trip something that any youth who meets the criteria and is selected can participate in, regardless of the financial ability of their family to pay for it. For some kids, I'm sure it could be the biggest adventure they ever get to participate in!

Kudos also to Geoff Howard, W0CG / PJ2DX, and the other members of the Caribbean Contesting Consortium for making the PJ2T station available to them. The last year has seen many major improvements at PJ2T and I'm sure it will provide some outstanding Ham Radio Fun for the members of the 2019 Youth DX Adventure.

PCARS is a Fantastic club. Our "outreach" takes us beyond our own membership and influences individual hams and the hobby in general in a positive way. Every one of our members can be proud of the organization that they belong to and support!

Hamfest Calendar

06/01& 02/2019 (Sat & Sun) - **Breeze Shooters Amateur Radio Club** - Location: Big Butler Fairgrounds - 1127 New Castle Road - Prospect, PA 16052 - Website: <http://www.breezeshooters.org> - Sponsor: Breeze Shooters Amateur Radio Club - Public Contact: Cathy Heiles, KB3OYS - 134 Easley Road Pittsburgh, PA 15237 - Phone: 412-600-3846 - Email: kb3oys@breezeshooters.org

08/03/2019 - **Columbus, Ohio Hamfest** - Location: Aladdin Shrine Center - 1801 Gateway Circle - Grove City, OH 43123 - Website: <http://www.columbushamfest.com> - Sponsor: Voice of Aladdin Amateur Radio Club - Public Contact: John Lehman, K8PJ - 7415 Hagerty Road Ashville, OH 43103 - Phone: 614-571-5179 - Email: k8pj.john@gmail.com

09/22/2019 - **Cleveland Hamfest and Computer Show** - Location: Cuyahoga County Fairgrounds - 164 Eastland Road - Berea, OH 44017 - Website: <http://www.hac.org> - Sponsor: Hamfest Association of Cleveland - Public Contact: Glenn Williams, AF8C - 4134 Stoney Ridge Road Avon, OH 44011 - Phone: 440-934-5566 - Email: af8c@arrl.net

Swap-N-Shop

FOR SALE: My son in law's mother passed away a month ago. He is getting her home cleaned out and ready for sale. There are five or six **10 foot light duty tower sections** stored that have never been erected that the family wants to sell. \$75 for all.

Contact Al WA8CCU - email: radioflyer73@roadrunner.com [08/02/19]

FOR SALE: Two beams for sale. These were made *BEFORE* MFJ started making Cushcraft antennas. **Cushcraft Ten-3** Three element **10 meter beam**. Cost new \$299.95 - **Sell for \$150.00**. This beam helped me make 7,651 ten meter contacts. **Cushcraft A505S** - Five element **6 meter beam**. Cost new \$199.95 - **Sell for \$90.00**. This beam snagged me 4,900 contacts



and 366 different grids on 6 meters. These beams were on a tripod on my roof. Great shape & ready to use. Had the roof replaced and took down the antennas. Will be putting up tower and Opti-Beam antennas - if the ground ever dries out.....

ICOM IC-7610 - Brand New, *still in the box*. Decided to upgrade antennas instead of radio. Un-opened box **\$2650**.

RC-28 - Remote Encoder for the IC-7610 to easily operate the second VFO - Brand new - **\$225**

8 Switch Memory External Keypad for the IC-7610/7850/7851. Instant access to the 8 stored outgoing messages. Made in Germany by DM2RM. Brand new - \$65

Contact Tom "Parky", KB8UUZ at kb8uuz@gmail.com [09/02/19]

FOR SALE: **Cushcraft A505S** - . 5 Element 6 Meter beam. Purchased new in summer, 2016. Due to come down from my tower on June 8th. Asking \$100.

Contact: John, KD8MQ at KD8MQ1@gmail.com or call (330) 936-5021 [09/02/19]

FOR SALE: "ChannelMaster" 50' steel telescoping antenna supports - Two (2) each. Good condition, never used, stored in garage. Five 10.5' sections each, with hardware. Guy rings attached. No shipping. U-pick-up. \$50.00 cash for pair. Location: Cuyahoga Falls.

Contact: Bob, NT8K (330) 923-2542 [08/02/19]

FOR SALE: **Flex Radio 5000A** with second receiver Excellent condition Original owner Original and upgraded FireWire cables \$1150.00 **Palstar DL2K Dummy Load** with wallwart. Original model with antenna connection on the front. \$250.00 **Yaesu FT-8800R** Mint condition. Never mobile used in shack for 3 months \$225.00 **CN-801HP Power and SWR meter**. Older model with little use \$90.00 **W2IHY 8 band Audio Equalizer and noise gate**. **W2IHY EQPlus wallwarts** for both units and a custom cover. Cable for Icom radio \$375 **Palstar SP30 speaker**. Mint condition \$85.00 **Logikey Model K-5** Mint condition. Never used \$150.00 **ZN-4A Key**. Mint condition. never used \$225.00 **MFJ 929 IntellTuner automatic antenna tuner** 200 watts SSB/CW excellent condition used for 2 months. \$165.00 All sales cash and no trades.

Contact Russ K8QF- Phone 330-906-2880 or email: russ32458@aol.com [07/02/19]

FOR SALE: **Icom 756 Pro III** - With box, manual, microphone and power cord. Selling since I upgraded to a 7600. Asking \$1000.00 or best offer - let's talk.

Contact Richard KA8OAT - Phone 330-506-7068 or email: RCMBASS@AOL.COM [06/02/19]

FOR SALE: **Bird Watt Meter Slugs:** 2500H (2500 Watts 2-30 MHz) \$110. 5000H (5000 Watts 2-30 MHz) \$125. Any of the following for \$50.00 - 5A (5 Watts 25-60 MHz) - 10A (10 Watts 25-60 MHz) - 50 D (50 Watts 200-500 MHz) - 500E (500 Watts 400-1000 MHz). **Alpha 77DX Amplifier** with all of the Dick Byrd upgrades. These upgrades include the following; higher voltage plate transformer providing 4300 Volts idle, 7500 Volt rectifiers, 5000 Volt 35 µf filter capacitor, 15,000 Volt DC blocking capacitor, wide spaced loading capacitors like are used in the 77SX, all new step start components, large 10x38mm fuse holders, all new electrolytic capacitors on timer & QSK boards as well as LED lighting for the meters. This amplifier has ZERO HOURS since being upgraded as it was my back-up amplifier. **AEA MM-3 MORSE MACHINE** Memory Keyers in mint condition. These are the best memory keyers ever made with speeds up to 99 WPM. They provide two banks or 10 memories each, automatic serial number insertion for contesting, work as a random code/word generator, QSO simulation where you can have a practice QSO with the keyer and also contest QSO simulation as well. They will work from 12 Volts DC as well as the included AC adapter. Includes manual \$200 each. **ICOM IC-718** 160-10 meters, Mars Mod, full output, few minor scratches, power cord & microphone. \$400.00

If not sold prior to Breeze Shooters Hamfest all of these items will be available at Breeze Shooters.

Contact James. KD8VT - 330-206-4909 [09/02/19]



PCARS
www.portcars.org



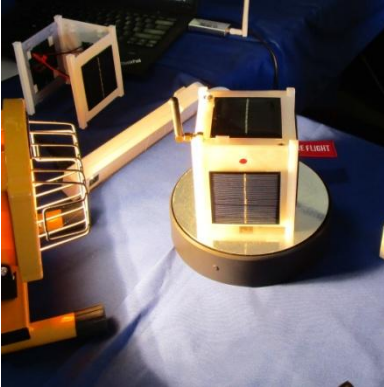
CubeSat Simulator and AMSAT Satellite Work

Jim, AC8NT



CubeSat Simulator

While at Hamvention I visited the AMSAT booth for a look at what's new. I saw their new CubeSat simulator used as a tool for educational outreach. It was pretty interesting. They had it mounted on a rotating table with a bright light the simulated the sun shining on it photocells. It transmitted data using the AMSAT data protocols to a



laptop equipped with a SDR-RTL. Using standard decoding software you could see the data values send from the CubeSat. This looked like something that we could use at Maker Faires and other events to get kids interested in ham radio and electronics. It turns out the cost of the project is about \$400. A little rich for some of us to invest. Time to engineer a more cost effective design.

The AMSAT simulator is based on the popular Raspberry PI single board computer. It has a custom RF board, custom battery management board and a custom sensor board. These boards are mounted in a 3D printed enclosure equipped with inexpensive solar cells.

I downloaded the software and took a good look at the program. I found it would be easier and cheaper to use available components to build a similar functioning model. My goal is to have it completed in the next four weeks. I will be using the Sparkfun pHat Qwiic interface boards for the sensor interface; and environmental Qwiic interface and Spectral sensor for collecting data. A Sparkfun battery babysitter will be used to support the solar cells and LIPO battery. All this will be connected to a PI Zero board. I have a 70 cm data transmitter module I will use for the project. 3D parts will be printed at Case. Total cost with what I have on hand will be under \$100. Code changes should be quickly made to the AMSAT program.

Why do we want to do this? At almost all the Maker Faires we have attended, we have used a SDR dongle and some common RF control devices including key fobs and toys to display RF signals on a laptop. It has been a winner. Displaying RF signals is just plain cool. Also showing how hams can get involved with satellites is introducing potential hams to a more modern use of ham radio. Computers, software, a Raspberry PI and sensors make an ideal project to generate interest.



AMSAT Telemetry Satellite Data

I am installing the Fox Telem software on my portable station support laptop so I can decode data from AMSAT satellites. I have the antennas required and am working to get my rotors to work on 12 volts. Soon I will be able to track and decode data from these satellites. This will allow me to work from temporary stations at Maker Faires and other outreach events. It will be great to show live data from a satellite that anyone with the inexpensive equipment can receive and understand. I watched data being received at Hamvention and lots of hams standing around with smiles and questions about ham radio. Some of the SSTV pictures were amazing.

I would love some help on these projects. Please let me know if you would like to help with this projects. More information can be found at: <https://countingfromzero.net/amsat/CubeSatSimPaper.pdf>

PCARS Flex Net - June 12th

Deron, N8XTH



The PCARS Flex Net is a monthly net for PCARS members and all other hams and will be using HF, 2 meter simplex or 2 meter SSB.

Flex Net in June will be on Wednesday, June 12, 2019 at 8:00 pm eastern. This month's net will be on 80 meters. We will announce the frequency via a QST e-mail to go out prior to the net. Also, we will have someone on the 146.895 repeater to help anyone find the net.

If you would be interested in being a Net Control station for the Flex Net please e-mail Deron N8XTH at deronmb@gmail.com

The Squirrel Buro for QSL Cards from the Flex Net is open and ready for your QSL cards. You can find the buro box located in the VHF room of the club site at any club event or at any club meeting.

Below is the net schedule, (subject to change):

12-Jun-2019	80m
10-Jul-2019	2m FM Simplex
14-Aug-2019	40m
11-Sep-2019	20m

9-Oct-2019	15m
13-Nov-2019	10m
11-Dec-2019	20m

There will be two parts to the net. The first is a quick check in and social time. (This net is not designed to take the place of the weekly Thursday night nets on 146.895.) The second part will be devoted to the PCARS A-to-Z Award where you will be given the chance to work different PCARS members in order to earn the award. (Information on the award was in the April newsletter.)

If you are a PCARS member participating in the A-to-Z net, the only requirement is that you provide a QSL card to each and every member that requests a QSL card from you. The new PCARS "Squirrel Buro" will hopefully help to defray the cost of exchanging cards by providing members a free way to exchange QSL cards at their convenience.

More than anything, this net is hopefully going to get more people on the air more consistently, help other members earn their first HF or SSB wallpaper, and help to put more **FUN** into amateur radio!



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



Charlie the Tuner's HF High-Lites

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



Greetings to all DXers:

May was really rainy here in Parkman. I'm sure that others can say the same about their QTH. I was hoping that we would not get much rain since last year saw my yard become a muddy mess. The ground has firmed up somewhat but our clay soil won't take too much rain before it becomes a sticky, gooey, boot sucking ooze. I actually lost a boot walking in my yard last year. You couldn't tell now but boy was it a wreck of an area around one of my towers. I really envy those of you who have well drained soil.

With the work that needs to be done putting up two new towers, I'm hoping that the rains will not be numerous so that the ground stays somewhat firm. But firm or not, I will have towers up and antennas on them so that I can get back on the air, working DX and contests. And speaking of DX, let's take a look at what you might be able to work in the next few months.

As always, thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, the AB5K's AR Cluster Networks, NJ1Q & W1AW, NG3K & ADXO, W3UR & The Daily DX, K4ZW, WB6RSE, N7NG, K8GG, K8GI, K8YSE, W8GEX & 60m DX News, W9ILY, CX3ZAN, DL1SBF, DL7UXG & The DX News Letter, DxCoffee.com, DXNews.com, DX-World.Net, F5NQL, F6AJA & Les Nouvelles DX, I1JQJ/IK1ADH & 425 DX News, OZ6OM & 50 MHz DX News, Sixitalia Weekly, and VA3RJ & ICPO for the following DX information.

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

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

5R, MADAGASCAR. (Reminder) Giovanni, IZ2DPX, will be active as 5R8PX from Nosy Be Island (AF-057), Madagascar, between, August 3-17th. Activity will be on various HF bands using SSB and the Digital modes. Equipment is an IC-706 (w/100w) into a vertical. QSL via IK2DUW/HE9ERA, direct, by the Bureau, Clublog or LoTW. For updates, watch: <https://iz2dpx.jimdo.com>

5W, SAMOA (Update/Reminder). Operators Gus/CX2AM & XYL Maby/CX3DDB, Bert/CX3AN, Martio/CX4CR and Rainer/CX8FB, members of the Uruguay DX Group, will be active as 5W0H from the Island of Upolu (OC-097), Samoa, between June 1-10th. Activity will be holiday style on 80-6 meters, running 2 stations with Spider beams and dipoles, using mainly CW and SSB. QSL Manager is EB7DX. ADDED NOTE: The week after their Samoa operation, Rainer and Gus will continue their activity running mobile from somewhere in New Zealand (ZL).

5W, SAMOA. Operators Hrane/YT1AD and Dusko/ZL3WW are currently active as 5W7A from Upolu Island (OC-097). The length of their stay is unknown at this time, but they are there preparing for the ZK3A DXpedition which takes place between October 2-11th (See ZK3 below). QSL 5W7A via YT1AD.

8Q, MALDIVES. Gil, IZ2DLV, will once again be active from as 8Q7GB Nika Island in the Maldives between August 6-18th. Activity will be holiday style on 80-15 meters using CW, SSB and FT8. QSL via LoTW.

9G, GHANA. Matteo, IZ4YGS, will once again be active as 9G5GS from Sanzule, West Takoradi (Western Region), Ghana, between June 7th and July 2nd. Matt informed OPDX back in December that he travels to Ghana almost every month for work reasons. Activity will be limited to his spare time. He is usually on "almost every evening" on 160-6

meters; Setup FT-891, small 300w amp and vertical antenna, using mostly FT8 and SSB. On FT8 (Fox- Hound Mode) the suggested frequencies are: 3567, 7056, 10131 and 14090 kHz. QSL via LoTW, IZ4YGS direct or eQSL.

9N, NEPAL. Yuki, JH1NBN, is once again active as 9N7BN from Kathmandu until June 4th. Activity will be limited to his spare time due to work on 80-6 meters using CW and FT8. QSL 9N7BN via JH1NBN direct to: Yuki Yosuke Uchiyama, 924-4, Yokokawa-cho, Hachioji, Tokyo, 193-0823, Japan.

9X, RWANDA. Harald, DF2WO, will once again be active as 9X2AW from Kigali between November 4-16th. He is currently preparing his 160m antenna and will build a Hexbeam with Bamboo Sticks for working on 20/17/15/12/10 meters using mainly Digital modes (FT8, PSK31, JT65 and RTTY), CW and SSB. QSL via M0OXO or his OQRS.

9U, BURUNDI. Francesco, IV3TMM, will once again be active as 9U3TMM from Bujumbura (WW Loc. KI46QP) between August 31st and September 17th. Activity will be on 60-6 meters using SSB, RTTY and FT8. QSL via IV3TMM, by the A.R.I. Italian Bureau, ClubLog or LoTW.

CARIBBEAN TOUR (FS/PJ8). Satoru, JI1DFO, will be on holiday with his XYL in the Caribbean during the month of June. His tentative schedule are from Saint Martin (FS) and Sint Maarten (PJ8): June 13-15th -- From Dutch Sint Maarten (NA-105); signing PJ8SK; QTH will be at Bob's Baywatch Villa, 28 Beacon Hill Rd. June 16-18th -- From French Saint Martin (NA-105); signing FS/AG5CR; QTH will be at Le Temps des Cerises Hotel Beach, Grand Case. Activity will be on 40-17 meters using FT8 only. Equipment is an IC-7300 with a amp(~300W) into 8 meter long vertical+ ATU or 17 meter delta-loop+ ATU. QSL via JI1DFO, LoTW and ClubLog's OQRS. Look for updates on his QRZ.com pages.

CY0C SABLE ISLAND DXPEDITION (Update). Operators Dan/WA4DAN, Jay/K4ZLE, Will/AA4NC, Lee/WW2DX, Pat/N2IEN, Lou/N2TU, Bill/K5DHY and possibly more "To Be Determined" (TBD) will be active as CY0C from Sable Island (NA-063) between October 5-12th, 2020. Activity will be on 160-6 meters using CW, SSB, FT8, EME and the Satellites. QSL via WA4DAN or ClubLog. For more details and updates, watch: <http://cy9c.com/sable-2020.html>

CY9C ST. PAUL ISLAND (Update). Operators Murray/WA4DAN, Pat/N2IEN, Lee/ WW2DX, Will/AA4NC, Bill/K5DHY, Dan/W4DKS and Phil/VA3QR will be active as CY9C from St. Paul Island (NA-094) between July 31st and August 7th, 2019. Activity will be on 160-6 meters using CW, SSB, FT8, EME and the Satellites. QSL via WA4DAN or ClubLog. For more details and updates, watch: <http://www.CY9C.com>

D4, CAPE VERDE. Harald, DF2WO, will once again be active as D44TWO from Praia, Santiago Island (AF-005), between September 29th and October 13th. Activity will be holiday style on 160-10 meters using CW, SSB and the Digital modes. He states that he works mostly on the Digital modes (FT8, PSK31, JT65 and RTTY) and slow CW. Equipment is a FT-450D into a homemade HEX BEAM and a dipole for 40 meters. QSL via M0OXO (OQRS available).

D6, COMOROS [edited] D6CCC COMORES 2019 THE NEW ADVENTURE OF MDXC GUYS -- On the road again, and also this time on the road to Africa to reach their next QTH not far from Moroni. As a matter of fact, the leader Antonio, IZ8CCW, and the co-leader Gabriele, I2VGW, are happy to announce to the DXer Community the new adventure with the international MDXC team: Comores Islands 2019. The license is already in the leader's hands as D6CCC and they planned to be on air from Oct 20 to Nov 1. According to the evaluations that they have done, they are confident to give to a lot of DXers the possibility to work this country on the Low Bands, WARC and especially on the Digital modes. At the moment the team is already built by experienced operators: 20 people coming from 8 Countries. On the air will be five stations, any mode, around the clock. For any further news and updates please stay tune: the official web site of this new great adventure is coming. Of course any donation and sponsorship will be appreciated by the entire team! Mediterraneo Dx Club ["support DXpedition"] (www.mdxc.org)

MD, ISLE OF MAN. Members of the NB DX Team active as MD/OP2D from Isle of Man (EU-116) between September 21-27th. Operators mentioned are Erik/ON4ANN (Team Leader), Erik/ON4CCV, Cedric/ON4CKM, Rudi/ON6MI, Andre/ON4DTO, Patrick/ON4DCU, Willy/ON2BDJ, Luc/ON4AAQ, Yvo/ON5CD and Walter/ON8CW. Activity will be on 80-10 meters. QSL via M0URX direct (2 USDs and a SAE. No IRCs) or via his OQRS (<http://m0urx.com/oqrs/>). Bureau cards via OQRS ONLY. For more details or updates, see: <http://users.telenet.be/on4ann/MD>

OH0, ALAND ISLANDS. Bert, DK3BK, will be active as OH0UDG from the Aland Islands (EU-002) between August 3-17th. Activity will be on various HF bands and modes. QSL via M0OXO or OQRS.

TF, ICELAND (Satellite OP! WW Loc. HP95 IP15 IP25 IP03 HP03). Adam, K0FFFY, will be on holiday with his family

in Iceland between Ju 13-19. He announced his tentative schedule to activate the following WW Loc. As follows: HP95 July 13th, IP13 & IP15 between Jul 14-15, IP25 on Jul 16, IP03 or HP93 between Jul 17-18, and HP94 on Jul 19. There was no announcement of him getting a TF callsign, but watch Twitter for updates: https://twitter.com/K0FFY_Radio

XU, CAMBODIA. Franco, IU0CRW, is now active as XU7AKP from Siem Reap. The length of his stay is not known. Activity will be on various HF bands using a Kenwood TS450S into a wire antenna 23m long. QSL via IW3SNW direct only.

JW, SVALBARD. Freddy, ON6FDP, will be active as JW/ON7SA from Svalbard (EU-026) during the RSGB IOTA Contest (July 27-28th) as a Single-Op/ Non-Assit entry. QSL via ON6FDP.

MJ, JERSEY. Operators Marek/MJ0ILB, Lidor/MJ0IKL, Vlăda/OK1FIK, Honza/ OK1NP, Jozef/OK1FWM and Zdenek/OK3RM will be active using their own personal callsigns, be it the native Jersey callsign or the CEPT variant of their home callsign, near St. Brélade, Jersey (EU-013), between July 21-29th. Activity will be on various HF bands, including 6 meters using CW, SSB and some Digital modes. The team will be active as MJ0ICD during the RSGB IOTA Contest (July 27-28th). For more details and updates, see: <http://www.ok1bil.cz/pages/jersey-2019-dxpedition>

S9, SAO TOME & PRINCIPE. Operators of the LazyDxers Team(Jose/EA1ACP,Charly/EA1DVY, Pedro/EA5BJ, Gen/EA5EL, Francisco/EA7FTR, David/EB7DX and Helio/S92HP) will be active as S9A from Sao Tome Island (AF-023) between June 6-18th. Activity will be on various HF bands using CW, SSB and FT8. QSL via EB7DX. Look for more info to be forthcoming. ADDED NOTE: This is a reissued callsign that was used in the 2004 CQWW CW Contest. QSL via OH2TA.

XV, VIETNAM. Sven, HB9DXB, will be active as XV9DXB from his second home in Vietnam starting around June 1st. Activity will be on 80/40/20/10 meters using CW and SSB. QSL via HB9DXB direct or LoTW.

IOTA NEWS...

AF-018. Operator Raffaele, IH9YMC, will be active from **Pantelleria Island** (IIA TP-001, MIA MI-124, WW Loc. JM56XT), African Italy, during the RSGB IOTA Contest Jul 27-28. Single-Op entry. He will also be active during the CQWW DX SSB Contest (Oct 26-27) as a Single-Op/Single-Band (??m) entry. QSL for both contests are via eQSL.

AS-040. Operators Yasu/JA6WJL and Nagaisi/JA6WIF will be active as JA6WJL from **Fukue Island** during the RSGB IOTA Contest (July 27-28) as a Multi-1 entry. QSL via JA6WJL or LoTW. The operators will be on the island between July 26-29th. Activity outside of the contest will be on 160-10 meters using CW, SSB and some RTTY.

AS-205. Operators Vasily/R7AL, Vladimir/RK8A and Albert/UB9WLJ will be active as R205NEW from **Bogoslova Island**, Russia, between June 14-18th. Activity will be on various HF bands using CW and SSB. QSL via ClubLog's OQRS. Visit their Web page at: <https://rv6ali.wixsite.com/as205new>

AF-118. (New IOTA) Toufelaz, CN8QY, is planning to lead a team to activate **Los Farallones Island**, Morocco, between July 25-30th. Callsign will be 5C9A. Operators mentioned are Zidane/CN8CE, Toufelaz/CN8QY, Hamid/CN8HDZ, CN8PA/CN8PA, Ferti/CN8RAH, Leopoldo/I8LWL, Bruno/IK2PZG, Simon/IZ7ATN, Col/MM0NDX and possibly 1-2 more. They are looking for support. Details are on QRZ.com.

EU-008. Members of the Cockenzie & Port Seton Amateur Radio Club will once again activate GM2T from the **Isle of Tiree** (IOSA NH04, SCOTIA DI10, WLOTA 2232, WAB NM04), the most western part of Scotland's Inner Hebridean Islands, during the RSGB IOTA Contest (July 27-28th) as a Multi-Op/2-TX/Island-DXpedition entry. Operators mentioned are: 2M0NQT, Brian/G3UJE, Cambell/ MM0DXC, Bob/GM4UYZ, Geoff/MM5AHO, Brian/M0RNR, John/MM0JXI, Steve/MM0GZA, Cephas/MM0INS, Craig/MM0NBW, Al/MM0XAB, MW/MM3NQT, Ellis /GM4GZW and Lon/WA6AEE. QSL via LoTW, eQSL or Bureau. ADDED NOTES: Activity depends if the CalMac ferries are operating. For more info, see: <http://www.cpsarc.com>

EU-010. Look for GM7V to be active again from the **Island of Benbecula** in the Outer Hebrides during the RSGB IOTA Contest (July 27-28th) as a Multi-2 entry. Operators mentioned are John/MM0CCC, Chris/GM3WOJ, Stewart/GM4AFF, Tom/GM4FDM and Keith/GM4YXI. Please QSL via Steve, N3SL.

EU-055. Members of the Haugaland group of NRRL (LA4C) will be active as LM450C from **Utsira Island** during the RSGB IOTA Contest (July 27-28th) as a Multi-2 entry. LM450C is a special event callsign for the Haugaland group to

celebrate their 50th anniversary. Operators mentioned are Morten/LA7XIA, Christian/LA8OM, Knut/LA9RY, Odd Arne/LB3AI, Bjorn/LA1CO and Peter/LB0K. QSL via the Bureau or LoTW.

EU-068. Members of the F6KOP Radio Club active as TM5S from **Sein Island** during the RSGB IOTA Contest July 27-28 as a Multi-Single/DXpedition/Mixed-Mode/LPr entry. QSL via F5MFV, by the Bureau, direct, ClubLog or eQSL. Operators mentioned are Maurice/F5NQL, Raymond/F6DVH, Pierre-Marie/F4FCE, Bastien/F4EYQ and Fabien/F4GYM.

EU-122. Ian, G3WVG, will be active as MN5A from **Rathlin Island**, Northern Ireland, during the RSGB IOTA Contest (July 27-28th) as a Single-Op/Mixed-Mode/DXpedition entry. QSL via LoTW.

EU-124. Philip, MW0DHF, will once again be active as MW0DHF/P from **Holy Island**, on the northwest coast of Anglesey North Wales, during the RSGB IOTA Contest (July 27-28th) as a Single-Op/All-Band/DXpedition/High-Power entry. QSL via his home callsign, direct or by the Bureau.

EU-130. Paolo, IV3UHL, will be active as IV3UHL/P from **Marinetta** or **S.Andrea Islands** during the RSGB IOTA Contest July 27-28 as a SO/CW-Mode entry. He will use 100 watts into a Multi-band vertical antenna. QSL via IV3UHL.

NA-068. Mikhail, VE7ACN, will be active as VE7ACN/VE9 from **Miscou Island** between August 11-18th. Activity will be on various HF bands. QSL via VE7ACN, direct, by the Bureau, ClubLog's QORS or LoTW. For more details and updates, watch: <https://www.ve7acn.com>

NA-112. Brian, K4BRI, will be active as K4BRI/p from **Bald Head Island** in North Carolina between July 30-31st. Activity will be mainly on 20 meters using CW and SSB. QSL via his home callsign.

NA-143. Joe, K5KUA, will once again be active as K5KUA/5 from **Galveston Island** (USI TX-001S, Galveston County, Texas) during the RSGB IOTA Contest (July 27-28th) as a Single-Op/Island-Fixed/Low-Power entry. Operations will be mostly CW and some SSB. QSL via his home callsign, direct, by the Bureau or LoTW.

There are a lot of opportunities in the next several months to work DX, especially for those who are hunting islands, so turn on your rigs and get those ether wobblers working and **work some DX**. Until next month, 73 and Gud DX!!

Contest Calendar

June Contest Calendar	
Contest Name	Times
10-10 Int. Open Season PSK	0001Z, Jun 1 to 2359Z, Jun 2
ARRL June VHF Contest	1800Z, Jun 8 to 0300Z, Jun 10
ARRL Field Day	1800Z, Jun 22 to 2100Z, Jun 23

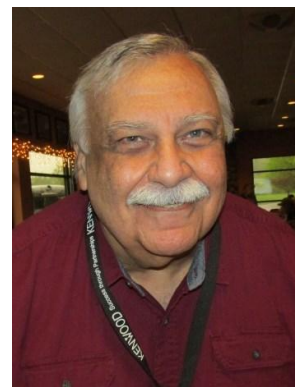
YES - There are MANY More Contests out there - Check the internet.

Contests that will be active at the PCARS Club Site in 2019	
Date	Contest
Jul 20-21	NA QSO Party RTTY
Aug 24-25	Ohio BB-QSO Party
Oct 5-6	California QSO Party
Oct 12-13	Arizona QSO Party



Why Do We Have SIGs ?

Chuck, W8PT



I'd like to have you read the words of Dave Craig, VE6DKC, Treasurer, Chapter # 151, of the Quarter Century Wireless Association. I totally agree with what Dave had to say and since he said it so well, why should I try to improve on it.

"Amateur Radio sure has changed since I was first licensed in 1963! Compact rigs prevail; no more 'boat anchors'! Software defined radios are becoming more and more common. The Internet has become an all-encompassing tool to some, and master to others. Paradoxically, while areas of interest for Hams have expanded greatly, licensing requirements have been 'watered down' to the point where it has become much easier for folks to obtain their license. While many clubs provide 'basic Ham radio' courses (without the need for CW which I found extremely challenging back in '63!) the scope of our hobby has become so expanded that simply obtaining one's license can at times leave the 'Newbie' so confused as to discourage him or her from pursuing the hobby in a way that satisfies their initial reason(s) for wanting to become a Ham! VHF/UHF operation? ARES? DXing on HF? Contesting? Digital? Experimenting? ... and lots more related areas, which are available to all of us. But, which direction to take? Enter the 'Elephant' in the room! No, not that elephant, but the helpful, experienced Ham who is willing to take the 'new guy / gal' under his/her wings so to speak, in order to cultivate the new Ham's interest in the many aspects of Ham radio. I know of very successful Ham radio clubs who do a great job of sponsoring and running evening courses for those interested in obtaining their 'basic' (and also 'advanced') Ham radio license, but whose members do not do such a good job of providing follow up 'hands on' practical assistance to the individual once the person is licensed!"

I believe that Dave hit it on the head when he says that "Newbies" need to be encouraged to look for a seasoned HAM to give them one on one help to really get involved in our great hobby. I also believe that PCARS certainly does this but we need to do more to encourage new hams to take advantage of what our club has to offer. The Special Interest Groups that meet each Tuesday are a great place to get a more in-depth instruction on the various modes of operation that Amateur Radio offers us. Let's all encourage the new hams we have in our midst to take advantage of this great resource. Make sure they know that there are no stupid questions and they will be welcomed. One of the things that I like about PCARS is that there does not seem to be any cliques. EVERYONE is welcome in whatever interest group excites their fancy. So the next time you meet a new member and especially if it is a new ham, find out what got their interest in HAM radio in the beginning and then point them in the right direction to get good, on-going instruction.



CW/QRP & Linux Special Interest Groups

Terry, KB8AMZ

CW & QRP SIG

June 11, 2019

At our next meeting on June 11th, we will have another group get on the air to work QRP contacts. If you have a straight key you might want to bring it unless you're good with an iambic paddle. We had CW signals on 80 up to 20 meters this past month and worked QRP without difficulty. I hope to see you then.

Linux for Hams SIG

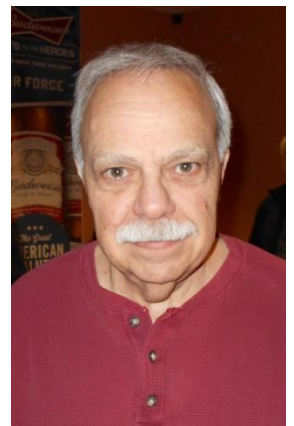
The next Linux for Hams SIG will be Tuesday July 30. Please bring your Raspberry Pi and peripherals for another application install and configuration. I will announce which application we will install as the SIG date nears. More stuff to learn.



Antenna Special Interest Group

Tony, WA8AR

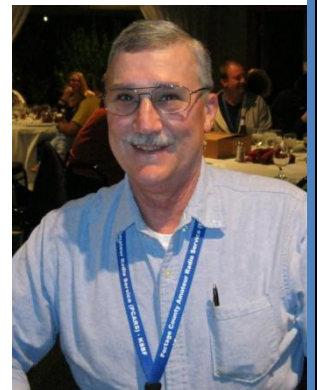
The June Antenna SIG is being CANCELED due proximity to Field Day. Antenna SIG meetings will resume on their regular day in July.



Digital Special Interest Group

Rick, K8CAV

The next Digital Special Interest Group meeting will take place on Tuesday June 4th at 7:00 PM at the PCARS club site in Ravenna. We'll be discussing the FT8 Field Day contest mode and will be doing some hands-on operating using the club's radios. We'll also review the fldigi Field Day macros and time permitting, will do some hands-on operating.



As always, if you have any questions or problems involving digital operations, we'll do our best to get them answered. Feel free to bring your laptop or radio if you think it will help.

Facebook Re-Post

Larry W2LJ

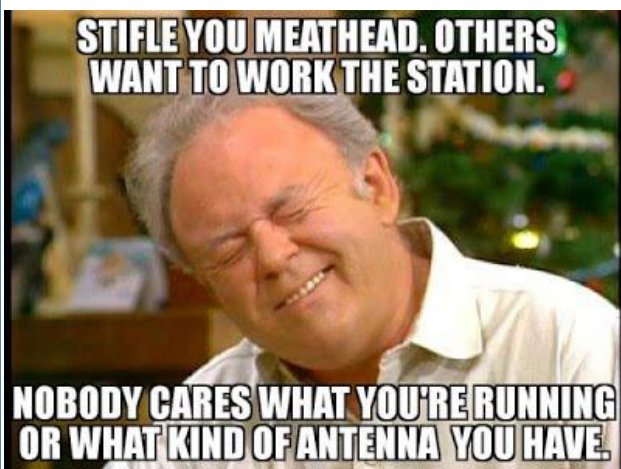
QRP - When you care to send the very least!



Saw this on Facebook this morning under "Amateur Radio Funnies", and there is something to this that does bring on a chuckle.

I think many of us have been in a DXpedition pileup, or a pileup for a super rare one when someone starts to try to rag chew with the prized contact in question. And there have been times when I have had this impatient sentiment, too - but it also got me thinking.

Maybe it's due to growing older and perhaps gaining a little wisdom? - but sometimes I get tired of the competition and the quickie "UR 599 TU QRZ?" QSOs. It's nice, from time to time to have an honest-to-goodness relaxing rag chew with a DX station (or ANY station for that matter). After all, isn't that part of what Amateur Radio is all about? Making friendships, overcoming boundaries?



Making DX Honor Roll is a remarkable, honorable and laudable achievement and I have the utmost admiration and respect for those who have done so. But I never want to become jaded like that one Ham who sold all his equipment after receiving his Honor Roll plaque, because he thought "I did it all" and there was nothing else to be gained by remaining in the hobby.

I may not get on the air as often as I should, I will never make Honor Roll (I know that, for a fact), and I will probably pass one day with a bunch of unfinished projects taking up space in my shack, but I do enjoy the comforting thought that Amateur Radio is there in the background of my busy life, and will continue to be a source of enjoyment for me in the future.

Check out Larry's blog at: <http://w2lj.blogspot.com/>



PCARS

ARRL Volunteer Examiners:
serving the Amateur Radio community

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



Knowing a Language or Decrypting a Language

Terry, KB8AMZ

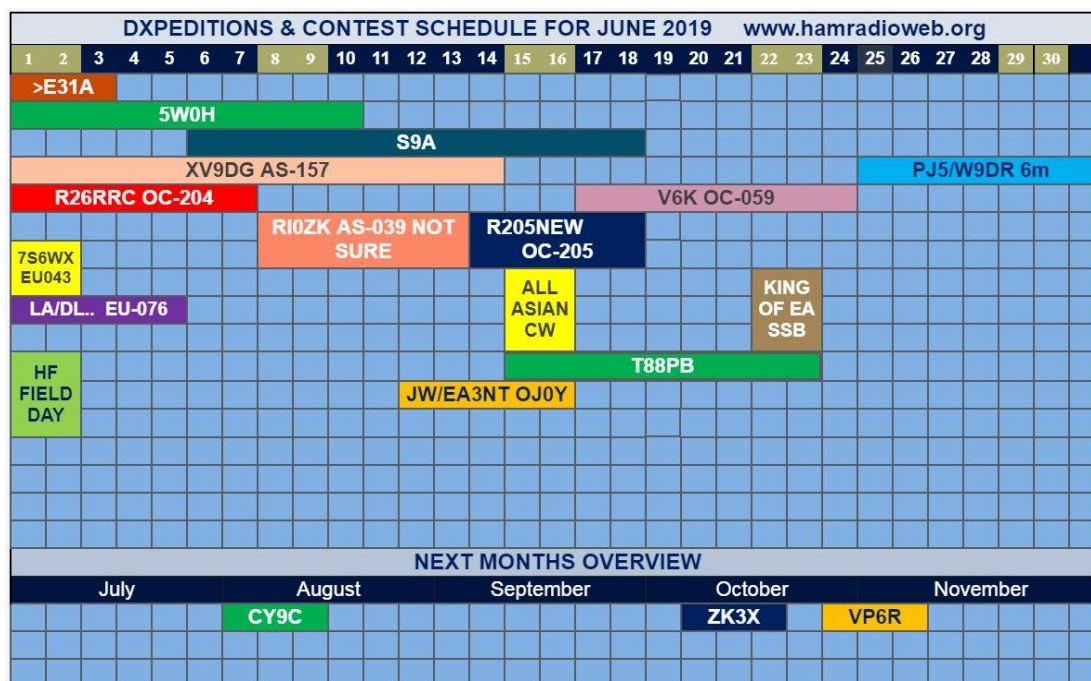


I have been hearing the English language for close to 68 years and I am at the point where comprehension is more automatic rather than decryption. I hear a group of words and instantaneously know their meaning. No hesitation. The only time the meaning is not clear is when a word is introduced that is not in my brain cell database. I may hesitate if the words surrounding the new word don't give a clue what the meaning is that I should have. I may have to look at a reference book (dictionary) to gain true meaning of the intended new word. I have been using the English language every day for nearly 68 years so that meanings of the grouped words give instantaneous meaning without having to pull the paper record off the shelf to obtain that meaning. No decryption at all.

I have been hearing and speaking Morse for about half of the time that I have been speaking and hearing the English language, about 32 years. Overall I would guess that I listen to and speak Morse about two percent of the time. At certain times it may appear that Morse is heard and spoken nearly fifty percent of my time. I hear and speak Morse periodically. There may be long gaps of weeks of no Morse, while English is everyday, with short periods of binging on Morse. I don't know Morse the way I want to know Morse. Many of my former Morse students would say I know Morse very well. I concur that I know Morse better than the average Morse user but I still have to decrypt it in my brain. When I arrive at the point where I know it when I hear it then I can honestly say that I know it. Right now, to the novice I know it, but to the experienced Morse user they can see by my actions that I don't know it. I know that I don't know it. Believe me when I say every time I copy Morse or send Morse that I am practicing Morse. I am not telling you this to make you feel better because you don't know well either, but because, for me, every time I use Morse I am practicing Morse.

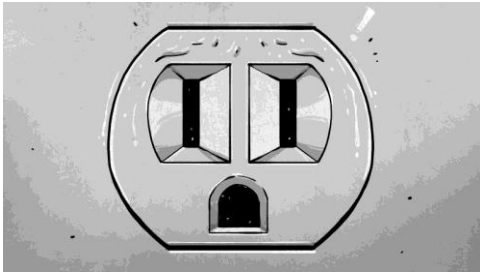
For the current time I know English and rarely have to decrypt it however I don't know Morse yet and do have to decrypt it. I am still learning.

DX Calendar for June - How Many Can YOU Log?



The Electrical Outlet and How It Got That Way

Dan Maloney



Right now, if you happen to be in North America, chances are pretty good that there's at least one little face staring at you. Look around and you'll spy it, probably about 15 inches up from the floor on a nearby wall. It's the ubiquitous wall outlet, with three holes arranged in a way that can't help but stimulate the facial recognition firmware of our mammalian brain.

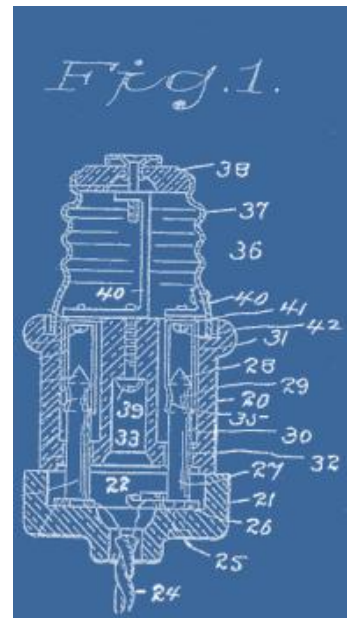
No matter where you go you'll find those outlets and similar ones, all engineered for specific tasks. But why do they look the way they do? And what's going on electrically and mechanically behind that familiar plastic face? It's a topic we've touched on before with [Jenny List's take on international mains standards](#). Now it's time to take a look inside the common North American wall socket, and how it got that way.

HUBBELL'S PLUGS

Separable Attachment Plug, US Patent 774,250.
Note the round, headphone-like prongs rather than flat blades.

Consider the problems faced by engineers and designers in the early days of the electrical age. They were literally inventing an industry from the ground up, with very little to go on in terms of prior art. Not only did they have to invent the means of producing electricity, they had to come up with absolutely every component that would connect together to create useful circuits for paying customers, preferably without killing them.

One thing customers, particularly residential customers, would need would be a means to temporarily attach electrical devices to the mains supply, without requiring a visit from an electrician to connect them to the fixed wiring of a house or office, which was typically dedicated to sockets for light bulbs. The requirements were simple: provide two contacts, one for the line conductor and one for the neutral, that could remain firmly connected but easily interrupted at need.



Imaginative minds worked on this and similar problems in the late 19th and early

20th centuries, and various solutions were adopted. But it wasn't until 1903 that Harvey Hubbell, an inventor from Bridgeport, Connecticut, patented his "Separable Attachment Plug," a device that we'd recognize as a plug and socket. Hubbell's first pass at a design used round conductors that looked a bit like the plugs used in manual telephone exchanges to make connections, and might have been inspired by them. The detents at the tip of the pins were retained by the spring action of the contacts inside the socket.

A Hubbell plug with flat blades, from the 1905 catalog.



The device worked well, but the manufacturer and businessman in Harvey saw problems. Foremost was the costs behind those round pins, which would have required machining to achieve the tip and detent. Harvey would have known that parts stamped from sheet metal would be cheaper and easier to manufacture, and so he scrapped the round pins in favor of flat metal blades in 1904. Like the round prongs, the flat blades had a detent for retention, and were arranged in a line. [Catalogs from the time](#) list dozens of variants of the "Hubbell Attachment Plug," and the prices shown for each device suggest

that Hubbell's company fared well in the early 20th century.

For reasons unknown, though, Hubbell altered his design in 1912. The two blades were no longer in a line; each blade was twisted 90° to form the familiar parallel arrangement we see to this day. Hubbell continued to sell both styles of plugs and sockets, and by 1915 had sold something like 15 million units, enough to ensure that Hubbell's design would be adopted as a standard, even without the millions of units also sold by Hubbell's imitators.

STANDARDIZATION

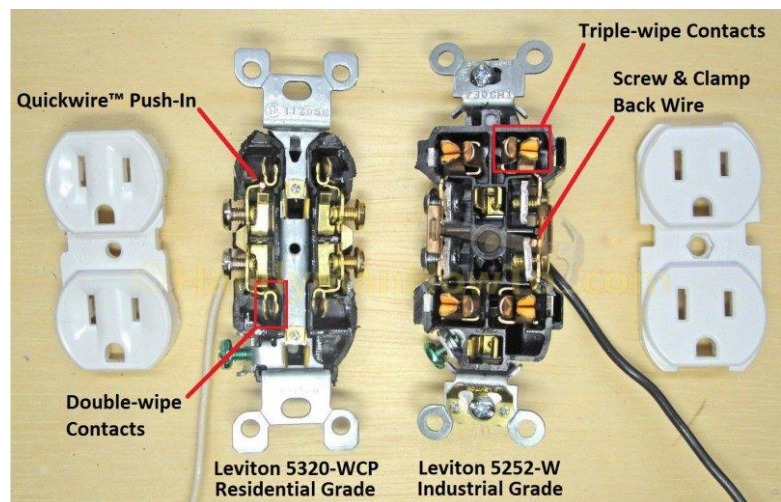
The specifications for the standard wall outlet we know and love today in North America are determined by the National Electrical Manufacturers Association (NEMA). NEMA standards cover a bewildering range of electrical products; we've covered [their enclosure and weather-resistance standards](#) before. The standard 120-volt, 15-amp outlet is a NEMA 5-15. The third conductor, the ground pin that completes the outlet's face, is a round or U-shaped prong. It was added to some outlets as early as the 1920s as a safety feature and is now required for all outlets by the National Electrical Code.

The ground connection is interesting. You'll notice that on three-wire plugs, the ground pin extends further out from the insulated cord body by about 1/8". The idea here is that the ground circuit will be completed before the line and neutral connections are made when plugging the cord into an outlet, and perhaps more importantly, will be disconnected last when unplugging. That ensures that there's a path to ground any time a circuit is plugged into the outlet.

Note too that the NEMA standard says the ground pin is actually located *above* the slots for the line and neutral pins, turning that frowning face upside down. There's some logic to that — if something conductive should drape across a partially unplugged cord, it's safer to have the line and neutral blades physically blocked by the ground pin. In practice, though, most outlets in residential and business settings are installed with the ground plug down. But look around the next time you're in a hospital; chances are, the outlets there are all installed the correct way.

BEHIND THE FACE

The internals of a NEMA 5-15 outlet vary by manufacturer, of course, and even within a brand, there are different grades of outlet. The picture below shows two different grades of outlet taken apart. They're similar in that both the line and the neutral connections are formed brass bus bars, with screw connections on the outside for connection into a building's wiring, and springy contacts to grip and retain the mating plug. The industrial-grade outlet has thicker bus bars, better contacts, and stouter plastic in the body. You'll notice too that both grades have the ground pin directly connected to the metal frame of the outlet, which would also be in contact with a metal wall box, if it were mounted in one.



NEMA 5-15 outlet internals. Source: HandymanHowTo.com

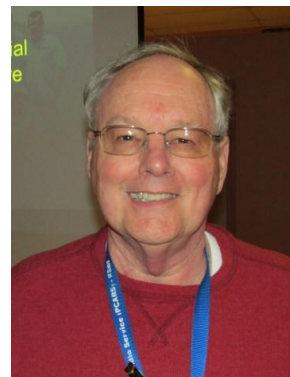
Considering how much else has changed in the last century, it's pretty remarkable that Harvey Hubbell's original plug and socket designs have remained pretty much unchanged. They've been tweaked, for sure, and the original idea has been extended to a panoply of configurations for every connection imaginable. There's no doubt that the design has some deficiencies, but in the end, Harvey's ideas seem to have won the day by addressing the basic needs.

From the HACKADAY web site: <http://hackaday.com/> Dan Maloney: Contributor to HACKADAY and PCARS

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.

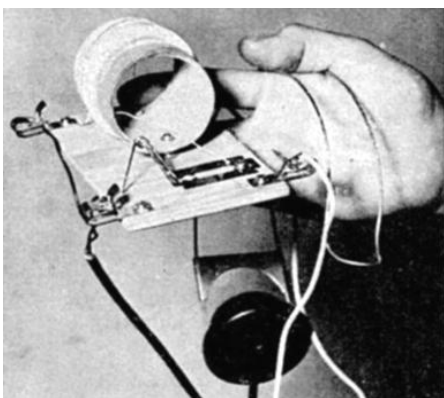
Jim, AC8NT



As ham radio operators we are hackers. We have often taken parts both scavenged from old equipment and purchased for other use and built some really interesting stuff. I have always enjoyed this part of the hobby. Often these projects have been built in Altoid tins and coffee cans. It has been a lot of fun and helped me build by electronic skills. But what if it was necessary to survive.

During war many of our veterans found themselves captured by the enemy. In deplorable conditions their job was to survive and create as much trouble for the enemy as possible. This often required information from outside their camps and often outside the country where they were held. These radio projects were usually called foxhole radios. There are many examples of these radios from WWII and Vietnam. This article will describe some of the problems that were overcome to make these radios.

Design



First, remember that it had to be done entirely without any diagrams. All from memory or an understanding of radio principles. No internet, no app sheets, no QST magazine. Most who built these radios really knew how radio worked.

Not all the radios were simple “crystal” sets. Some were regenerative sets requiring at least one tube in the circuit. I should point out to those unfamiliar with regenerative sets they do produce weak signals that can be detected making them more dangerous to use. That is why most designs were “crystal” sets.

Foxhole “crystal” set using razor blade detector

How About Parts

No Amazon, Newark or DXE here. Did you know:

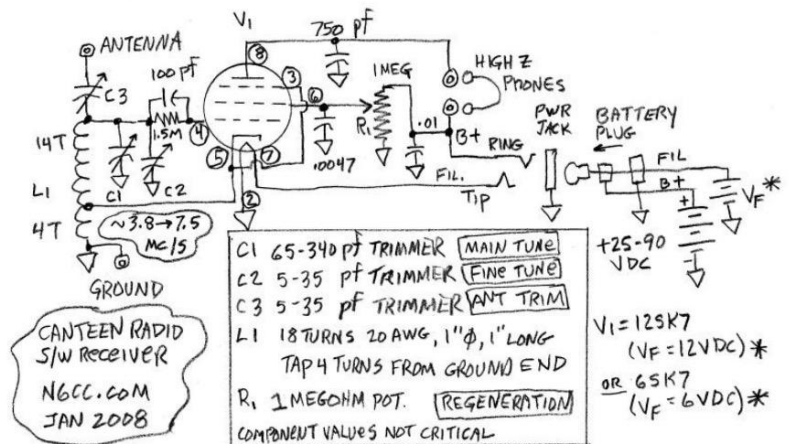
1. You can make resistors by impregnating string with burnt cinnamon bark.
2. Capacitors can be made from the foil from tea chests and newspaper (that was not used in the latrines).
3. Wire can be insulated by rubbing a mixture of flour and palm oil on bare wire.
4. A battery (chromic acid wet cell) can be made from potassium dichromate and zinc trouser fly buttons.
The potassium dichromate is made through detonation of pharmacy chemicals (don't try that home).
5. A detector can be made from a rusty razor blade and a safety pin or piece of sharpened wire.

Well all these techniques were used by Lt. Colonel R.G. Wells a British officer interned in a Japanese concentration camp in Borneo in 1942 to build his radio. Most had to steal or buy headphones and tubes for their designs. However, Richard Lucas a prisoner in Vietnam manufactured his headphone using a core of nails wrapped in wax-insulated wire with a bamboo resonator and a tin can lid for a diaphragm. And we call ourselves hackers.

Hiding Their Work

All the work of making the radio would be lost if it was found by their captors. Some very clever techniques were developed to hide these radios. False bottoms were engineered into storage lockers. One of the lockers in an Italian camp was moved from camp to camp without being detected even with very thorough searches made both as the locker left the camp and when it arrived at the next camp.

Captain Russel Hutchison built a regenerative radio into a canteen for hiding. See the picture below. He stole most of the parts and built the radio while interned in a the Cabanutuan concentration camp in the Philippines by the Japanese. The circuit was built again much later by N6CC because he wanted to see it work. Barbwire fences and drying lines that were wrapped with wire were often used as antennas for these sets.



Another great example of stealth was the radio set built by French prisoners of the infamous German camp Colditz. It was hidden between an upper and lower attic. This set was used by British Captain Yule while he was there to assist in getting the British intelligence on local activities. He would receive coded messages using the radio and send coded responses using letters written by prisoners to their families. This secret radio “room” was discovered by workmen renovating the Colditz Castle for use as a museum. They also discovered Yule’s records. He never tried to escape from Colditz, because he felt his work was too important. He survived Colditz and died in England in 2001 at the age of 84.

Real Hackers

Memorial Day and Veteran's Day are times for us to remember those that are currently protecting our country and those that sacrificed so much protecting others. It is great to know how much radio and these real hackers helped in this service. Maybe I will try to rebuild one of the sets and see just how it feels to hear radio signals using practically nothing.

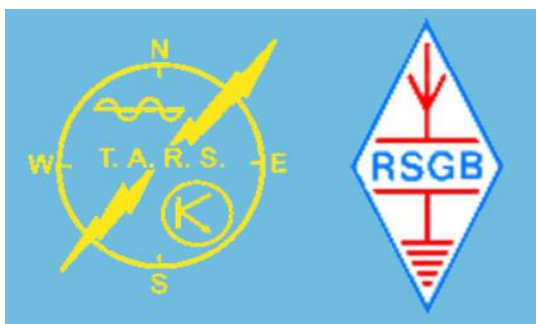

PCARS K8BF

 The Club that puts the FUN in Ham Radio!

Paper Chase - D-Day

Joe, W8KNO

June 6 will mark the 75th anniversary of Operation Overlord during World War II and the D-Day landings in Normandy. To commemorate those who took part, a small team from the Torbay Amateur Radio Society in England is organizing a chain of five special event stations along the UK's southern coastline. Each will be based in the geographical area of a beach-landing force point of departure and will use a relevant call sign.



TARS will activate a site above Brixham Harbour in Devon - a departure point for many US soldiers who later landed on Utah Beach and will use the call sign GB75UF.

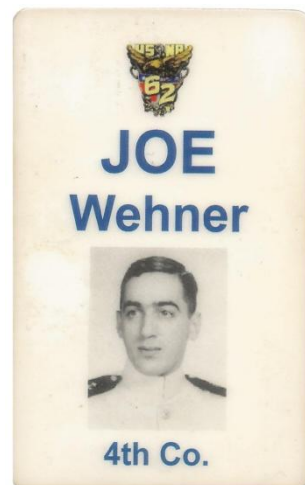
Other clubs activating similar relevant locations will use these call signs: GB75OF - Omaha Beach, South Dorset Radio Society; GB75GF - Gold Beach, Southampton ARC and Soton University Wireless Society; GB75JF - Juno Beach, Itchen Valley ARC and Waterside New Forest ARC, and GB75SF - Sword Beach, Fort

Purbrook ARC.

In addition, TARS hopes to have two club stations from the Normandy area of France activating sites on the beaches. Logging is being coordinated centrally, and stations who contact two or more of the stations within the chain will be able to download a suitable certificate to commemorate their achievement. Details on logging, certificates, and operating frequencies will be available on the club web site: <http://www.torbayars.org.uk/index.shtml>. Contact the organizing team via email.

SSB frequencies will include 3.644, 7.144, 14.144, 18.144, 21.244, 24.944, and 28.244 MHz (data only on 10.144 MHz). Stations operating on CW or data will attempt to use similar frequencies ending in 44.

On top of the Stripes, you will find the Invasion Star which incorporates the 5 beaches of Normandy from the D-Day Invasion on June 6th 1944 (Omaha, Utah, Sword, Gold and Juno). In the centre of the Invasion Star you will find the SHAEF insignia, surrounded by the flags of the countries that had the largest impact on the invasion. The design of the insignia for the Supreme Headquarters Allied Expeditionary Force (SHAEF) was approved by General Dwight D. Eisenhower, Supreme Commander for Operation OVERLORD, and came into general use in March 1944. Each element in the insignia is symbolic. The main feature is the flaming sword of avenging justice, shown piercing the black of Nazi oppression. Above the sword is a rainbow, symbol of hope, containing all the colors that made up the national flags of the Allies. Then above the rainbow is the blue of peace to come.



Hara Arena Severely Damaged by Tornado

From the CQ Magazine Blog

Hara Arena Severely Damaged as Tornado Cluster Hits Dayton Area

The former home of the Dayton Hamvention suffered significant damage from a tornado that swept through the Dayton suburb of Trotwood on Monday night, May 27.

Drone footage shows extensive tornado damage to Hara Arena, former longtime home of the Dayton Hamvention. (WHIO-TV photo, via W8CI)



Drone video from WHIO-TV (<https://www.youtube.com/watch?v=8UwUn7uFxSQ>) shows that the storm apparently passed directly over Hara Arena, ripping off large sections of its roof and causing a large amount of additional damage (amazingly, the car dealership across from Hara appears to have had little to no damage - see the end of the video). Hara Arena closed in 2016 and the Hamvention has been held for the past three years at the Greene County Fairgrounds in nearby Xenia.

Accuweather reported that the twister passed directly over Interstate 75, the main north-south highway through the Dayton area, and that highway crews used snowplows to clear debris from the road. There were no reported deaths from the Trotwood tornado, but there was at least one fatality resulting from another twister north of Dayton. A map posted by the Cincinnati Enquirer showed at least a dozen different tornado touchdowns in the Dayton area.

Editor's note: This picture of Hara Arena was taken on May 15, 2019 just prior to Hamvention 2019



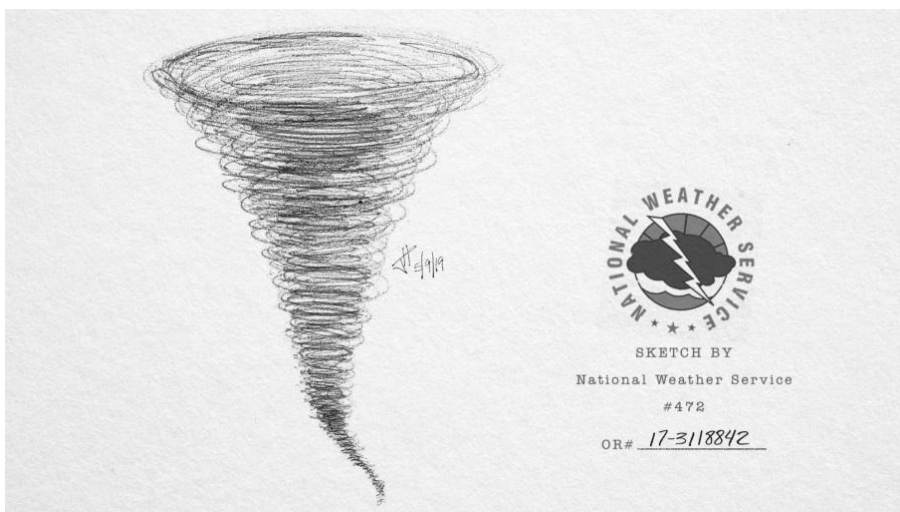
NWS Asks Everyone to Look Out

From the National Weather Service - no.



SILVER SPRING, MD - Asking the public to exercise caution and notify authorities if they encounter the “extremely dangerous” natural disaster, the National Weather Service released a composite sketch Friday of a tornado that officials believe is responsible for devastating the Midwest.

“While none of our eyewitnesses were able to get a good look at the tornado up close, our composite artist has nonetheless been able to combine their recollections into this visual approximation of the storm,” said agency spokesperson Margaret Black, who warned residents throughout the Midwestern states to be on the lookout for a large, gray, funnel-shaped cloud accompanied by rapidly whirling winds.



“At the present time, we cannot confirm whether this tornado is connected to the leveling of a ranch house in Findlay, OH earlier today, but we certainly have not ruled it out.

We strongly advise anyone who sees the tornado, which we believe to be approximately 4,000 feet tall, to avoid approaching it, as this storm is incredibly volatile and prone to violent outbursts.”

At press time, authorities told reporters they had managed to corner a tornado but

were unable to apprehend the suspect before it fled the scene.

PCARS Thursday 2 Meter Nets

Greg, KA8TOA
Net Control Coordinator

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

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



June	
6	KE8BWA
12	N8QE
20	WB8LCD
27	K8IV

July	
4	No Net
11	KA8TOA
18	WB8LCD
25	K8IV

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

If you have not been a Net Control Operator for PCARS and would like to give it a try, *please* contact me at: gregory999@roadrunner.com everyone who is a club member is welcome to have a turn - and have fun being the PCARS Thursday Night Net Control !

Now's the Time to get Your Name on Mars



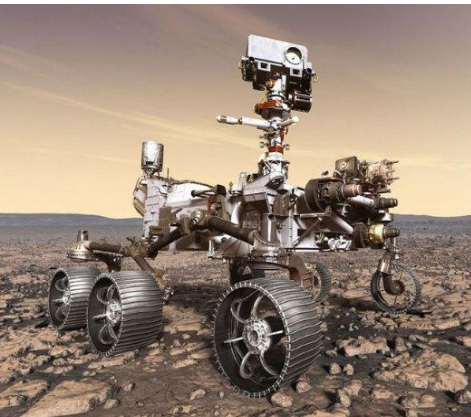
Tom, KB8UUZ



Now's the time to get your name on NASA's next mission to Mars

It's that time of the year again, when NASA gives you the opportunity to "ship" your name to another celestial body. This time, the destination is Mars, and the shipping service is NASA's future Mars 2020 rover, which will be headed to the Red Planet in - you guessed it - 2020.

The rover's primary mission is to get closer to answering that fundamental question: did Mars ever host alien life? The robot is equipped with tools and instruments that will help scientists figure out if the planet may have hosted life in the past. On top of that, the rover will also be drilling and collecting samples of Martian dirt. It'll then leave those samples on the ground, where they could potentially be picked up someday by another spacecraft and brought back to Earth.



And while the Mars 2020 rover is doing all of this, your name could be along for the ride. If you send in your name sometime before September 30th, NASA engineers at the Jet Propulsion Laboratory will etch it onto a silicon chip with an electron beam, and then the rover will carry it on its journey. The names are going to be pretty teeny, though - about one-thousandth the width of a human hair. That's small enough so that more than a million names can be included on a single chip as big as a dime - but big enough for any Martian microbes to read (only kidding... Martians can't read).

NASA has provided this opportunity for members of the public before, when it landed the InSight lander on Mars in 2018 or when it sent the OSIRIS-REx spacecraft to the asteroid Bennu. And just like any seasoned traveler, you'll get a boarding pass and "frequent flyer" miles. Seeing as how the InSight travelers got about 300 million miles from their trip, the Mars 2020 folks are poised to get some serious points, too. Unfortunately, it seems doubtful Delta airlines will accept them.

AND - when I filled out my reservation - I listed my name as "Tom KB8UUZ Parkinson" So when the new rover lands, my callsign will be forever on the Martian surface.

Go to:

<https://mars.nasa.gov/participate/send-your-name/mars2020/>

GET YOUR BOARDING PASS

to fly your name on the next mission to Mars!

go.nasa.gov/Mars2020Pass

PCARS Ham Radio License Plates Wanted !!!

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

We have 70 PCARS member's ham plates now, **but we can use more**. Don't have ham radio call plates on your vehicle? Well for those of you in Ohio, you can get the plates sent to you by going to any License Bureau office and filling out the special plate registration form. Have a copy of your current FCC license when you apply. The official form to obtain your Ohio Amateur Radio license plates is on the [PCARS Yahoo Group](#) site. Then you'll have an old plate to bring in to get hung up as a **permanent part of PCARS history**.



From the Ohio BMV:

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

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

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

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

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

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

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

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

PCARS is on YouTube

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

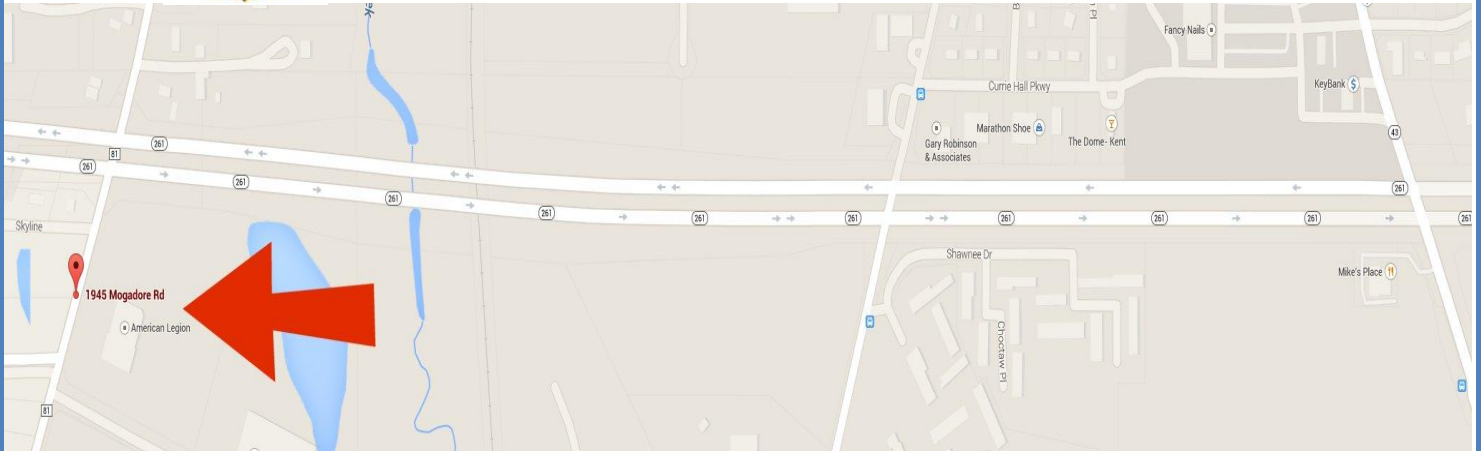


PCARS Meetings

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



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



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



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

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

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

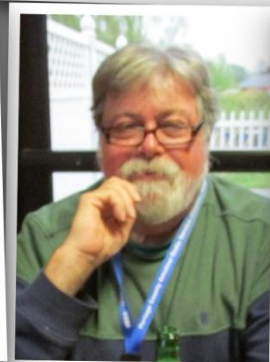
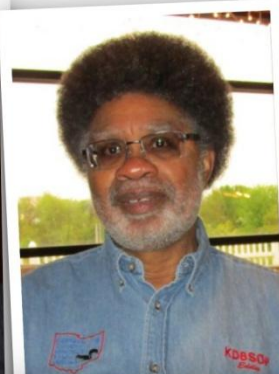
Photos from the PCARS May Meeting



May 13
2019



May 13
2019



May 13
2019



PCARS K8BF

The Club that puts the FUN in Ham Radio!



Thanks & 73

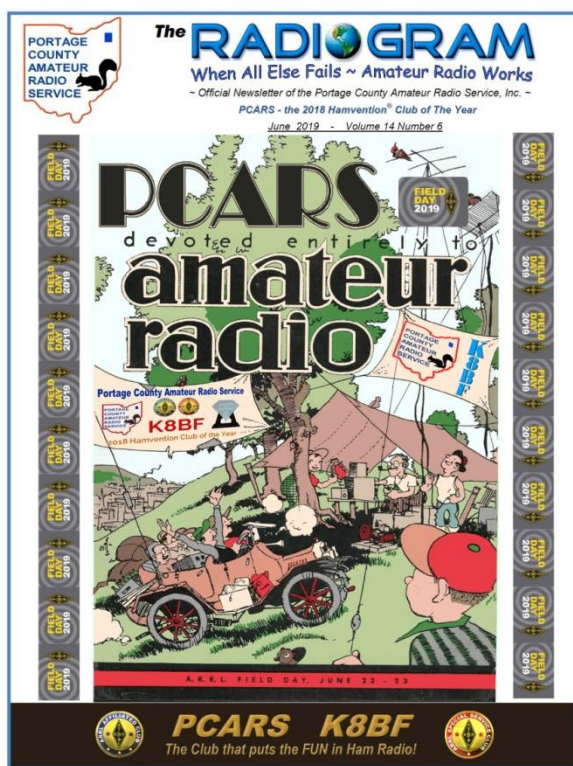
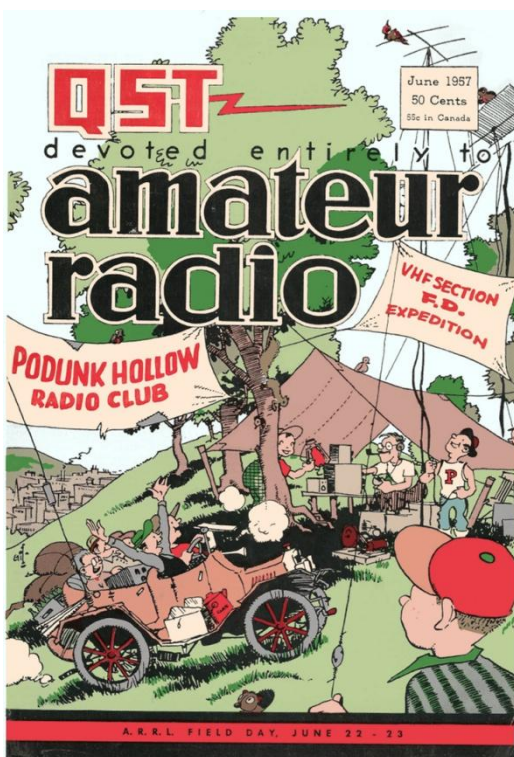


Parky, KB8UUZ
PCARS Newsletter Editor



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 throughout 2019 and beyond.

A special thanks goes out to the ARRL - I spotted an old issue of QST from June of 1957 and was able to change it slightly for PCARS. Dates do repeat and you will notice that the Field Day 1957 and 2019 are both on June 22 & 23. Can you spot the differences?



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

AC8NT, AC8QG, KB8UUZ, WA8AR, K3GP, K8CAV, WB8LCD, W8PT, K8IV, KA4KOE, KB6NU, WX4QZ, N9ADG, KB8AMZ, N8XTH, W2LJ, Dan Maloney, W8KNO, KA8TOA, ARRL, CQ Magazine Blog, NWS, ARRL Contest Update, Hamradioweb.org, NASA and the World-Wide Web.

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



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

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

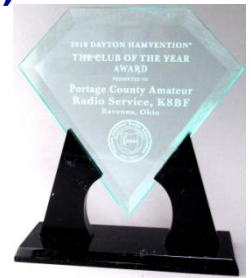


PCARS meets the second Monday of each month at the **Kent American Legion Post 496**, 1945 Mogadore Rd. - just South of Rt. 261 - enter the rear of the building for the meeting room.

Meeting starts at 7:00 pm - All are welcome to attend ~ Stop in and say hello!

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

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



~ 2019 Officers ~		2019 PCARS Appointments & Committees	
President - Jim Wilson - AC8NT Vice President - Nick Wagner - AC8QG Treasurer - Paul Hyland - KE8EGF 3 Year Trustee - Terry Morris - KB8AMZ 2 Year Trustee - Ed Polack - K8IV 1 Year Trustee - Tom Parkinson - KB8UUZ Past President - Rick Kruis - K8CAV	ARRL Awards - DXCC WAS, VUCC, WAC	W8KNO	Joe Wehner
	Club Site Manager/Liaison	K8CAV	Rick Kruis
	Contest Coordinator	W8PT	Chuck Patellis
	EchoLink & Web Guru	K8SRR	Steve Randlett
	Field Day Chairman, 2019	WA8AR	Tony Romito
	FYAO Chairman	W8PT	Chuck Patellis
	Historian	KB8SZI	Peggy Parkinson
	K8BF Callsign Trustee	KD8SKL	Amy Leggiero
	K8BF QSL Manager	KD8SKL	Amy Leggiero
	Membership Chairman	WB8LCD	Tom Sly
	Net Control Manager	KA8TOA	Greg Ash
	Net Night - Club Manager	WB8LCD	Tom Sly
~ Meetings & Net ~ 2nd Monday of each month. 7pm Thursday night Club Net at 8 pm on 146.895	Newsletter Editor	KB8UUZ	Tom Parkinson
	OSPOTA Chairman	KB8UUZ	Tom Parkinson
	Public Information Officer	WB8LCD	Tom Sly
	Secretary	W8NET	Gene Marsh
	Tech, Gen & Extra Class Manager	AC8NT	Jim Wilson
	Volunteer Examiner Liaison	KB8UUZ	Tom Parkinson
	Webmasters	KD8MQ	John Myers
		K8SRR	Steve Randlett



PCARS Active Volunteer Examiner Team Members

KB8UUZ	Tom Parkinson
WB8LCD	Tom Sly
N8XTH	Deron Boring
N8PXW	Jim Korenz
N8QE	Bob Hajdak
K8IV	Ed Polack
W8RID	Robert Davet
WA8CCU	Al Nagy
W8Ezt	Frank Tompkins
AC8NT	Jim Wilson
K8MSH	Mark Haverstock
KA8TOA	Greg Ash
W8PT	Chuck Patellis
AC8QG	Nick Wagner
N8FUM	Dan Torchia
W8GWI	Dave Seckel



THE RADIOGRAM

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliation
April 20, 2006



Special Service Club
March 22, 2010

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