



The **RADIOGRAM**

When All Else Fails ~ Amateur Radio Works

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

May 2016 - Volume 11 Number 5

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In This Issue -

K8BF Special Event Station Made 327 Contacts



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



Feature Articles for May	
From the PCARS President	3
From the PCARS Vice President	4
PCARS Special Event Station	6
Amateur Radio's Very First Satellite	9
Youth DX Adventure Raffle	17
Mini Maker Faire Report	17
Dayton Hamvention® 2016	18
What Hath God Wrought	19
Field Day Update	21
Field Day Flex Station	23
Revamping the Ohio Speakers Bureau	26
World Wide Fauna and More	27
I'm Extra Ignorant	28
Dayton Hamvention® 2016 - Plan to GO !	31
VHF/UHF Century Club Award	36
New WAS Award	36
Eliminate 15 db Gain Limit on Amplifiers	41
Discover the HF Experience at the ARRL Expo	41
Shack Shot - WA8SAJ	42
Mark Your Calendars	
Schedule of Events	5
VE Test Sessions	8
Net Info & NCS Schedule	20
Contest Calendar	20
Special Speaker for the May Club Meeting	24
Russian "Inventors of Communications"	25
Hamfest Calendar	32
Meetings, PCARS	38
Important Dates During May	43
20 over 9 Hamfest Flier	44
CARS Hamvention Bus Flier	45
Pioneer ARF Bus Trip to Dayton 2016	46
Regular Departments	
YouTube - PCARS	5
Happy Birthday	5
Patches & Stickers, PCARS	8
EmComm	16
Digital Special Interest Group	25
Linux for Hams Special Interest Group	26
Charlie the Tuner's HF High-Lites	29
Let's Talk	33
Swap-N-Shop	35
Member Ham License Plates Wanted	37
Yahoo Group - PCARS	37
Pictures from the Last PCARS Meeting	39
Finals	
Thanks & 73	43
Club Information and Fine Print	47



From the President

Rick, K8CAV
PCARS President



I've spent the last couple of columns talking about all the good things that have been happening in the radio room at our club site and I have to tell you all that effort really paid off! Chuck, W8PT and Parky, KB8UUZ did a great job putting together the club's Special Event activity celebrating the club's tenth anniversary on April 23rd, and what a great time that was! I've said up front that I've never been a contester and I was just a tad leery about getting behind the microphone but it didn't take long before I was totally immersed in snagging Q's for our effort. Put quite simply, I had a totally fun and enjoyable afternoon and evening doing something new and sharing a great time with fellow PCARS members. And it really paid off because between all of us there we garnered over three hundred contacts that day and receive a ton of compliments about our special event from many operators who contacted us.

OK, he had a great time so what's the big deal? Well the big deal is that this is just one of many things the club does for its members and unless you give it a chance by showing up you'll never know exactly how much fun YOU could be having as well. Often times it just takes breaking past whatever hesitation you may have about participating with us, bite the bullet, come on down, and have a great time! So whatever event the club is doing, commit to joining us, even for just an hour and you may find yourself enjoying it so much you'll spend the whole day. I know I did and I'm glad I got past the hump and participated!

Speaking of club events, we have a lot of things coming up for you to participate in. Antenna Day, our dress rehearsal for Field day is coming up on Saturday May 7th at the Freedom Township Community Park. This year it will be a full dress rehearsal and the station captains need your help and support so we can get everything set up and operational to try and identify and mitigate any problems before Field Day.

For our monthly membership meeting we have a very special guest from Great Britain, giving our presentation. Tom, WB8LCD will be providing prizes for the 50-50 raffle so it promises to be a very enjoyable evening. Come early for dinner and share some time with us!

Dayton Hamvention® is just around the corner and if you will be there on Saturday, we'll be doing our annual PCARS photo **in front of the arena (NEW PLACE - See WB8LCD's article on this)**, stay tuned for details.

Field Day is looming large and you're going to start seeing articles in the newsletter and QST e-mails about volunteering to help out. We need operators, loggers, folks to help set up and tear down, and folks to help the support teams with their part of Field Day. Above all we want you there to enjoy the PCARS Field Day experience with all of the rest of us. We have another great menu for dinner on Saturday evening so mark your calendars and plan on being there.

At our April meeting Tom, WB8LCD took a moment to thank the people in our club who are part of the leadership, or have taken on responsibilities for the club to make PCARS a success. I echo that absolutely but I also want to point out that all of that effort would be for naught were it not for **you**, our individual members who participate in our club. I can say without any doubt that your participating in PCARS is what motivates those folks to give their time and efforts in those leadership positions. The best thank you that you can give them is to participate and be a part of the best Amateur Radio club in Ohio!

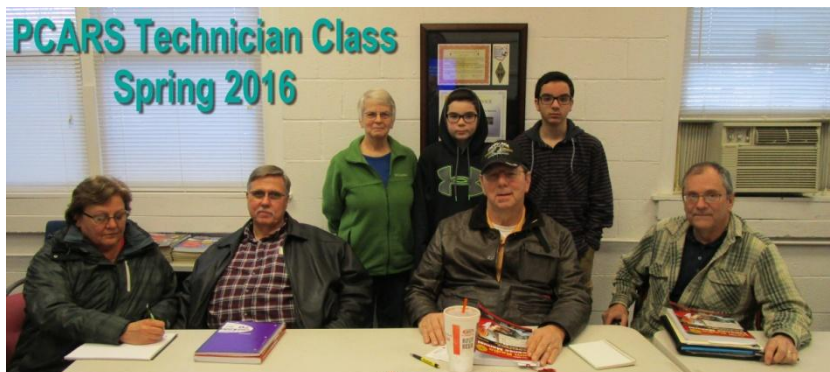
From the Vice President

Jim, AC8NT
PCARS Vice President



This month I was working on NVIS antennas. I started with low dipoles and migrated to the military style 5 point. I now have a working go-kit version of the 5 point antenna. What I learned is that I needed a good small manual tuner. This created a construction project to build the tuner. This created a need to wind a bunch of toroid coils. My point is that amateur radio is a constant running project. Start doing something that is supposed to be easy and end up with more work than you ever imagined. But that is what I like about the hobby. You are always learning or trying something new. It was also fun to test the antennas and make some excellent contacts in Ohio, Virginia, Michigan and even Canada.

We are currently half way through the Spring Tech class. We even have a couple of school students. It was good to see some young blood in the class. During this summer three STEM camps in Summit and Cuyahoga counties will have Tech classes as part of their studies. This should add even more young (6th grade through Senior) amateurs to our ranks. At one of our STEM meetings we discussed starting clubs at a few high schools to promote use of amateur radio as part of science classes. I have also been approached by two USFirst robotics teams asking questions about using UHF remote controls for their robots. This should also increase interest in the hobby also. Our future is in getting more young people involved.



We are working to schedule a "Get on the Air" day at the club site to allow new Techs and General class hams to work out the kinks in their equipment and use the club's site to make their first HF contacts. I would like to see this happen yet in May. We need to make sure that new hams get every opportunity to get on the air. This will require help from a few "Elmers" to make this happen. We will discuss dates at the next board meeting.

If you haven't been to the club lately, come in for a visit. We are continuing to make improvements to both equipment and the club site.

Just a reminder that NASA is having open houses this summer celebrating its 75th anniversary. The first is at Glenn Research at the Cleveland Airport and happens during the same weekend as Dayton. The second is at Plumbrook Station near Sandusky. It will be June 11 and 12. Looks of good radio stuff will be available for you to look at and see some of it running.

The May meeting will include a presentation by Paul Darlington on the acoustics. In this presentation, Paul Darlington, M0XPD, "Takes a light-hearted look at the overlap between radio and audio, asking what it is that determines and limits what we hear from our receivers." It should be very interesting. Tom, WB8LCD has worked hard to get Paul to make this presentation. Let's have a great turnout.

Schedule of Events

On the calendar for upcoming meetings and activities are:

- May 7 - PCARS Antenna Day at the Freedom Township Community Park
- May 9th - PCARS Meeting - 7 pm - Kent American Legion Post 496
- May 11 - VE Testing at Club Site 7 pm for the Tech Class - Walk-Ins Welcome
- May 21-22 - NASA 75th Anniversary open house at NASA Glenn Research Center
- June 4 - VE Testing at Club Site 10 am - Walk-Ins Welcome
- June 11-12 - NASA 75th Anniversary open house at NASA Plumbrook
- June 13 - PCARS Meeting - 7 pm - Kent American Legion Post 496
- June 25-26 - FIELD DAY at the Freedom Township Community Park

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



First Tuesday - **Digital** - K8CAV
 Second Tuesday - **QRP/CW** - WB8LCD
QRP/CW is cancelled for May - see you in June !!
 Third Tuesday - **Antenna** - WA8AR
 Fourth Tuesday - **DX & Contest** - W8PT
 Fifth Tuesday - **Linux for Hams** - KB8AMZ

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



PCARS is on YouTube

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

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



Happy Birthday PCARS Members

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

WA8TSI	Rick Tenan	K8BBE	Chuck Girt
K8NYM	Wes Ferrell	K8KSU	Melanie Hardman
AC8RH	Gene Bunner		

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



PCARS Special Event Station

Tom, KB8UUZ

The PCARS Special Event Station celebrating the 10th anniversary of being an ARRL affiliated club was held on April 24th at the club site in Ravenna. This special event had been in the planning since November of last year and other than 10 meter propagation being lousy, everything else was perfect!

Chuck, W8PT and myself were at the club site about 9 am to get the radios and antennas hooked up for our 10 am start time. The radios were on and we started making contacts on 10, 15 and 20 meters. 10 meters would not cooperate, 15 was okay and 20 was doing okay as well. As the day wore on, we switched to 15, 20 and 40 meters. As the afternoon passed, 40 and 20 started getting busy. Later in the evening 40 was booming in.



We did not have RF noise problems since we were the only ones in the building. That made for a fun day.

The following members stopped in during the day: W8PT, KB8UUZ, KD8SKL, KB8TUY, WD8DAU, NR8W, K8CAV, WA8AR, N8KBX, WA8GCF, KB8CLH, KA8TOA, N8RLG and Christine. The Operators were: W8PT, KB8UUZ, KD8SKL, KB8TUY, WD8DAU, NR8W, K8CAV, KB8CLH and KA8TOA.

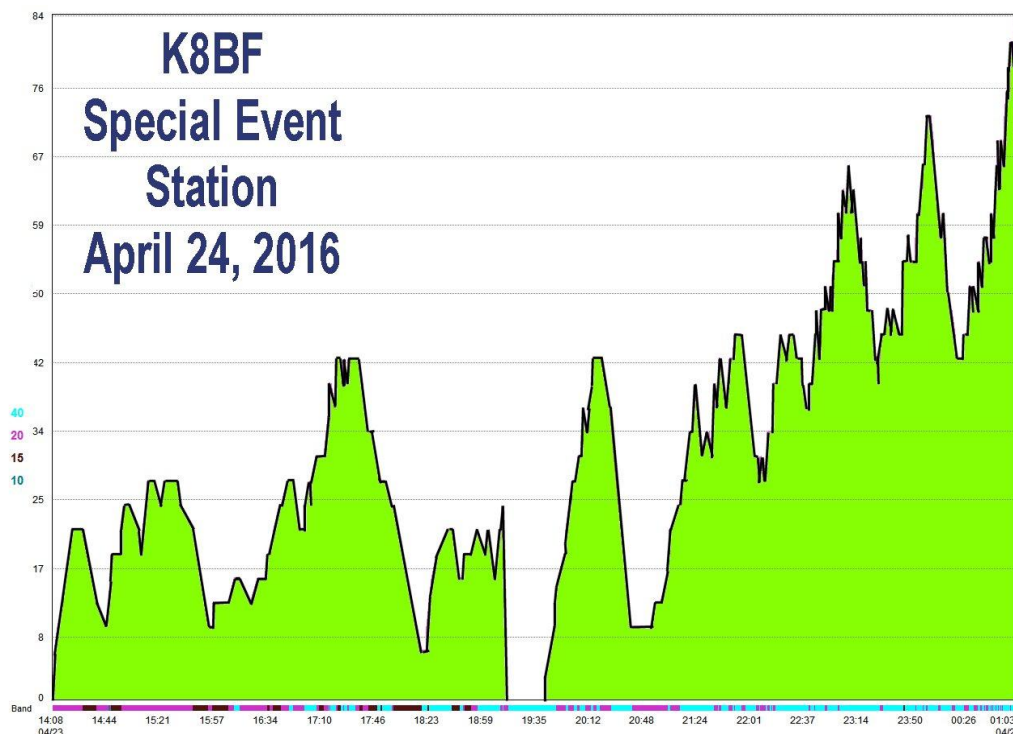
Total contacts made were 327. K8BF made 179 contacts on 40 meters, 128 on 20 meters, 19 on 15 meters and 1 on 10 meters. **K8CAV was the champ with 91 contacts.** NR8W and W8PT both had 56 contacts, KB8UUZ had 50 contacts, KA8TOA had 47 contacts, KD8SKL had 16 contacts and KB8TUY had 11 contacts. We contacted 40 states plus European Russia, Germany, Italy, Mexico, Canada, Puerto Rico and Venezuela.

A really nice certificate is available for those that contacted K8BF.

Everyone had fun and since we were the special event, hams were looking for us. We stayed on the same frequencies pretty much all day calling CQ.

Our best rate in making QSO's was approximately 84 per hour just before 9 pm. You can see the graph of our activity.

Note the dead time at about 19:20 (no QSO's) - *that was late lunch Pizza time.....*



PCARS
Join Now
Discover the FUN





K8BF



Special Event
Station

Special Event Station

K8BF

ARRL AFFILIATED CLUB

The Portage County Amateur Radio Service, Inc. (PCARS)
Celebrating 10 years as an ARRL Affiliated Club

With this certificate, K8BF confirms contact with your station during our 10 year ARRL Affiliation Special Event
K8BF is located at the PCARS Club Station in Ravenna, OH USA - Portage County, Ohio - Grid EN91 - CQ Zone 4

Date	Call Sign	UTC	Band	Mode	RST
23 Apr 2016					

PCARS was founded on November 14, 2005 and became an ARRL Affiliated Club on April 20, 2006.
Our club call sign is K8BF - "Kilo Eight Big Fun". During the first 10 years
over 300 amateur radio operators have become members of PCARS.
More information on PCARS and all of the award winning newsletters
since 2006 can be found on the club web site: www.portcars.org

Why the Black Squirrel in our logo? The Black Squirrel is commonly seen around Portage County, Ohio. Seems that some of these little guys
and gals got loose from Kent State University in Kent, OH back in 1961. They have migrated and thrived throughout our county. Kent State
University even has an annual Black Squirrel Festival. So when you spot a black squirrel - think PCARS!



April 24, 2016

PCARS VE Test Sessions

Robert, N8RLG
PCARS VE Team Liaison



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

June 4th - August 6th - October 1st - December 3rd

Also: May 11th at the Club Site 7 pm and June 25th at Field Day 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 copy of your expired Amateur Radio License - you must take and pass element 2 to re-instate your license.



PCARS Patches & Stickers

New PCARS logo patches (iron on) & stickers (stick on) are now available!!



Put the patch on your hat, your shirt, your jacket and show off that PCARS logo!! The patch is about 3". The embroidery on the white patch is in Red, Black and Blue. Cost for a patch is only \$2.00 each and can be obtained at any PCARS meeting. There are 2 types of stickers available - a 4" x 6" oval and a 3" x 10"

bumper sticker. Stickers are \$1 each. Show your pride in PCARS - Wear a patch, use the stickers! See the club Treasurer: **Amy, KD8SKL** or e-mail her at:

KD8SKL@portcars.org

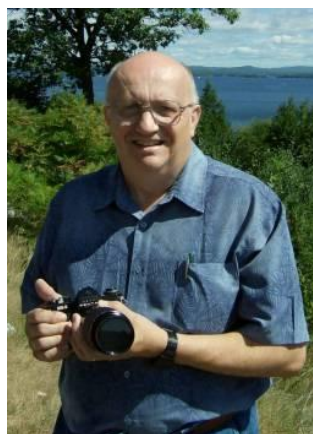


Amateur Radio's Very First Satellite

The Amazing Story of OSCAR-1

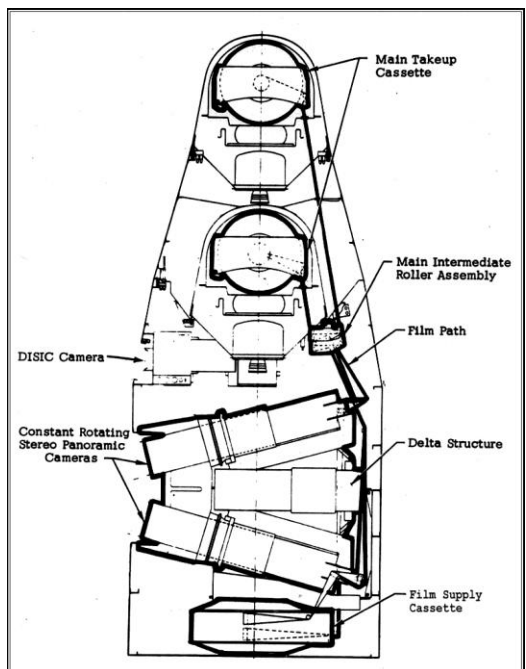
Keith Baker, KB1SF / VA3KSF

Private groups of Amateur Radio operators around the globe have built and sent dozens of Amateur Radio communications and science satellites to orbit since the first, OSCAR-1, was launched on December 12, 1961.



That date already held a special place in radio history as it was the 60th anniversary of the first radio transmission across the Atlantic Ocean. Indeed, on December 12, 1901, Guglielmo Marconi completed his now-famous transmission and reception of Morse code for the letter S -- three dots -- from England to Newfoundland.

However, the story of the first amateur radio satellite actually began much earlier...in April, 1959...less than two years after the (then) Soviet Union had orbited the very first artificial satellite (their Sputnik 1). Along about that time, the author of the Semiconductor Column for *CQ Magazine*, Don Stoner, W6TNS, published a design for a 50 Milliwatt, 2m transistorized transmitter that he had successfully tested across the San Bernardino Mountains of California... a distance of some 120 miles. Needless to say, he was absolutely amazed that such a tiny transmitter could be heard over that great a distance at that frequency and soon realized that it probably would work just as well if it were 120 miles overhead.... in a satellite.



A block diagram of the CORONA upper stage. The exposed film wound into a canister at the top of the vehicle for later ejection, de-orbiting and collection. (Courtesy: USAF)

So, while discussing the details of his latest brainchild in his *CQ Magazine* column, he casually asked his readers: "Does anyone have a spare rocket for orbiting purposes?"...never dreaming that his flip comment would ever amount to much.

As it turned out, one of the radio amateurs (hams) employed by Lockheed at the time, Fred Hicks, W6EJU, read Don's article and began to think that, indeed, it just might be possible to find a launch for such a satellite through his association with Lockheed and the US Air Force. Remember, at the time, the US Military was the only organization in the United States that was launching payloads into orbit.

After discussing the his "half baked" idea with (an amazed and gratified) Don, he and a group of similarly interested hams in the San Francisco Bay area of California formed what later became known as "Project OSCAR"...in true military fashion, the OSCAR being an acronym for "Orbiting Satellite Carrying Amateur Radio".

Fred and his group soon contacted the (then) Southwest Division Director of the American Radio Relay League (ARRL) and the head of the Jet Propulsion Laboratory's Space Instrumentation System, Dr. Harry L. Richter, W6VZA, and plans started to come together for the very first amateur radio satellite.

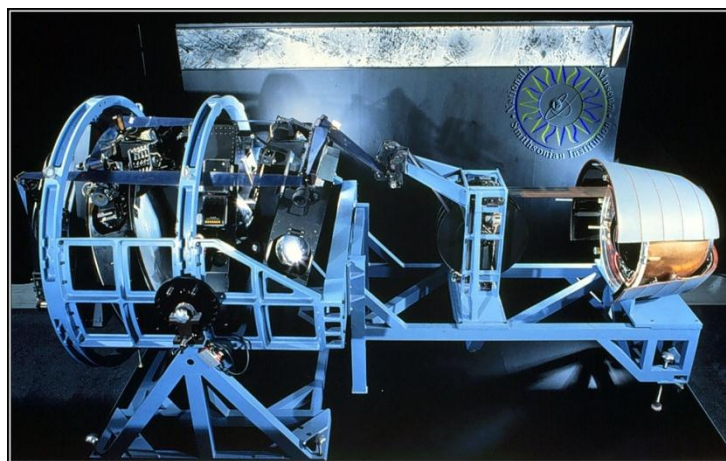
In the true spirit of Amateur Radio, the Project OSCAR organization would later develop into an impressive group effort that included not only Don and Fred, but other well-known hams of the day including Hank Brown, W6HB; Bill Orr, W6SAI; George Jacobs, W3ASK; Nick Marshall, W6OLO; Chuck Townes, K6LFH; and Lance Ginner; K6GSJ along with many others.

But taking the idea of OSCAR from concept to reality involved clearing a number of hurdles, the least of which was the fact that the launch opportunity being proposed for OSCAR 1 would involve what was at that time a very highly classified (that is, Top Secret) US military project called CORONA.

The CORONA Program

Back in 1955, with Cold War anxiety skyrocketing, then US President Eisenhower made a remarkable proposal to his Russian counterpart, Premier Nikita Khrushchev. He suggested that each country allow the other to conduct reconnaissance flights in the air and from space over each other's country, and that the imagery obtained be given to the United Nations. The Soviets, however, flatly rejected this "Open Skies" proposal, most likely because it would show just how inflated Khrushchev's boast that his country was building nuclear-tipped Intercontinental Ballistic Missiles (ICBMs) "like sausages." Thereafter, the United States and the Soviet Union proceeded separately to learn about each other's capabilities...in secret.

As a result of Khrushchev's rebuff, in 1958, President Eisenhower approved a program that would answer questions about Soviet missile capabilities and replace risky U-2 reconnaissance flights over Soviet territory that an "Open Skies" approach would have provided. Instead, the Central Intelligence Agency (CIA) and the Air Force would jointly develop satellites to photograph denied areas from space. That program had both a secret mission and a secret name--CORONA. It was organized under the new Keyhole security protocols that, at the time, constituted one of the most secret security orders in American history.



A full size mockup of the CORONA upper stage is now displayed in the Smithsonian Institution. (Courtesy: Smithsonian Institution)

CORONA was conceived in an era when facts about Soviet capabilities were scarce and fears were rampant. The size and nature of the Soviet threat back then were largely unknown, but many believed that Khrushchev's boasts were very real and that the United States was falling dangerously behind Moscow in critical areas. Indeed, the Soviet threat grew in the imagination of the public as US leaders debated the supposed "bomber gap," the "missile gap," and the "science gap." to the point that, by the late 1950's, the successful launch of the first Soviet Sputnik in 1957 (along with subsequent launches of satellites far larger than anything the United States had orbited up to that time) raised public fears that the Soviets were developing scores of rockets and huge satellites capable of dropping nuclear bombs on the United States from space.

How It Worked

Largely as a result of these public pressures, the CIA and the US Air Force developed this first-generation space program with great speed and tight secrecy. The CORONA vehicle was launched by a THOR booster, usually from Vandenberg AFB in California into a roughly polar orbit. It used an AGENA spacecraft as the upper stage that also carried all the CORONA equipment. While in orbit, Corona took photographs with a constant rotating stereo panoramic camera system (developed by Itek Corporation) and then loaded the exposed photographic film (specially made by Kodak for this purpose) into a recovery canister on the nose of the



Exposed CORONA film was wound into its upper stage capsule that was later de-orbited and most often snagged in mid-air over the Pacific Ocean by a USAF C-119 cargo plane. (Courtesy: USAF)

AGENA spacecraft. Resolution in early flight years was in the range of 35 to 40 feet. The canisters (called by the slang term "film buckets") were then separated, de-orbited and then recovered in mid air by specially equipped Air Force C-119 aircraft while floating back to Earth via parachute

The CORONA system successfully photographed its first intelligence target on August 18, 1960, after a number of failures and then recovered the film capsule as it dropped from space. This happened only 110 days after the Soviets had shot down a U-2 spy plane piloted by Francis Gary Powers, an embarrassing setback for the United States that effectively ended all U-2 flights over Soviet territory.

By today's standards, the first images snapped by CORONA satellites from orbit looked fuzzy and distant, but technical advances soon produced sharper pictures. By 1972, CORONA was routinely delivering resolutions of six to 10 feet. By the 1970s, flights could remain on orbit for 19 days, provide accurate attitude, position, and mapping information, and return coverage of some 8,400,000 square nautical miles per mission.

Needless to say, such photos held enormous significance for the course of the Cold War as they provided information that allowed US leaders to weigh the actual Soviet threat and measure their response. Even the very first photos from the CORONA project clearly debunked any remaining "missile gap" fears. If anything, the photos gave tangible proof that such a "gap"...if it had ever existed at all...was clearly very much in favor of the United States and that Khrushchev's "building missiles like sausages" remark was nothing but bunkum.



Early CORONA imagery wasn't the greatest, but it was good enough to show the CIA's photo interpreters major features (such as this image of the Pentagon) on the ground.

(Courtesy: USAF)

However, because these efforts were all being done in secret, the wealth of satellite imagery CORONA was providing US intelligence experts couldn't be released to the general public to allay their "missile gap" fears. To do so at the time might have very easily upset the delicate balance of national security in an era when both the United States and Soviet Union possessed more than enough nuclear weapons to virtually annihilate each other many times over.

CORONA "Firsts"

CORONA ushered in a whole series of technological firsts that contributed to advancements in other areas. The program taught US technicians how to recover objects from orbit--methods that were later adapted by the National Aeronautics and Space Administration (NASA) to recover astronauts. It also provided a fast and relatively inexpensive way to map the Earth from space. Before CORONA, cartographers had adequately mapped only a quarter of the Earth's surface. CORONA also provided the first stereo-optical images from space, which gave photo interpreters a 3-dimensional view of terrain. But, clearly, the most important contribution of the CORONA system to national security remains the intelligence it provided to US military planners. CORONA routinely looked through the so-called "Iron Curtain" and helped lay the groundwork for later disarmament agreements and the eventual collapse of the Berlin Wall.

In all, there were 144 Corona satellites launched, of which 102 returned usable photographs. These satellites produced over 800,000 images taken from space, and 2.1 million feet of film. Individual images on average covered approximately 10 miles by 120 miles.

CORONA Finally Revealed

But, as I said, all of these fantastic technological accomplishments were very effectively kept from public view until President Clinton signed an Executive Order on February 22, 1995 directing the declassification of intelligence imagery acquired by the first generation of US reconnaissance satellites. The order provided for the declassification of more than 860,000 images of the Earth's surface, collected between 1960 and 1972. Today, all 800,000 images can be purchased for a fee via the [U.S. Geological Survey Web site at: http://eros.usgs.gov/#/Find_Data/Products_and_Data_Available/Satellite_Products](http://eros.usgs.gov/#/Find_Data/Products_and_Data_Available/Satellite_Products)

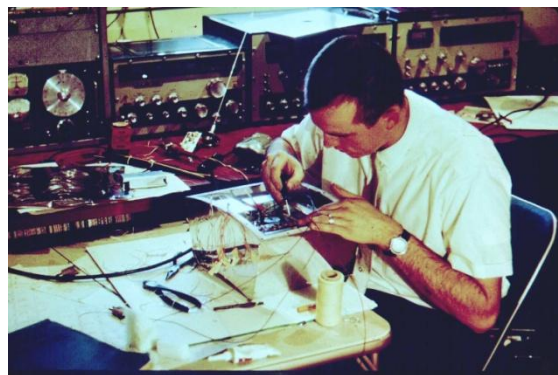
OSCAR 1 and CORONA

Now, obviously, with such a highly classified project keeping what the US Government was *really* up to with CORONA a secret was of utmost importance. So, they had to come up with an effective cover story to feed to the public so as to disguise the real intent of the project from "prying eyes". As a result, the first CORONA satellites and their launches were deliberately cloaked in disinformation as being part of a scientific and space technology development project called the *Discoverer* program. And what better way to add to the cover story (and keep a highly classified project secret from prying eyes) than to carry along a satellite built, quite literally, by a bunch of "amateurs" in their basements and garages?

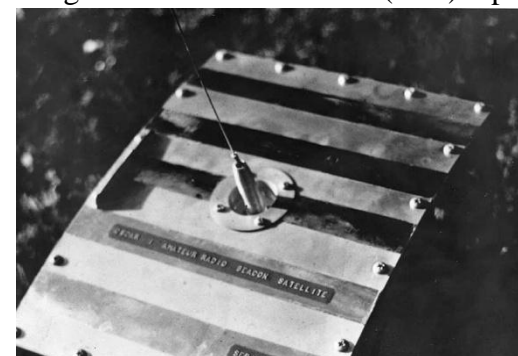
The Rest of The Story

Indeed, that's *exactly* what happened! And one of the key players in getting OSCAR-1 into orbit was a California radio amateur named Lance Ginner, K6GSJ.

Just like what often happens in our hobby, as a young up and coming aerospace engineer, Lance found himself in the enviable position of having his ham radio hobby fit seamlessly with the unique responsibilities of his "day job". Lance started work at the Lockheed Missiles and Space Company in Sunnyvale California in January of 1960. He was 21 years old at the time and was immediately put to work in the Agena vehicle checkout complex doing the final checks on the (then) top-secret CORONA upper



Lance Ginner, K6GSJ, performs the final wiring of the flight model OSCAR-1 satellite on a card table set up in the "ham shack" of his California home. (Courtesy: Project OSCAR)



The Plastic Dymo Label Tape on the top of the flight model OSCAR-1 satellite reads: "OSCAR 1 AMATEUR RADIO BEACON SATELLITE" (Courtesy: Project OSCAR)

stage vehicles that would eventually carry their classified payloads into orbit. Initially Lance was responsible for designing and building test aids to facilitate the final checkout of these satellites prior to their shipment to Vandenberg AFB, California for eventual launch.

About this same time (and being an active ham operator that he was) Lance became aware of the (then) fledgling OSCAR project through his work association with Chuck Townes, K6LFH, and Nick Marshall, W6OLO, both of whom also worked at Lockheed. As a result, Lance soon found himself smack in the middle of what would later become a pioneering effort in the proud history of amateur radio.



Lance Ginner, K6GSJ, looks over the carrying structure that will loft OSCAR-1 to orbit on the CORONA upper stage. Note the faint arrow pointing to OSCAR-1's \$1.15 Sears-Roebuck spring ejection mechanism. (Courtesy: K6GSJ)

Politics

Needless to say, because of the highly classified nature of the main payload, getting the early OSCAR satellites approved for launch was a highly politicized process. The challenges the Project OSCAR board faced in obtaining the necessary permissions for them to fly a "home built" satellite on a classified space mission was absolutely daunting to say the least!

It's also important to remember that the idea of a small, erectable, sub-satellite being carried and launched into its own orbit as a secondary payload was absolutely unheard of at the time. As a result, convincing the various US Government and contractor agencies involved in the CORONA project (such as the CIA and the Air Force not to mention their bosses at Lockheed!) that that the very first

object to test that idea should be one built by "amateurs" who had no official credentials to do such things was seen by CORONA project officials as a *huge* risk. Indeed, a premature release the OSCAR satellite could keep the Agena satellite from deploying its booster adapter, thus bringing the main mission to a catastrophic (not to mention *very* expensive!) end.

As a result, there were numerous meetings with government and military representatives (including many well-connected hams at the ARRL and elsewhere) all in an effort to obtain the necessary permissions for OSCAR-1 to fly. These discussions, along with the creation of an OSCAR-1 "White Paper", helped establish both the political and technical credibility the Project OSCAR team needed to obtain the necessary permission to launch. Indeed, Lance later noted that obtaining the necessary bureaucratic efforts and permissions *well* exceeded those required to actually build the satellite.

OSCAR-1 At a Glance

The OSCAR-1 satellite consisted of a small curved box that measured 9 inches by 12 inches by 6 inches and sported a single, spring-loaded, 2m-whip antenna on its top surface. OSCAR-1 did not offer two-way communications. Rather, its non-rechargeable, battery-operated radio simply transmitted a Morse beacon with 140 Milliwatts of power on a frequency of 144.983 MHz. While 140 Milliwatts doesn't seem like much power by today's standards, OSCAR-1's transmitter still put out some *fourteen times* the power of the 10-milliwatt radio carried in Explorer-1, America's very first satellite.

It's also important to remember that even with this simple transmitter arrangement, there were still some daunting technical risks to be overcome after launch in order to end up with an operating satellite on orbit. For example, back in 1961, there were no commercially available transistors that could put out any real power at 144 MHz. So, the Project OSCAR experimenters resorted to a prototype part manufactured by Fairchild Semiconductor Corporation that was not even on the market yet. Indeed, as Lance later noted, back in those days, "You didn't have someone looking over your shoulder saying, you can't do it that way. That's because no one *had* ever done "it" before!"

For his part, Lance was directly involved in the construction of all the early OSCARS. In fact, Lance did most of the internal wiring of OSCAR-1 in the basement of his California home as well as all of the environmental testing and integration of the satellite onto the launch vehicle.



Bob Allison, WB1GCM, an ARRL Laboratory engineer, poses at the 2011 AMSAT Space Symposium in San Jose, California with the backup OSCAR-1 satellite that he recently restored to working condition. (Courtesy: Author)

OSCAR-1 "Firsts"

OSCAR-1 holds the record for not only being the very first non-military satellite; it was also the very first secondary payload ever to be launched into orbit from a rocket and go into its own orbit. Needless to say, as OSCAR-1 was the first satellite to reach orbit as an auxiliary package ejected from a parent spacecraft, its ejection mechanism was of great interest to other scientific groups who also wished to place their own free flying satellites into orbit. When these groups approached the Air Force for such information, they were routinely advised to study the OSCAR-1 design.

But what is even more amazing was that OSCAR-1's innovative ejection system (which was subjected to detailed stress analysis as well as careful mechanical and thermal balancing before launch) was all built around a \$1.15 cent spring purchased "off the shelf" from a local Sears and Roebuck store. So, in that sense, OSCAR-1 ushered in the era of "Commercial Off-The-Shelf"(COTS) space hardware as well.



Success!

On December 12, 1961, OSCAR-1's Discoverer-36 launch vehicle hurtled the 10-pound satellite into an elliptical orbit ranging from 152 to 295 miles above the Earth's surface. Soon after launch, its 140 Milliwatt beacon successfully activated and then began beeping out the letters "HI" (the telegraphic laugh) on its 145 MHz downlink. However, besides being a beacon, there was also a bit of scientific value in OSCAR's Morse greeting in that the temperature inside the satellite controlled the relative speed of the message.

Unfortunately, OSCAR-1's battery wasn't rechargeable and had only enough strength to power the transmitter for 22 days. However, during that brief time (by today's standards), nearly 600 radio amateurs in 28 nations around the globe made careful measurements of its downlink signal and forwarded their observations to the Project OSCAR data reduction center. Sadly, the satellite's low altitude allowed it to only stay in orbit above Earth for about 50 days. As a result, OSCAR-1 slipped to only stay in orbit above Earth for about 50 days. As a result, OSCAR-1 slipped

OSCAR-1 was successfully launched as a secondary payload on Discoverer XXXVI down into the atmosphere and burned up on January 31, 1962. (it's unclassified CORONA

cover name) on December 12, 1961 aboard a THOR-Agena rocket from Vandenberg AFB, California. (Courtesy: USAF)

Fast Forward 50 Years

As December 12, 2011 would mark the 50th anniversary of the launch of OSCAR-1, in commemoration of that event, laboratory engineers at the ARRL decided to refurbish a backup model that had been sitting in storage for many years at ARRL Headquarters. The model used for school demonstrations soon after the original one was launched and had subsequently been donated to the League for safekeeping. So, early in 2011, Bob Allison, WB1GCM, an ARRL test engineer stepped up to the task and expertly "reverse engineered" the unit so as to get it back up and operating.



A close-up of the inner workings of OSCAR-1 (Courtesy: Author)

He first displayed his restored handiwork at the ARRL Expo booth during the 2011 Dayton Hamvention®, much to the interest and amazement of attendees there. Bob also brought the model along with him to the Radio Amateur Satellite Corporation's (AMSAT) Annual Meeting and Space Symposium held in San Jose California in November 2011. There, he once again had the model set up and beeping its restored "HI" message to all attendees. (AMSAT, you may recall, is the follow-on organization that picked up much of the work of Project OSCAR back in the 1970s).

During the Symposium, Bob also got a chance to interview Lance Ginner to discuss Lance's own ham radio beginnings along with his involvement in the building and launching of the early OSCARs. In return, Bob told Lance of his own efforts to restore the OSCAR-1 backup to working condition. At press time, this most interesting interview was still available at <http://www.youtube.com/watch?v=HgKc2ZY3LCA&feature=youtu.be>

Also, during the AMSAT meetings in San Jose, Bob was frequently heard commenting to the many viewers of his restoration efforts that he had been frustrated in his attempts to locate an original schematic of OSCAR-1's transmitter so as to restore the backup OSCAR-1 satellite to its "absolutely original" operating parameters.



Lance Ginner, K6GSJ, primary builder of OSCAR-1 holds an engineering model of AMSAT's newest satellite, Fox-1, at the 2011 AMSAT Space Symposium in San Jose, California. (Courtesy: Author)

That was, of course, until Lance Ginner, walked into the room with a copy of the original OSCAR-1 transmitter schematic tucked under his arm, and then handed it over to a (now *broadly* smiling) Bob Allison!



Bob Allison, WBIGCM, an ARRL Laboratory engineer conducts a "You Tube" interview with Lance Ginner, K6GSJ, primary builder of OSCAR-1 at the 2011 AMSAT Space Symposium in San Jose, California. (Courtesy: Author)

Sources and References:

- Morrison, Mark, "Amateur Radio And The Cosmos - Part 4". Hicksville, NY: *CQ VHF Magazine*, Spring 2010 Edition.
- "Early Satellites in US Intelligence", Remarks by Admiral William O. Studeman, Acting Director of Central Intelligence at the Signing of the Executive Order Declassifying Early Satellite Imagery, 24 February 1995.
- Hartzell, David: "Between a Rock and Outer Space: Interview with OSCAR Pioneer Lance Ginner". Silver Spring, MD, *The AMSAT Journal*, September / October 2006 Edition.
- Davidoff, Martin, *The Radio Amateur's Satellite Handbook*, 1998: American Radio Relay League, Newington, CT. Pages 1-4.

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Jim, KC8PD/AAF5PD
Radio Officer, Portage County OHS/EM
Communications Unit/RACES



It is that time of the year again. Yep, public service event time and your help is always appreciated. Upcoming events are listed at the end of the column and here are some tips for extra items to bring if you are volunteering:

- Always have some form of ID that identifies you as an amateur radio operator and communications volunteer. If you have an ARES® ID, wear it. You should not need to have your call sign plastered all over you on hat, jacket, shirt, pins, buttons, etc.
- A cell phone. If it makes you feel better just think of it as another radio. Program the phone with primary contact numbers for other event volunteers, NCS, etc.
- A headset. Not only can there be circumstances where the ambient noise may prevent you from hearing even a speaker/mic, there could be a situation where you do not want staff to be bothered by the net audio or casual bystanders to hear traffic that may be confidential or none of their concern.
- Charged spare batteries for your HT. Even better, also have a battery pack for your HT that uses disposable AA batteries. Even batteries that you believe are fully charged may turn out to not have the operational life that you expect.
- If you are going to be working at a location where you should be readily identifiable as a communications volunteer, wear an ARES or other similar hi-viz green vest. Vehicle placards should also be used if you are deployed with your vehicle.
- Sunblock, hat, sunglasses. Of course this is seasonal but it beats getting roasted.

Upcoming ARES® of Portage County public service events and the point of contact for the event:

12 June, Champ Racing Great Western Reserve Triathlon, Mike, KD8FLZ

16 June, Marlene Watt 5k Race, Mike, KD8FLZ

16 July, Headwaters Adventure Race, Jim, KC8PD

10 September, Mantua Potato Stomp, Jim, KC8PD

Geauga County ARES also needs volunteers for the Blossom Time Run on 29 May. Contact Bob, K8FEY, at ke8fey@portcars.org for more information. Volunteers may also still be needed for the Rite Aid Cleveland Marathon on 15 May. The registration link is <http://goo.gl/forms/YujC43imM9>, Mat, KC8NZJ, is coordinating the event.

Youth DX Adventure Raffle

Dave Kalter Memorial



Tom, WB8LCD

The Youth DX Adventure is having their trip this summer to SABA Island (PJ6) on August 2 – 9, 2016. <http://www.qsl.net/n6jrl/>

PCARS has been a supporter of this program. They will have a booth set up at the Dayton Hamvention®, so stop by and say hello to our friend Don, N6JRL.



At the May PCARS meeting I will have raffle tickets for the Alinco DX-SR8 HF transceiver that they are raffling as a fund raiser. The tickets are \$5 each, or 5 for \$20. See me at the meeting, or contact me directly.

Mini Maker Faire Report

Rick, K8CAV



Kent State University held its third annual Mini Maker Faire at the University's library and PCARS was there, also for the third year to represent Amateur radio to the Maker community and to the public at large.

This event is an excellent opportunity to showcase Amateur Radio to young adults and even some children and highlight both the 'Maker' and high tech aspects of Amateur radio.

This year we focused on software defined radio receivers, basic text e-mail via RF using the Winlink 2000 system, Arduino computers in Amateur Radio projects, and a



Foxhunting demonstration. The SDR demonstration had several projects, a receiver picking up and decoding signals from an outdoor digital thermometer using a Raspberry PI, a receiver using ATS software to display a map of FAA aircraft and their current locations, and a demonstration of how to use software to build numerous types of receivers using a SDR hardware module, all of which captivated visitors.

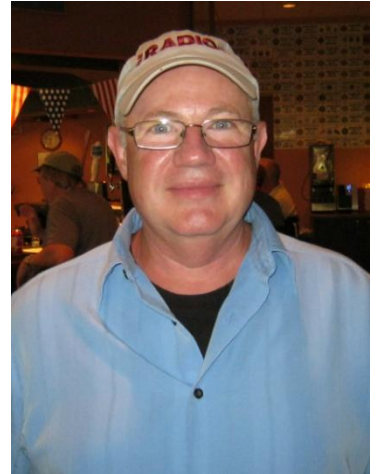
Many thanks to Jim AC8NT, Steve K8SRR, Mike KB8TUY, and Nick AC8GQ for being there to make this a successful event. Also thanks to Zeb KD8WZS who was not able to be there this year but who coordinated everything with Kent State University for our participation.



K8SRR, K8CAV, AC8NT, KB8TUY, AC8GQ

Dayton Hamvention® 2016

Tom, WB8LCD



Back in 1952, the very first Dayton Hamvention® was held. Now, 65 years later, Hamvention® has grown into one of the largest Ham Radio Expositions in the World! There will probably be more than 25,000 hams in attendance from all over the world. Every major manufacturer of Amateur Radio products will be represented. There will be activities and seminars. ARRL has a huge area where you can get information on all of their programs, and/or purchase ARRL logo items and publications. This is the **“Big One”**!

From our area it's about a 3 hour drive each way. If you aren't going, you're making a big mistake! You owe it to yourself, as a ham, to get there and check out everything your chosen hobby has to offer. There are people who travel from all over the world to be here, spending thousands of dollars, pounds, yen, puca shells, whatever, just to get here and be a part of it. We can do it as a day trip. Starting Friday, May 20th and running through Sunday, May 22nd, its a jam packed weekend of Ham Radio Fun.

I guarantee that you will enjoy the show. The flea-market is unbelievable. Just about anything ham radio related from years gone by is there for you to add to your collection. No arguments – you just gotta go!

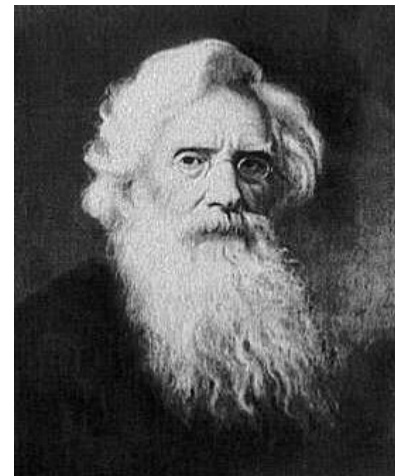
With the number of PCARS members showing up for our group photo the last couple years it's getting harder to conveniently fit our group shot in any of the indoor areas. Last year I noticed a group out in front of Hara Arena for their picture. That is what I want to try for this year. From where the buses come in to the drop off point, walk to the front of the Arena, as if you are going to enter through the main entrance. Once you round the corner you'll see the word “PUB” mounted on the outside wall. That is where we will meet for our group photo this year – under the “PUB” sign. The photo will be taken at 11:00AM on Saturday, May 21st. Don't be late!



New Location for the annual PCARS Hamvention Photo

What Hath God Wrought

May 24, 1844 - In a demonstration witnessed by members of Congress, American inventor Samuel F.B. Morse dispatches a telegraph message from the U.S. Capitol to Alfred Vail at a railroad station in Baltimore, Maryland. The message—"What Hath God Wrought?"—was telegraphed back to the Capitol a moment later by Vail. The question, taken from the Bible (Numbers 23:23), had been suggested to Morse by Annie Ellworth, the daughter of the commissioner of patents.

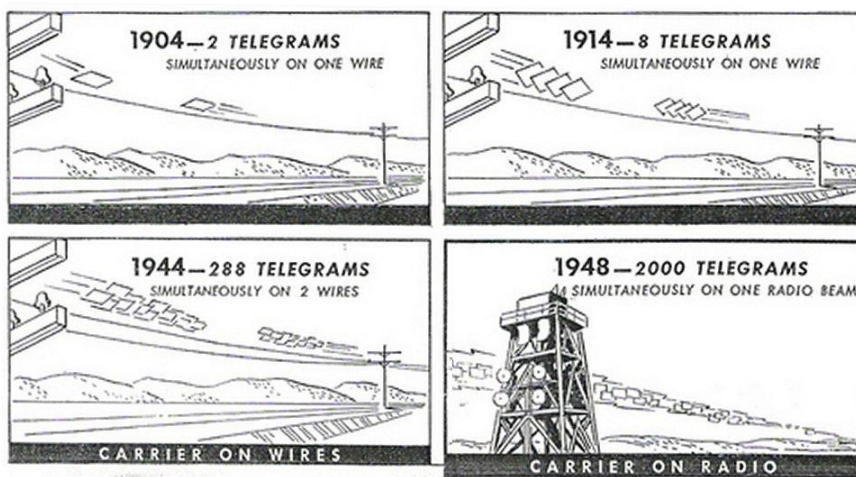


The Baltimore-Washington Telegraph Line was the first long-distance telegraph system set up to run overland in the United States, the intention being to utilize the telegraph code system - **Morse Code** - invented by Samuel Morse. Along with similar transmission networks in Europe, it was a precursor to transatlantic telegraphic communications and later technologies such as telephone, fax and email.

Morse, an accomplished painter, learned of a French inventor's idea of an electric telegraph in 1832 and then spent the next 12 years attempting to perfect a working telegraph instrument. During this period, he composed the Morse code, a set of signals that could represent language in telegraph messages, and convinced Congress to finance a Washington-to-Baltimore telegraph line. On May 24, 1844, he inaugurated the world's first commercial telegraph line with a message that was fitting given the invention's future effects on American life.

Just a decade after the first line opened, more than 20,000 miles of telegraph cable crisscrossed the country. The rapid communication it enabled greatly aided American expansion, making railroad travel safer as it provided a boost to business conducted across the great distances of a growing United States.

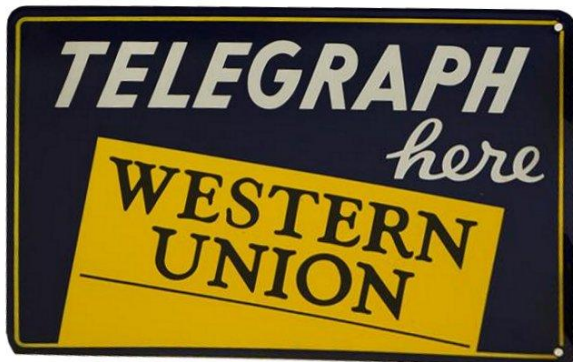
Western Union completed the first transcontinental telegraph line in 1861, dooming the Pony Express, but aiding forces in the Civil War. Mobile telegraph stations, like this one with hastily strung wires, connected scattered military units. President Lincoln



Western Union's Progress in Improving Facilities for Transmitting Telegrams.

kept up with events of the war through frequent dispatches from General George McClellan. One Confederate attack failed when soldiers became tangled up in Union telegraph wires strung from tree stump to tree stump. Morse probably never expected telegraph wires to be a booby-trap!

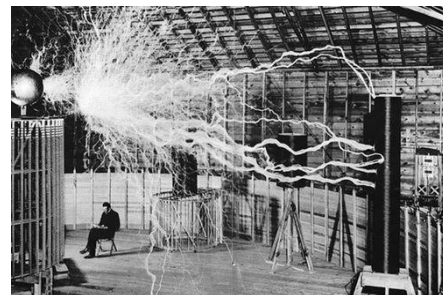
A generation or two ago, people would send telegrams to announce important news such as a new birth in the family.



PCARS Thursday Net Control

Tom, WB8LCD

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



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

May	
5	KB8UHN
12	WB8LCD
19	NR8W
26	KB8UUZ

July	
7	KC8PD
14	N8QE
21	WB8LCD
28	NR8W

June	
2	WB2DFC
9	K8IV
16	WB8LCD
23	KD8SKL
30	K8CAV



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

Contest Calendar

May 2016	
10-10 Int. Spring Contest, CW	0001Z, May 7 to 2359Z, May 8
7th Call Area QSO Party	1300Z, May 7 to 0700Z, May 8
Indiana QSO Party	1500Z, May 7 to 0300Z, May 8
Delaware QSO Party	1700Z, May 7 to 2359Z, May 8
New England QSO Party	2000Z, May 7 to 2400Z, May 8
Arkansas QSO Party	1400Z, May 14 to 0200Z, May 15
CQ WW WPX Contest, CW	0000Z, May 28 to 2359Z, May 29

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



Field Day Update

Chuck, W8PT

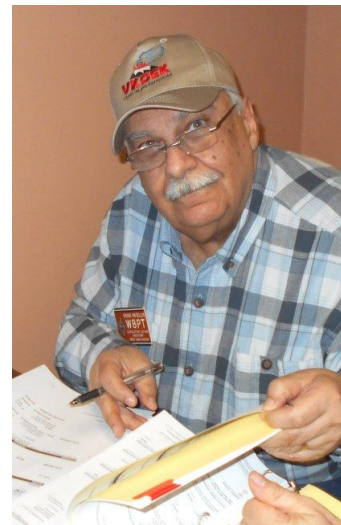
Just a few words about our upcoming Field Day event. I am happy to report that Tom Sly, WB8LCD, has volunteered to be our Safety Captain this year, along with being my Vice Chairman. **Thank you Tom!**

As many of you have heard, there will be some road construction going on just short of the new Field Day site. We have recently heard that there will be other roads closed in the area as well. If we look at this in a positive light, it's our taxes at

work. But if we look at this realistically, I would say that someone has been vacationing too long in Colorado. (You can start humming the song, "Smoke Gets In Your Eyes" right about now.)

We will find ways to get all of you to our Field Day venue even if we have to get a chopper to airlift our equipment just as the DXpeditions do. Don't laugh, I'm sure that someone in our club can say, "Hey, I know a guy.....".

All kidding aside, I'm sure that Ohio's DOT is simply trying to keep the bridges over the turnpike in good condition. We will keep you all informed so that none of you who are planning to attend PCARS Field Day will get lost.



IMPORTANT NOTE FOR TRAVELING TO PCARS ANTENNA DAY AND FIELD DAY

State Route 700 will be **CLOSED** at the I-80 (Turnpike) bridge starting May 2nd and will require a detour for everyone traveling to our Field Day site at the Freedom Township Community Park for both Antenna Day and Field Day except for those traveling from north of the turnpike overpass on Route 700. Below is a map and detour directions to get to the Freedom Township Park which is located at the northwest corner of State Route 700 and Streeter Rd.

Coming from the SOUTH (Ravenna area) on State Route 88:

1. Route 88 NORTH to Route 303.
2. RIGHT on Route 303 east to Route 88 north (½ mile)
3. LEFT (north) on Route 88 then immediate LEFT (north) on Nichols Rd.
4. NORTH on Nichols Rd. to Streeter Rd.
5. LEFT (west) on Streeter Rd., cross Route 700 to Park Entrance on Streeter Rd.

Coming from the NORTH (Hiram) area: No detour necessary

1. Route 700 SOUTH to Streeter Rd.
2. RIGHT (west) on Streeter Rd. to park entrance

Coming from NORTH (Mantua area) on State Route 44:

1. Route 44 SOUTH to Route 303.
2. LEFT (east) on Route 303 to State Route 88
1. LEFT (north) Route 88 then immediate LEFT (north) on Nichols Rd.
2. NORTH on Nichols Rd. to Streeter Rd.
3. LEFT (west) on Streeter Rd., cross Route 700 to Park Entrance on Streeter Rd.

Coming from the NORTH (Garrettsville area) on Route 88:

1. Route 88 SOUTH to Anderson Rd. just north of I-80.
2. RIGHT (west) on Anderson Rd. to Nichols Rd.
3. RIGHT (north) on Nichols Rd. to Streeter Rd.
4. LEFT (west) on Streeter Rd., cross Route 700 to park entrance.
- 5.

Alternate Route 1:

1. Route 88 SOUTH to Nichols Rd. just north of Rt. 303
2. SHARP RIGHT (north) on Nichols Rd. to Streeter Rd.
3. LEFT (west) on Streeter Rd., cross Route 700 to park entrance.

Coming from WEST (Streetsboro area) on Route 303:

1. Route 303 EAST to State Route 88
2. LEFT (north) Route 88 then immediate LEFT (north) on Nichols Rd.
3. NORTH on Nichols Rd. to Streeter Rd.
4. LEFT (west) on Streeter Rd., Cross Route 700 to Park Entrance on Streeter Rd.

Coming from EAST (Windham) area on Route 303:

1. Route 303 WEST to Route 88
2. RIGHT (north) on Rt. 88 then immediate LEFT (north) on Nichols Rd.
3. Nichols Rd. NORTH to Streeter Rd.
4. LEFT (west) on Streeter Rd. Cross Route 700 to park entrance.



Field Day Flex Station

Rick, K8CAV



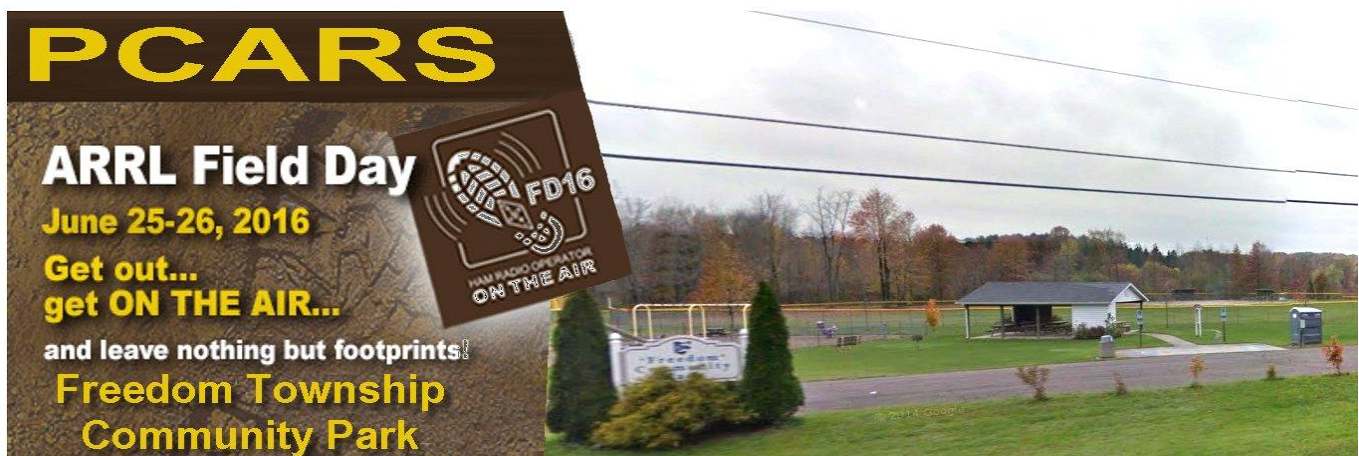
You've probably heard of the Flex Station when people are talking about Field Day but you may not know exactly what that means. PCARS runs class 4A for Field Day, meaning we have four active HF stations operating during Field Day. Three of them are Mode and/or Band specific. One is strictly phone on 20 meters, one is 40 meter phone one is CW on different HF bands.

The Flex station is different in that with a few exceptions, we can operate on all of the HF bands using phone, CW, and digital. The trick is to make sure we're not operating on the same mode in the same band as any of the other stations. That means we can never operate phone on 20 meters or 40 meters, and we can't operate CW on a band that the CW station is currently operating, but that we can operate digital on all HF bands. To maximize our contacts the Flex Station will operate on 10 meters and 15 meters during the daylight hours, and start moving to lower bands as the day grows short and moves into night. Below is a chart that summarizes band/mode combinations the Flex Station can use.

10 meters: phone, CW, and digital – make sure CW station is not on 10 if operating CW
15 meters: phone, CW, and digital – make sure CW station is not on 15 if operating CW
20 meters: CW and digital – make sure CW station is not on 20 if operating CW
40 meters: CW and digital – make sure CW station is not on 40 if operating CW
80 meters: CW and digital – make sure CW station is not on 80 if operating CW

With Antenna Day coming up fast (May 7th), I need some help in setting up the Flex Station. We're going to be putting up an 80 meter and 40 meter Inverted-V at 40 ft. high, and Jack, N8BI is putting up a tri-band beam and will need help as well. It would be great to have at least three or folks helping so please let me know if you can be there and e-mail at k8cav@portcars.org.

Naturally I also need help for setup and tear down for Field Day, and most important, operators and loggers so drop me a note and let me know when you want to operate or log and what time you'd like to be slotted into.



Special Speaker for the May PCARS Club Meeting

Tom, WB8LCD

Our May meeting of PCARS will feature **Dr. Paul Darlington, M0XPD**. Paul will be in the US for the QRPARCI “**Four Days In May**” (FDIM), in connection with the Dayton Hamvention®. Paul will be a featured speaker at the FDIM.



Dr. Paul is an engineer and educator, with a background in acoustics (same as H.P. Maxim), electronics and engineering dynamics. He got involved in Amateur Radio and was first licensed in 2008. Although relatively new to the hobby, he has just been awarded the Radio Society of Great Britain's Wortley-Talbot Trophy for “outstanding experimental work in amateur radio” and the RSGB's Don Cameron G4SST Memorial Trophy for “outstanding contribution to low power amateur radio communication”.

Paul says “With a few notable exceptions (some digital modes, SST, etc) the 'end user' of most amateur radio transmissions is the ear – so understanding radio communications properly includes considering acoustics.” In this presentation he takes a light-hearted look at the overlap between radio and audio, asking what it is that determines and limits what we hear from our receivers. Paul will point to some of the key aspects of audio performance in an amateur communication chain, review masking and critical bands in the auditory system and draw some analogies between the methods of radio and audio engineering.

Paul has been involved in music since childhood and has a profoundly damaged left ear – so he is particularly interested in everything “audio”. Last years visit to FDIM is where Chuck, W8PT and I met Paul and his wife Deb. Since then, Paul has written a book titled “*Getting There*” which talks about his personal journey to FDIM and the trip he took across the US afterwards. While not specifically an amateur radio book, or even an engineering book, it is an interesting story of his travels and a glimpse into all of the interests that Paul and Deb share (fly fishing, bird watching, music, painting, family and friends, to name a few).



I'm sure that you will find Dr. Paul's presentation both interesting and entertaining. This is one presentation you won't want to miss!



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

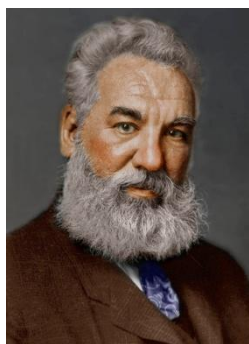


Russian “Inventors of Telecommunications”

The Daily DX



Special event stations in Russia will be on the air until June 16 as part of the international scientific-educational radio marathon called “**Inventors of Telecommunications**,” established by the Russian Geographical Society and supported by radio clubs and Amateur Radio operators. There will be awards and certificates.



Each RT73-prefix station represents a historical figure in the area of telecommunications or electronics. For example,

RT73BA represents Alexander Graham Bell,
RT73EA represents Edwin Howard Armstrong,
RT73VZ represents Vladimir Kosmich Zworykin and
RT73NT represents Nikola Tesla.

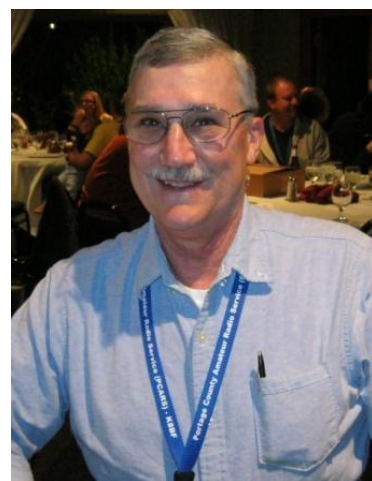
Digital SIG

Rick, K8CAV

The PCARS Digital Special Interest Group will be holding its monthly meeting on Tuesday May 3rd at the PCARS club site in Ravenna.

We’ll be talking about using fldigi for Field Day and specifically using Field Day macros to make your digital operations more efficient. We’ll also be available to help with any questions or issues you may be having with your digital operations.

Hope to see you there!



Linux for Hams SIG

Terry, KB8AMZ



There are several months in each year where there is a 5th Tuesday and the Linux for Hams SIG (L4HSIG) meets at the PCARS club site. May 31, 2016 is such a month. Access to the clubhouse is around 6:45 p.m. (1845) and the SIG begins at 7 p.m. (1900).

The last SIG (special interest group) was March 28, 2016. As many of you know the club purchased new miniPC's and those replaced the older PC's.

One of those older PC's with sufficient memory (I think it has 4 GB RAM), CDROM, Hard Drive, and NIC (network interface card) was located and the L4HSIG installed a distro of Linux on it. This month amateur radio applications will be installed on the hard drive. We will try to scrounge enough parts to assemble a 2nd computer and install one of the many versions of Puppy Linux on it.

If you have an interest in using FOSS software on your computer instead of the commercial operating software then you might stop in to see what this SIG is about. Hosts for the L4HSIG are Mike, KB8TUY and Terry, KB8AMZ.

Hope to see you there. That's Tuesday, May 31, 2016 beginning at 7 p.m. at the PCARS club site.



Revamping the Ohio Speakers Bureau

**From the Ohio ARRL
Section News**

Something new is happening on this subject. Tom Sly, WB8LCD is collecting information on club meetings. If you've had an interesting presentation at a club meeting in the last 12 months, please send an email to Tom. He would like to know:

- 1) The topic or the name of the presentation,
- 2) The name and call sign of the presenter,
- 3) The name and location of the club,
- 4) Do clubs usually have interesting presentations (Y/N),
- 5) Has your club ever had a presentation done over Skype or some other internet service?

Tom stresses that he would like this information from all club members - not just club officers! You can email Tom at: WB8LCD@portcars.org. All responses will be confidential. This will greatly help Tom with a project he's working on for the benefit of clubs in the Ohio Section.

World Wide Flora & Fauna and More

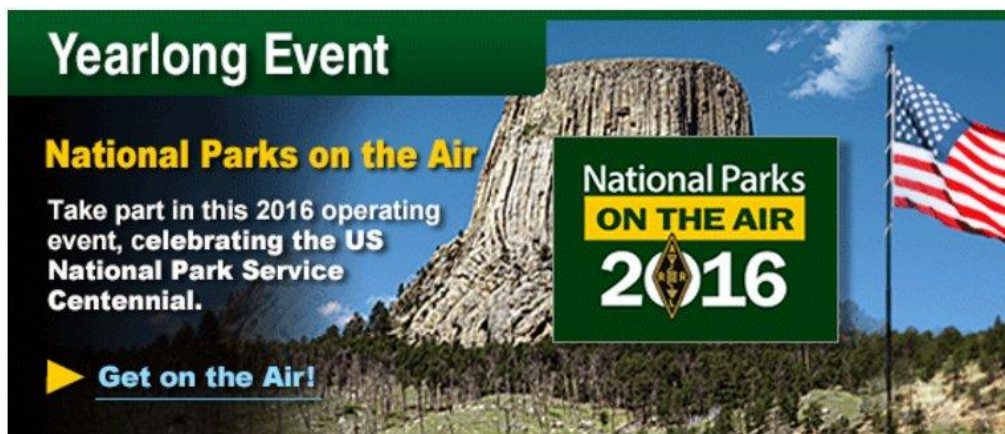
John, KD8MQ

WWFF Program – Had you heard about the World Wide Flora & Fauna program? Neither had I! They assign designators to parks, and nature preserves, and other natural areas around the globe. Their worldwide directory, by the way is 308 pages long! You can read more about the program at <http://wwff.co/>. The US WWFF site is under construction, but can be found at <http://wwff-kff.com/>.

This is a nice dovetail with NPOTA, since some of the NPOTA sites overlap existing WWFF entities. NP14 is one example. Besides being NP14, it also carries the WWFF designator of KFF-0020.



Another dovetail – Speaking of Multi-designator locations, here's another one; [Perry's Victory and International Peace Memorial National Memorial](#) (NM20) on South Bass Island. South Bass is in Lake Erie, and easily reached by ferry. Besides counting for NM20, it also has the designator of OH007L in the [US Islands program](#) directory. And, it counts for either South Bass Island State Park, or Oak Point State Park, under the [Ohio State Parks On the Air Program](#) (OSPOTA). How's that for an efficient use of your activating time?



I'm Extra Ignorant

Dan, KB6NU



On Sunday, I received the following e-mail from a reader:

"Just wanted to let you know I passed the General exam using your study guide. It was very helpful. I am now generally ignorant whereas before I was only technically ignorant. Ha!"

My reply to him was:

"Well, if you're generally ignorant, I guess that makes me EXTRA ignorant!"

This isn't just a joke--being ignorant is part of the hobby. Amateur radio operators will always be ignorant about something or other. Even if you could master every facet of the hobby at some point in time, your mastery would be short-lived as the technology continued to advance.

Over the course of my amateur radio career, we've gone from equipment that primarily used vacuum tubes, to solid-state gear that first used discrete transistors and then integrated circuits, to software-defined radios. I could have, at some point, simply given up on the new technology and still enjoyed amateur radio. Some guys do that, and that's OK. It is only a hobby after all.

I'm not one of those guys, though, and if you're not one of those guys, then you have to resign yourself to being ignorant. But, that's a good thing, as long as you realize that you're ignorant. Realizing that you're ignorant will spur you on to learn new things and accept new challenges.

Recently, I realized that I'm mostly ignorant about satellite operation. I know some of the basics from having read articles and writing about the topic in my study guides, but I have never made a contact using a satellite. I think that might be one of my next challenges. With the advent of CubeSat, there are many new satellites up in the air and many more opportunities to have interesting contacts.

So, what are you ignorant about? By that I mean, of course, what's going to be your next challenge in amateur radio?

When he's not challenging himself with new things, Dan falls back on something he knows pretty well--operating CW. You'll find him mainly on the 80m, 40m, and 30m bands. Dan is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com, and you can contact him by e-mailing cwgeek@kb6nu.com.



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"

Well May is here and let's hope that it warms up and stays that way. April with it's snow and then 70+ degree temps and then 40 degree temps is just too much of a rollercoaster for me. But I hope that you have had a chance to work on some outdoor HAM activities. I've been tracking down a problem with my antenna system, thinking that my SteppIR had a glitch. After all kinds of checks and tests it turns out that the problem was with my coax. So hopefully, that will be remedied with some new 400MAX from **DX Engineering**. This is not an ad for DXE, it's just that I get the coax in a day and there's no shipping charges. It will put me back on the air working DX not to mention a little contesting.



The DX news is a little slim this month. Not that there is nothing going on, it's just that for whatever reason, the reports are about events happening in October and November. So I will probably be sending out a lot of late DX news items using our club's email broadcasting system. Let's take a look at what will be happening in the next couple of months.

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

And I have said it before and I will say it again, this report "could" contain "Pirate/SLIM" operations or more likely a "BUSTED CALLSIGN". As always, you never know - "**Work First Worry Later**".

COWS OVER THE WORLD (DXpeditions Planned). Reminder - The ARRL Web Site/Daily DX reported on January 12th: Tom Callas, KC0W, has announced the all-CW "**Cows Over the World**" DXpeditions for 2016. All callsign suffixes will contain "COW". The schedule calls for a summer departure to (in this order): American Samoa, Samoa, Tokelau, Solomon Islands, Temotu Province, and Bangladesh. He may add Nepal and Bhutan. There will be no time frame for operation from each entity. "The determining factor will be when the pileups die down it's time to pack everything up and move along", he said. Callas said he's spent months researching the absolute best DXing locations for each island and for Bangladesh (he's secured all but Tokelau). "This will be the only DXpedition that I'm aware of in which the operator will operate from separate sides of the islands", he said. The Minnesota DXer pointed out that the west and east coasts of South Pacific islands are separated by mountains, and that he learned first-hand how much mountains attenuate HF signals while he was operating from Haiti. Emphasis will be 160, 80, and 40 m. A tentative phase II "Cows Over Africa" DXpedition is on the drawing board.<http://www.arrl.org/news/cows-over-the-world-cw-dxpeditions-planned>

4A. MEXICO (Bird Op, Special Event). Operators Ismael/XE1AY and David/XE3DX will be active using the special event call sign 4A1DX between now and June 14th. Activity is to celebrate 11th anniversary of the Grupo DXXE, Mexico's top contest and DX radio club. Operations will be on the satellite, FM only (**SO-50, AO-85 y Lilacsat-2). The QSL Manager is Dick, N7RO, direct or by the Bureau (Make sure your Bureau QSL card is clearly marked via N7RO). Don't send your QSL cards to the Mexican Bureau; they will not be answered because they have no QSLs. They will be uploading the log to LoTW and ClubLog at the end of their operation (June 2016). QSOs with this station are also good for the DXXE Award. ADDED NOTE: The special event call sign 4A1DX is also active on all HF bands using CW, SSB,

RTTY, PSK31, JT65 and EME. QSL Manager is also N7RO. See QRZ.com under 4A1DX for more details.

9Q0/9Q1, DEM. REP. OF THE CONGO. YL Elvira, IV3FSG, will be active signing as 9Q0HQ between May 1-22nd. Activity will be on 80-10 meters using SSB, RTTY and PSK31 using 100 watts into a dipole antenna. QSL via IK3GES.

CE0Y, EASTER ISLAND. Martin, LU9EFO, will be active as CE0Y/LU9EFO from Easter Island (SA-001) between May 6-13th. Activity will be on the HF bands. QSL via F4BHW direct only.

CS2, PORTUGAL. Members of the "Clube Radioamadores do Entroncamento" (CRE), will use the special callsign CS2ND between May 26-28th, from Noudar Castel (WCA reference CT-0021, DCFP reference C-021, DMHP reference BJ-015 and DMP reference 0204 for the Portuguese Castles Award). Operation will be on the HF bands using CW, SSB and the Digital modes. The Noudar Castel is located in the Province of Beja in Barrancos village. QSL via direct or eQSL.

CY0, SABLE ISLAND. Aaron, VA1AXC, is once again active as CY0/VA1AXC from Sable Island (NA-063). He there on an 8 week work shift for the Parks Canada coordinating logistics in new National Park, and will be active when time permits. Usually activity is SSB only and mainly on 20 meters usually around 2300z. QSL via JE1LET DIRECT ONLY.

FM/TO5, MARTINIQUE. Laurent, FM5BH, active as TO972M from Martinique Is. (NA-107) during the CQWW WPX CW Contest (May 28-29) as a Single- Op/All-Band/High-Power entry. QSL TO972M via FM5BH direct or ClubLog.

JD1, OGASAWARA. Harry, JG7PSJ, will once again be active as JD1BMH from Chichijima Island (AS-031) between April 27th and May 6th. Activity will be on 40-10 meters (maybe 80m) using CW, SSB and RTTY. QSL via the Bureau to JD1BMH or direct to JG7PSJ. Visit his Web page for more details at: <http://sapphire.es.tohoku.ac.jp/jd1bmh>
Also, on Twitter: <https://twitter.com/jd1bmh>

PY0N, FERNANDO DE NORONHA. Janio, PY4NY, will once again be active from Fernando de Noronha Island as PY0NY between May 13-23rd. Activity will be on 80-10 meters using CW, SSB and the Digital modes. QSL via his home call sign, direct, LoTW or eQSL.

SV/A, MOUNT ATHOS. For years Monk Apollo, SV2ASP/A, has been the only amateur radio operator from the Docheiariou Monastery. However, this past week news came out that Monk Iakovos, who lives in the Koutloumousiou Holy Monastery in Mt. Athos, has received his radio amateur training from George, SV1RP, and then his SV2RSG license from the Ministry of Telecommunication in 2015. Reports indicate that Monk Iakovos has been on 40 meters (7141 kHz) on SSB using an IC-735 into a vertical antenna. He does operate CW!! QSL via SV1RP. Check out his QRZ.com page at: www.qrz.com/db/sv2rsg

SV9, CRETE. Uli, DJ9XB, will once again be active as SV9/DJ9XB from Crete between May 10-20th. Activity will be holiday style on 40-6 meters, but with a focus on 6 meters and using only RTTY and JT65. QSL via his home call sign, direct, by the Bureau or LoTW.

T8, PALAU. Yousuke, JJ1DQR, active as T88QR from **Koror Island (OC-009)** between May 13-15th. Activity will be holiday style on 40-6 meters using SSB. QSL via his home call sign. direct or by the Bureau. No eQSL and No LoTW.

IOTA NEWS

EU-013. Operators Philippe/ON4LEM, YL Cécile/ON5TC, Michel/ON6QO, Gert-Jan/ON7GLF, Frédéric/ON7WZ and Peter/ON8VP will be active as MJ/ON4RSX from **St. Brelade, Jersey**, between May 5-8th. Activity will be on 40-6 meters using CW, SSB and the Digital modes. QSL via the Bureau to ON4RSX or direct to ON8VP.

EU-120. Three operators from the Virtual Amateur Radio Club <MX0VRC> from East Kent, U.K., will be active for 5 days on the Isle of Lundy (WAB SS14, ARLHS-73) between May 2-7th. Operators mentioned are Mark/G0GQT, Keith/M0KJA and Nigel/G0GDA. They are taking 4 rigs, 2 linears and a variety of aerials to run SSB, CW and Data. The island has no grid electricity and runs on generators from 0600 to midnight British Summer time. They are staying in a cottage adjacent to a disused lighthouse (ARLS-073) and the island is a FLORA & FAUNA site (WWFF GFF-103). QSL info: All Logs will be uploaded to eQSL, Clublog, QRZ.com and QRZCQ.com. - As far as they know there is no internet

connection on the island, so if that is the case logs will be uploaded on return.

K6VVA/KL7 MYSTERY IOTA (YOU GOTTA READ THIS TO BELIEVE IT!!) -- Rick, K6VVA, states, "Between 1 JUNE 2016 and 30 AUGUST 2016, I intend to activate several more KL7 IOTAs. But each NA-xxx IOTA # will remain a "MYSTERY" until AFTER the Expedition is completed. You MUST check this webpage <http://www.k6vva.com/iota/> for details and Confirmation of QSO instructions, which will then include the specific date(s) of QRV and IOTA # needed to solve each "Mystery"." For more details, see Rick's Web page.

NA-079. Operators Ricky/K4JTT, Tim/WK4U, Nathan/K4NHW, Emmett/W0QH and Emmett/KD0DTS will be active K4T from **Dry Tortugas Island** (USI FL013S, NPOTA NP17, WWF KFF-0023, ARLHS USA-316 & USA-236, WW Loc. EL84) between May 6-9th. Activity will be on 80-10 meters using CW and SSB. Suggested operating frequencies are: CW - 3530, 7030, 10105, 14030, 21030 and 28030 kHz

SSB - 3950-3990, 7250-7290, 14250-14290, 21350-21390, 24950, 28350-28390 kHz

QSL via by the Bureau, direct, LoTW or eQSL. Look for updates to be posted on QRZ.com.

**There you have it for this month and a little ahead. Get on the air and work some DX.
Until next month, 73!**

Dayton Hamvention® 2016 - Plan to GO !

Parky, KB8UUZ

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May 20-22, 2016 Hara Arena, Dayton, Ohio

what's coming out soon. **GO!!!!** check out the great ARRL display area and meet some of the ARRL HQ personnel. There are plenty of **free** forums. **GO!!!!** just to be there and walk around seeing all the ham gear and hams from around the world is worth the trip.

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

Take a camera and take pictures of everything and everybody!

So, check it out - Friday the 20th, Saturday the 21st and Sunday the 22nd in May - the **ONLY** place to be is at the Dayton Hamvention®.

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

Even if you only go for one day - **GO!!!!**
Even if you don't spend any money - **GO!!!!**
Visit all the dealers, see what's new and



Hamfest Calendar

05/20-22/2016 - Dayton Hamvention® - Location: Hara Arena - 1001 Shiloh Springs Road - Dayton, OH 45401 - Website: <http://www.hamvention.org> - Public Contact: Jim Tiderman, N8IDS - PO Box 964 Dayton, OH 45401-0964 - Phone: 937-276-6930 - Email: info@hamvention.org



06/05/2016 - BreezeShooters Amateur Radio Club - Western Pennsylvania Section Convention - Location: Big Butler Fairgrounds - 1127 New Castle Road - Prospect, PA 16052 - Website: <http://breezeshooters.org> - Contact: Jim Heiles, KB3IYS - 134 Easley Road Pittsburgh, PA 15237 - Phone: 412-600-1979 - Email: hamfest2016@breezeshooters.org

08/06/2016 - Columbus Hamfest - Location: Aladdin Shrine Center - 1801 Gateway Circle - Grove City, OH 43123 - Website: <http://www.columbushamfest.com> - Sponsor: Voice of Aladdin Amateur Radio Club (W8FEZ) - Public Contact: Jim Leonard, WD8MRT - 37-B Noble Terrace Springfield, OH 45504 - Phone: 614-264-8566 - Email: wd8mrt@arrl.net

08/21/2016 - Cuyahoga Falls ARC's Eighth Annual Tailgate Hamfest - Location: Robert Pinn Armory - 4630 Allen Road - Stow, OH 44224 - Website: <http://cfarc.org/tailgate.php> - Public Contact: Frank Tompkins, W8EZT - PO Box 614 Cuyahoga Falls, OH 44222 - Phone: 330-928-4048 - Email: tailfest2016@cfarc.org

09/03/2016 - 67th Annaul Uniontown ARC (W3PIE) Gabfest - Location: Uniontown Amateur Radio Club Grounds - 433 Old Pittsburgh Road - Uniontown, PA 15401 - Website: <http://www.w3pie.org> - Public Contact: Mike Kosco, KA3WOI - 12 Burlington Avenue Uniontown, PA 15401 - Phone: 724-437-3943 - Email: mikeko@verizon.net

07/10/2016 - 20/9 Radio Club Hamfest 2016 - Location: Austintown Senior Center - 112 Westchester Dr - Austintown, OH - Website: <http://20over9.org> - Contact: Dotti ONeilMeleski, KC8SYF - 17520 Denver Dr Lake Milton, OH 44429 - Phone: 330-651-8420 - Email: Hamfest@20over9.Org

09/11/2016 - Butler County Amateur Radio Association BCARA SwapFest - Location: Unionville Fire Dept - 102 Mahood Rd - Butler, PA 16001 - Website: <http://www.w3udx.org> - Contact: Rick Melton, N3VKM - 214 Criley Rd - Cabot, PA 16023 - Phone: 724 287-8134 - Email: n3vkm@arrl.net

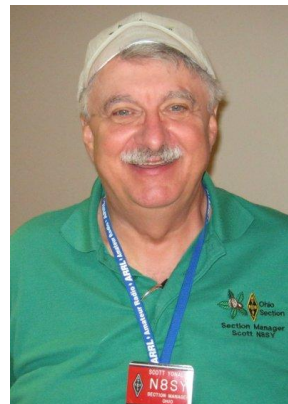
09/25/2016 - Cleveland Hamfest and Computer Show - Location: Cuyahoga County Fairgrounds - 164 Eastland Road - Berea, OH 44017 - Website: <http://www.hac.org> - Contact: Glenn Williams, AF8C - 4134 Stoney Ridge Road Avon, OH 44011 - Phone: 800-CLE-FEST - Email: info-list@hac.org

10/16/2016 - Conneaut ARC Hamfest - Location: American Legion Post - 272 Broad Street - Conneaut, OH 44030 - Website: <https://www.facebook.com/events/1109527472432186/> - Public Contact: Michael Anderson, W3MJA - 1844 Dee Jay Avenue Erie, PA 16510 - Phone: 814-384-0443 - Email: w3mja@yahoo.com

11/06/2016 - WACOM HAMFEST 2016 - Location: Washington County Fairgrounds - 2151 North Main Street - Washington, PA 15301 - Website: <http://www.wacomarc.org/hamfest.html> - Public Contact: Bud Plants, N3TIR - 236 Chambers Ridge Road West Alexander, PA 15376 - Phone: 724-350-6745 - Email: bud@n3tir.com

Let's Talk

Scott, N8SY
ARRL Ohio Section Manager



Late Breaking NEWS. There's now just a month until Dayton Hamvention arrives. Oh yeah, spring has also finally decided to arrive in Ohio as well. I actually broke out the shorts today and mowed the yard. Are you ready for NVIS Day AND the Second Annual Ohio 2 Meter FM Simplex Squares Contest? They are coming up this next weekend.. Don't be left out, come have some FUN around the state and join in these events and several others that are scheduled, see the Special Events area below. It's going to be a blast for sure!!

As I've been reporting for some time now, I'm really keeping busy attending meetings and hamfests. As you may know, the Ohio Section of the ARRL is the largest Section in the country. It's even bigger than a Division or two. So, with that in mind, it's only fair to say that Ohio also deserves to have a full time Section Manager. One that can freely travel all over the state visiting with, and representing YOU. So, don't be surprised when I just "pop-in" at your meeting or function. I really do like traveling and visiting with all of you at your hamfests, club meetings, picnics and especially breakfasts. It's fantastic!

Speaking of Hamfests. The Ohio Section Cabinet has been busy making preparations for our booth at Dayton. Yes, if you didn't know the Ohio Section is the only Section in the nation that has its own booth within the ARRL area at Dayton. Now for some really big news. We have also been asked to man a National Parks on the Air station during the Hamvention as well.. Take a look at the article National Parks on the Air above. We are working on the details right now, but what I can tell you for sure is that we are going to need some help. Please, if you can give just an hour or two to volunteer with this it would be great! A number of you have already volunteered and that's fantastic! You don't have to be an expert or anything like that, just have a friendly face and willingness to help others for an hour or so. All of the equipment is being provided by the League, so you know that it's going to be first class stuff all the way.. It's going to be a lot of fun for sure and I'm sure that it's also an event that is going to get a lot of exposure with the press as well.. How's about it.. Got an hour or so on Friday, Saturday or Sunday to help out?? (Daytime hours only) We'd sure love to have ya'. Contact John Myers, KD8MQ at kd8mq1@gmail.com for more details on this fantastic adventure!!

Now, switching bands to another subject.

As July gets closer I am seeing more and more of you in ARES® being trained and certified in ICS-100, 200, 700 & 800, and some even going on with other ICS training. This is great news, as that we've set a target date for the end of June for everyone that's going to be involved with FMEA, or any government run event to have your training completed by then. I really would love to see everyone in Ohio have these 4 basic courses under their belts!!

For those of you who really aren't seeing the reason for this I want you to take just 10 minutes of your time and read an article that was published in the March edition of QST. It's by Rick Palm, K1CE. Now for those of you who don't get QST, I have this article reprinted on our website <http://arrl-ohio.org/QST.pdf> I know that once you read Rick's views it will greatly help you better understand the ins and outs to all of this, and why this is so very important to YOU. I do want to assure you that even if you still decide not to go through with completing these courses there will still be things that you can do, just not as many of them, and probably the most import item to remember, you most likely will not be asked to participate in any activity within the FEMA organization. But, there are other things, like bike races, parades and the like that won't require this extra training – unless something really breaks out (Boston Marathon?).

Now let's switch bands.

Are you getting those emails from me? If not, all you have to do is to "Opt-In" to receive them. Heck, just send me an email n8sy@n8sy.com, I'll get you added to the mailing list. There's a link to do this on the Ohio Section website, it's on the bottom left corner. For your convenience, here's a direct link to it: <http://arrl-ohio.org/forwarder/forwarding.html> I urge all of you to make sure that everyone, regardless of whether they are a League member or not, get signed up for one of these options. You can always "Opt-Out" at any time if you feel this is not what you were expecting.

Let's shift bands once again.

Let's talk about the Ohio Section Website. You can find the Ohio Section Website at: <http://arrl-ohio.org> If you don't have this website set as your home page, I urge you to do so.



Have you seen the NEWEST "Handbook Giveaway" drawing on the website yet? It's there! To enter the drawing all you need to do is fill in a couple of boxes on the form.. (your name and email). That's you need to do to be entered into a drawing to win a 2016 ARRL soft cover Handbook. There's nothing else required (Oh, You do need to be a resident of Ohio to win.) The winner will be mailed the Handbook at my cost. This is being offered just to see how many folks are really checking in on the website. Got the idea? Best of luck to you!!

Switching bands once again. HEY, there's another NEW – one question – questionnaire on the Ohio Section Website? This question is really important for me to know. It will only take about 2 seconds for you to answer it, and you can see how your answer stacks up with others instantly. If you haven't done it yet, please do. I really want to hear from you.

Are you a member of the ARRL?? If you aren't a League member, this is a great opportunity to become one. Want more information on how to join? Here's the link: <http://www.arrl.org/membership-levels>. There's even a 90 day FREE trial that you can apply for if you've never been a member. Got questions about being a member or what the League is all about? Send me an email. n8sy@arrl.org I'll be happy to call or write to you. We can even have coffee if you'd like, and I'll buy!!

One last spin of the dial.



Well, I think that's going to do it for me this month.. I have lots of meetings and hamfests to attend throughout the spring and summer of this year representing YOU at events like the Ohio Public Private Partnership (OP3), the Emergency Management Association of Ohio (EMAEO) and let's not forget the Voluntary Organizations Active in Disaster (VOAD) here in Ohio. The Ohio Section has a presence like it never had before with our state agencies, and we are working very hard at making that presence grow and prosper for all of YOU.

Oh, and don't be too surprised when I show up at a meeting you're at!!

Swap-N-Shop

FOR SALE - 2 Tickets for the Contest Dinner at Hamvention® Saturday night. This is one of the best functions at Hamvention®. Am offering them at \$20 each or 2 for \$30 (normally \$38 ea) however, please don't take them unless you really plan to be there."

Contact: Jack, N8BI at N8BI@portcars.org [09/02/16]

FOR SALE: 1 bus ticket on the CARS Hamvention Express bus to Dayton on May 21st, 2016. Purchased for \$50 but I am selling for \$40. Please see flier in this newsletter.

Contact: Amy, KD8SKL at KD8SKL@portcars.org [09/02/16]

FOR SALE: Kachina 505DSP In great shape, original DSP radio, \$400 **Kenwood TS-830S**, HF, Has been refurbished and looks like new \$400 **Kenwood TS-811A**, 440 Mhz All Mode, looks good. Original manual \$250 **Kenwood TS-711A**, 2 Mtr All Mode, looks good. In original box with mike and manual. \$300 **Kenwood SP430 Spkr** \$ 40 **Gwinstek Function Generator** \$ 25 **Gwinstek Digital Multimeter** \$ 25 **Albia Pwr Supply** Dual Variable +15 &-15 \$25 **EZ Oscilloscope** 60MhZ Dual Channel \$50 **Mosley CL-33-M** 10, 15, 20 MTR BEAM antenna \$200 **Nye Viking, MBI-001** Tuner \$100 **Vibroplex Bug** \$ 50 **Sencore TF151**, Transistor tester \$25 **Shure model PE515**, Microphone \$25 **Shure model 444D**, Microphone \$25 **HEIL HTH**, Handie talkie headset for Kenwood HT's \$25 **AEA model QT-1**, Antenna tuner \$25 **Heathkit model HD-1481**, Remote Coax Switch \$25 Misc tower parts, lots contact me if interested. Will accept reasonable offers. **Yaesu FT-757-GXII**, in good condition with mike \$300

Contact: Allan, AB8AA at AB8AA@portcars.org [09/02/16]

FOR SALE: MFJ-259B Antenna Analyzer with Case. Good condition - \$170 **Yaesu FT-1000MP** - excellent condition with extra filters, manual- \$1000 **Classic Hammarlund HQ-129** shortwave receiver, electrolytics and tubes replaced 5 years ago, average to good condition, \$110 **Ten Tec Corsair** - complete with external power supply and speaker, optional CW filter and manual - great CW rig - \$450 OBO

Contact: George, K3GP by phone at 330-829-9504 evenings or weekends [05/02/16]

FOR SALE: Antenna Specialist 100 watt mobile amplifier - \$100 **Bird VHF slugs** - \$50 each **Lafayette HA-410 10- Meter AM transceiver** w/AC cord, mobile hand mic., working. Plus two spare radios for parts - \$200.

Contact: Jeff, WA8SAJ by phone at 440-951-6406 [08/02/16]

WANTED: QST Magazines -April 1969, April 1991 February 1998, April 2007 and January 2014.

WANTED: J-38 Straight Key - Decent to good condition. Reasonably (cheap) price.

Contact: Bucky, N8OQQ by e-mail at: N8OQQ@portcars.org [06/02/16]

FOR SALE: Icom IC-7800 - low mileage, great condition.

Contact: Tim, K3LR by e-mail at: K3LR@K3LR.com [07/02/16]

FOR SALE: For Sale Yaesu FT-991 HF/VHF/UHF all mode transceiver. Purchased new August 2015. Includes Heil Proset headset adapter and RT Systems programming software with USB cable. \$1,500 **NON-FUNCTIONING Icom IC-756** (non-pro model) HF transceiver **and Icom IC-R70 receiver.** Both units intact but not functioning, some manuals and documentation included. \$25 each or \$40 for both.

Contact: Rick, K8CAV by phone at 330-620-8826 or e-mail at: K8CAV@portcars.org [06/02/16]

FOR SALE: Kenwood SP-820 Speaker - with filters \$80. **DenTron Jr Monitor 300 watt antenna tuner** - Tunes long wire, coax, twin lead antennas. \$75 **Dentron model 80-10 Long wire antenna tuner** - \$65.

Contact: Mark, W8BBQ by e-mail at: W8BBQ@portcars.org [08/02/16]

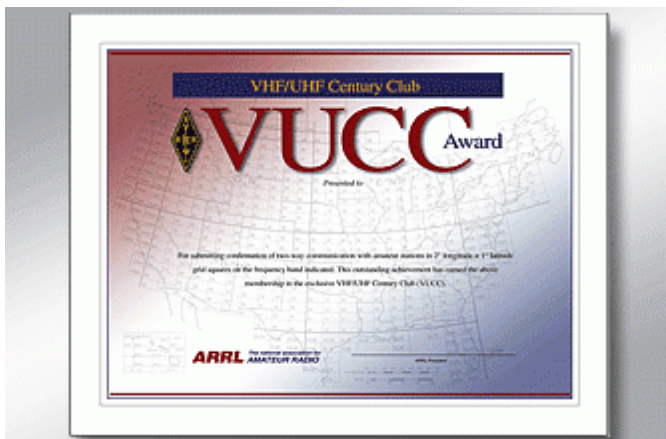
VHF/UHF Century Club Award

Dave, N8NB

This is the time of the year to work on your VUCC award. It requires that you confirm 100 grid squares worked on either 6 meters or 2 meters.

Here is a link that will explain grid squares if you are not familiar with the term or don't know your grid square:

<http://www.arrl.org/grid-squares>.



Every year between April and mid-August 6 meter signals can skip off the E layer of the ionosphere on a regular basis. Each hop can go between 360 and 1200 miles away and a very minimal station can work most stations on E skip. If you happen to catch the June ARRL VHF contest or a July CQ WW VHF contest with good conditions, it is possible to work 100 grid squares on a weekend! Good hunting!

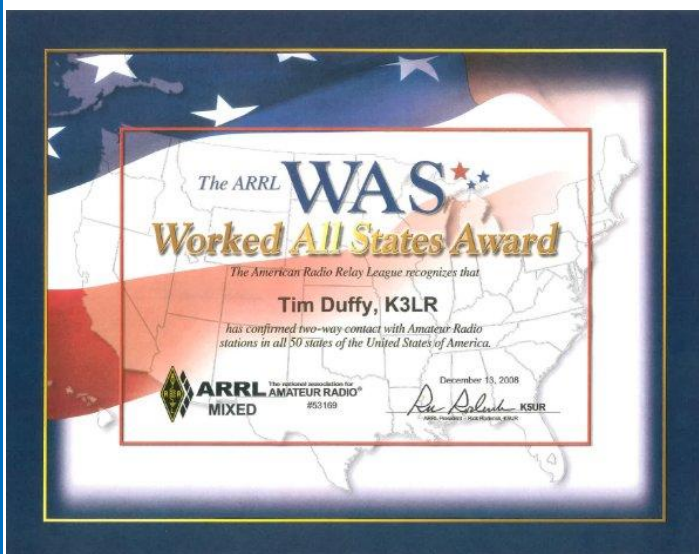


New WAS Award

Tim, K3LR

For those of you that have obtained the ARRL Worked All States Award (WAS) in the past, the ARRL has re-designed the award. The new design is very nice and would make a fine addition to your shack wall.

You can apply to the ARRL to get the new design certificate. When they send it to you, it will still have your original date and number.





PCARS Members - Amateur Radio License Plates Wanted

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

We have 54 plates now, but we can use more. Don't have ham radio call plates on your vehicle? Well for those of you in Ohio, you can get the plates sent to you by going to any License Bureau office and filling out the special plate registration form. Have a copy of your current FCC license when you apply. The official form to obtain your Ohio Amateur Radio license plates is on the [PCARS Yahoo Group](#) site. Then you'll have an old plate to bring in to get hung up as a **permanent part of PCARS history**.

From the Ohio BMV:

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

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

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

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

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

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

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

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

PCARS Yahoo Group

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

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

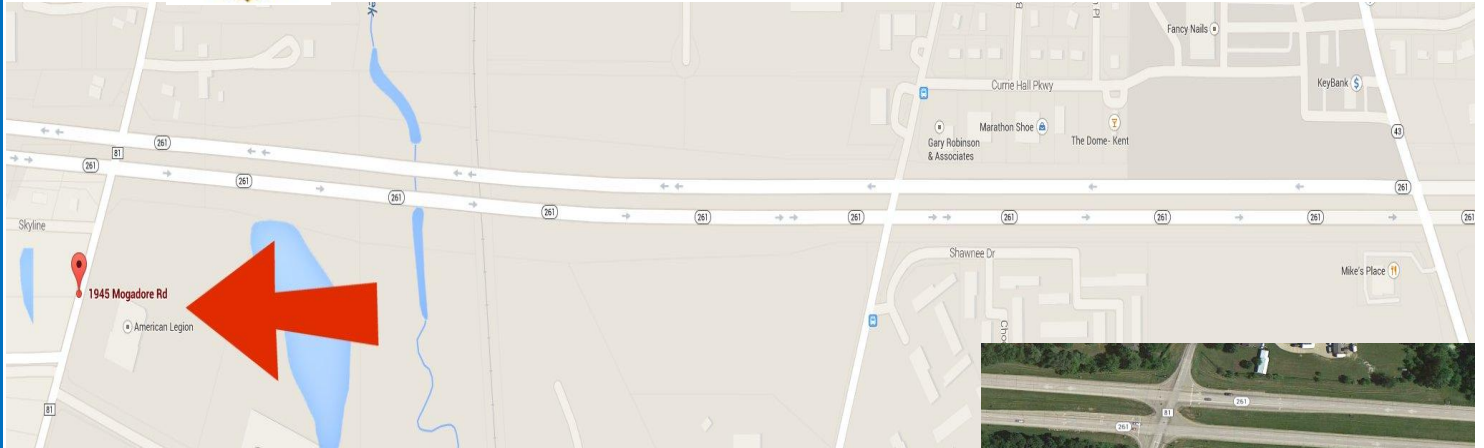


PCARS Meetings

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



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



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



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

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

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

Photos from the April PCARS Meeting





PCARS April 11, 2016

Eliminate 15 db Gain Limit on Amplifiers

From the ARRL



FCC Invites Comments on Petition to Eliminate 15 dB Gain Limit on Amateur Amplifiers

The FCC has put on public notice and invited comments on a *Petition for Rule Making* ([RM-11767](#)), filed on behalf of an amateur amplifier distributor, which seeks to revise the Amateur Service rules regarding maximum permissible amplifier gain. [Expert Linears America LLC](#) of Magnolia, Texas, which distributes linears manufactured by SPE in Italy, wants the FCC to eliminate the 15 dB gain limitation on amateur amplifiers that's spelled out in §97.317(a)(2). Expert asserts that there should be no gain limitation at all on amplifiers sold or used in the Amateur Service.

"There is no technical or regulatory reason [that] an amplifier capable of being driven to full legal output by even a fraction of a watt should not be available to Amateur Radio operators in the United States," Expert said in its *Petition*.

Expert maintains that the 15 dB gain limitation is an unneeded holdover from the days when amplifiers were less efficient and the FCC was attempting to rein in the use of Amateur Service amplifiers by Citizens Band operators. While the FCC proposed in its 2004 *Notice of Proposed Rulemaking and Order* in WT Docket 04-140 to delete the requirement that amplifiers be designed to use a *minimum* of 50 W of drive power and did so, it did not further discuss the 15 dB amplification limit in the subsequent [Report and Order](#) in the docket.

"Although no party advocated retention of the 15 dB limit, it remains in place today," Expert pointed out in its filing. "In the intervening years, advancements in Amateur Radio transmitter technology have led to the availability of highly compact, sophisticated, low-power transmitters that require more than 15 dB of amplification to achieve maximum legal power output. Therefore, Expert seeks to remove the 15 dB limit from §97.317 so that Amateur Radio manufacturers and distributors will not be forced to needlessly cripple their amplifiers for sale in the United States." Read [more](#).

Discover the HF Experience at the ARRL Expo

From the ARRL



Sign Up Now to Discover the HF Experience at Hamvention's ARRL EXPO! A new feature of [ARRL EXPO](#) at Dayton [Hamvention](#)®, May 20-22, 2016, will be "[Discover the HF Experience](#)" -- an exhibit and initiative for new operators and for those lacking experience with ham radio on HF. Comparable HF operating positions will be available, along with mentoring on how to make an HF contact. Anyone interested can [book](#) a 30-minute session, one to a guest, and no license is required. Experienced operators will be on hand to help.

"Our priority is non-hams, new hams, or those who have not experienced HF operation," said Gerry Hull, W1VE, who established the Discover the HF Experience program with Cary Rubenfeld, VE4EA. Inaugural Discover sessions in early April in Winnipeg, Manitoba, and Framingham, Massachusetts, each attracted about 50 attendees. "More were long-time hams who spent more time on VHF than HF," Hull said. "Some had given

up HF long ago and gone to VHF." Most of the visitors at both locations, however, were hams who already operate HF, but wanted a refresher.

The initial sessions combined hands-on operating with talks on various aspects of Amateur Radio and of HF operating in particular. Hull said topics covered in supplementary talks at the Massachusetts session included radios, antennas, and where to find help and information. Due to time constraints, Dayton's Discover will offer just the HF operation component, and the program has been adjusted appropriately. Hull said a team "with great Elmers" will be at ARRL EXPO for all 3 days of Hamvention.

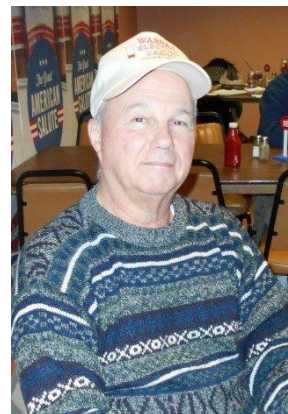
Also for newcomers attending Hamvention, the League will sponsor the first-ever [ARRL Youth Rally](#) on Saturday, May 21, open to youth and young adults from 11 to 26. [Register](#) by May 1. The Youth Rally will feature a full program of hands-on ham radio activities, discovery, sharing, and fun!

Shack Shot - WA8SAJ



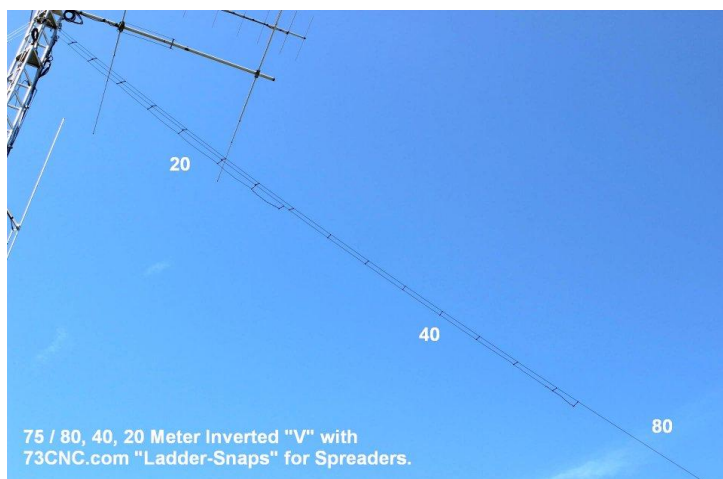
Jeff, WA8SAJ

Just replaced my 25 year old multi-band inverted "V" with a new one using DX Engineering #14 Antenna (Radial) Wire and 73CNC.com "Ladder-Snaps" for the spreaders to separate the 40 / 15 and 20-meter section from the full size 75/80 -meter section on top fed with RG-11U.



The center insulator is made by Barker-Williamson (B&W) for 70 ohm feed and a wire wound choke and Ferrite Beads to keep the R.F. off the coax.

And, it works, 80, 40, 20, 15, &10-meter with low SWR just fine!



Important Dates During May

4 - Star Wars Day.



11 - Twilight Zone Day is an annual holiday created to celebrate this thought-provoking television series, where everything was strange and surreal and nothing was ever quite as it seemed to be.

13 - Top Gun Day - In 1986 the movie **Top Gun** roared into theatres like an F-14 Tomcat.

Editor's Note: My first F-14
Tomcat squadron VX-4 in 1972

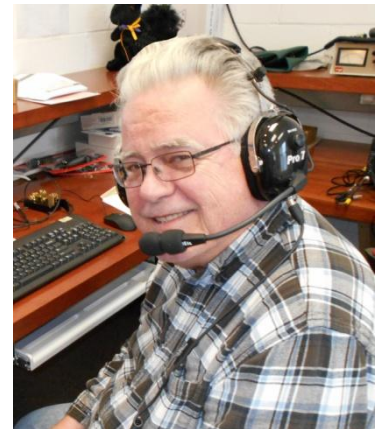


17 - Pack Rat Day encourages us to embrace the fact that we want to keep stuff, and suggests that you shouldn't throw your old belongings, or old ham gear or parts away as it may be useful or valuable in days or years to come.

Thanks & 73

Tom "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 will again be known as the **BIG FUN** amateur radio club with plenty of activities to report on in this newsletter all throughout 2016 and beyond.



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

K8CAV, AC8NT, KB8UUZ, N8RLG, KB1SF, KC8PD, WB8LCD, W8PT, KB8AMZ, KD8MQ, KB6NU, N8SY, N8NB, K3LR, WA8SAJ, The Daily DX, the ARRL and the World-Wide Web.

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



HAMFEST, ELECTRONICS, & COMPUTER SHOW

FREE ADMISSION – FREE PARKING



WHEN:

Sunday July 10, 2016

TIME:

8AM till 1PM

WHERE:

**Austintown Senior Center
112 Westchester Dr. Austintown, OH
(Just off State Route 11 and Mahoning Ave)**

Tailgate spaces: \$5.00 per space

(Outside tailgate weather permitting; if inclement weather tailgate will be inside – No Table)

Inside Space: \$10.00 includes electricity

6ft & 5ft tables available at no additional cost by pre-registration till sold out. Welcome to bring own tables.

ALL AIR CONDITIONED BUILDING!

Food and Beverages Available

(Provided by the Austintown Senior Center)



**** ARRL License Testing Available at 8:30 AM ****



****Forums: **ARRL/ARES** ** Ham Electrical Safety**
Basics of EZ-NEC Antenna Modeling**

****QSL Card Checking****



Prize Tickets Sold For: 1st Place YAESU FT-2900 2M MOBILE

2nd Place 2M/440_Hand Held Radio

PLUS ARRL Gift Certificates, and More!

****Half Hour Prize Drawings****

**** 50/50 Drawing ** **Mobile Check-in prize****



Visit our Website www.20over9.org Email: hamfest@20over9.org

330-651-8420 Check in 147.315+ K8TKA repeater

Please reserve and pay for your 2016 Dayton Hamvention Bus Trip ASAP.

Saturday May 21, 2016 CARS is again sponsoring a Bus trip to the Dayton Hamvention.

Every amateur radio operator in the world probably dreams about going to the Dayton Hamvention at least once. Please join us in 2016, it is an incredible event and offers something for everyone.



The Bus trip will cost \$50.00 dollars per person, we will not stop for breakfast on the way down, but there may be a fast food stop on the way home. You are responsible for both your food and Hamvention tickets. Go to <http://www.hamvention.org/tickets.php> to order your tickets.

Stop 1: *The 56 passenger bus will leave promptly at 5:00 am from the Kmart parking lot at the intersection of Engle and Bagley Roads, in Middleburg Heights, Engle Road is a 1/4 mile west of I-71, Kmart is behind the Gas station. Vehicles will be safe, there is security.*

Stop 2: *The bus will also pickup riders at I-71 & Rt 303 at the SE corner of the Kmart parking lot and will depart for Dayton at approximately 5:30 am.*

When ordering tickets please tell us which stop you will be at.

Bus tickets must be purchased and paid for in advance.

If you have any questions please see Dwaine at a CARS meeting or call him at 440-582-3462. Checks must be made out to CARS and mailed to: Dwaine Modock K8ME, 8113 Thornhurst Dr., North Royalton, OH 44133 attn. Dayton bus

73, Dwaine, K8ME



Pioneer Amateur Radio Fellowship, Inc.

Dayton Hamvention 2016

Saturday, May 21, 2016 - 5:30 AM



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

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

The cost of the **Bus & Entrance ticket** to the Hamvention:

\$70* before April 15, 2016

The cost of the **Bus Only** to the Hamvention:

\$55* after April 15, 2016

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

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

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

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

Parking will be in the back of the church.

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

Transportation is being provided by the Crossroads Transportation Company.

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

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

Joy Spencer KA8TDF

2101 Bigelow St

Akron, OH 44314

Or call 330-745-5115

E-mail: KA8TDF@arri.net

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

Location of Departure:**

Akron Baptist Temple, 2324 Manchester Road, Akron, Ohio 44314

Located on Rt. 93 just north of Rt. 224

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

Repeaters 147.135 & 146.610

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

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

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

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

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

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

PCARS uses the **K8IV** repeater: **146.895 MHz PL 110.9 ~ Rootstown, Oh ~ EchoLink Node: K8SRR**

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

~ 2016 Officers ~		2016 PCARS Appointments & Committees	
President - Rick Kruis - K8CAV Vice President - Jim Wilson - AC8NT Treasurer - Amy Leggiero - KD8SKL 3 Year Trustee - Jim Aylward - KC8PD 2 Year Trustee - Chuck Patellis - W8PT 1 Year Trustee - James Andrews - KD8VT Past President - Tom Sly - WB8LCD	ARRL Awards - DXCC WAS, VUCC, WAC	W8KNO	Joe Wehner
	ARRL Awards - WAS	KB8UUZ	Tom Parkinson
	Club Site Manager/Liaison	KC8PD	Jim Aylward
	Contest Coordinator	W8PT	Chuck Patellis
	EchoLink	K8SRR	Steve Randlett
	Field Day Chairman	W8PT	Chuck Patellis
	FYAO Chairman	W8PT	Chuck Patellis
	Historian	KB8SZI	Peggy Parkinson
	K8BF Callsign Trustee	K8FEY	Bob Hewett
	K8BF QSL Manager	K8FEY	Bob Hewett
	Membership Chairman	KC8PD	Jim Aylward
	Net Control Manager	WB8LCD	Tom Sly
~ Meetings & Net ~ 2 nd Monday of each month. 7pm Thursday night Club Net at 8 pm on 146.895	Net Night - Club Manager	WB8LCD	Tom Sly
	Newsletter Editor	KB8UUZ	Tom Parkinson
	OSPOTA Chairman	KB8UUZ	Tom Parkinson
	Public Information Officer	WB8LCD	Tom Sly
	Secretary	K8MSH	Mark Haverstock
	Tech, Gen & Extra Class Manager	AC8NT	Jim Wilson
	Volunteer Examiner Liaison	N8RLG	Robert Gurney
	Webmaster	KD8MQ	John Myers

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

PCARS Incorporated
Nov. 1, 2005

First Meeting
Nov. 14, 2005



ARRL Affiliated
April 20, 2006



Special Service Club
March 22, 2010

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

This is the **Electronic E-Mail** version of the **PCARS Newsletter, The RADIOGRAM**. The advantages to receiving this way are: You get **COLOR** pictures, active links, **NO** postage needed and the newsletter is delivered right to **YOUR** e-mail box! **The RADIOGRAM** is published every month and only sent to subscribers. If you would prefer not to receive this newsletter, we understand. We'll try not to take it personally. It's not you saying you don't like us, but maybe you just don't have the time to look at all this hard work we've done just for you. Hey, that's cool. But if your heart is truly set on making sure you no longer receive this newsletter, even though we promise to one day reveal the meaning of life in it and you're going to be really upset when you miss out on that, we can take you off the e-mail list. Yes I know the cover says there is a cost, don't worry you won't get sent a bill or be hounded by bill collectors. Since this now looks like a magazine, I thought - what the heck, let's put a price on it. Every month it's listed in a different currency just for fun. Send your newsletter inputs (in **.TXT** format) along with in-focus pictures (not small 20 kb photos) to the newsletter editor: kb8uuz@portcars.org



NLC



"When All Else Fails - Amateur Radio Works"