Recycling & seed planting

PCARA's 2014 Bring and Buy auction was a great success. Malcolm, NM9J did a good job as auctioneer. We also have to thank Clint, KB2ZRJ for bringing some excellent service equipment to auction, from which Mike N2HTT took home a superb Hickok tube tester. In addition, I am now the proud owner of an RCA oscilloscope, which shows great promise. In the end we came

out in the black with a fine contribution to the club treasury, thanks to generous donations from successful sellers. We had an excellent turn-out of both buyers and sellers for this event — thanks to all.

PCARA's Annual Bring and Buy Auction took place on Jan 5. Malcolm, NM9J is pictured holding up one of the items brought along by Clint, KB2ZRJ.

On January 24th PCARA gave an amateur radio presentation and demonstration to Cub Scout Pack 118 at Furnace Woods Elementary School in Cortlandt Manor. Thanks to Mike N2HTT, Henry KB2VJP, Malcolm NM9J and Lovji N2CKD who provided the demonstrations. The presentation began with a basic introduction followed by two videos on the school's large projection screen. They were ARRL's *"The DIY Magic of Amateur Radio"* followed by a personal video from Mike N2HTT *"Building the AC-1 Jr. Glowbug Transmitter Kit".*

(This material can also be viewed on YouTube: http://www.youtube.com/watch?v=vlDwVhx7miQ and https://www.youtube.com/watch?v=hTEPXS1e_xY&feature=youtube_gdata_player .)

A variety of amateur radio equipment, including three separate Morse code oscillators and a code practice game had been arranged on-stage. For the rest of the evening, small groups of Cub Scouts were brought forward to take a look, ask questions of the PCARA members and try out their Morse skills. PCARA trifolds and ARRL handouts were also available. We hope the

Greg KB2CQE (left) introduces PCARA's Amateur Radio presentation to Cub Scout Pack 118 on Friday Jan 24. [More pictures on page 13.]

youngsters took all this in and that we planted a few seeds for their future growth.

The next event in the radio calendar will be Orange County ARC's Hamfest on Sunday April 27th. It looks as though this might be the only Spring Hamfest in the lower Hudson Valley, so at the next meeting we shall discuss organizing a club table.

Our next regularly scheduled meeting is on Sunday February 2, 2014 at 3:00 p.m. at Hudson Valley Hospital Center in Cortlandt Manor, NY. I look forward to seeing each of you there.   - 73 de Greg, KB2CQE

PCARA Officers

President:
   Greg Appleyard, KB2CQE, kb2cqe at arrl.net
Vice President:
   Joe Calabrese, WA2MCR; wa2mcr at arrl.net

Contents

Adventures in DXing - N2KZ

Big sound

A little FM radio station with a big sound has recently been launched in nearby North Salem, NY. WJZZ, 90.1 FM, broadcasts daily from 7 AM to 7 PM from an attic on Danbury Road (Route 6) just outside of Brewster. Drive along I-84 between Home Depot in Carmel and the Danbury Fair Mall, and you'll hear its signal loud and clear. It features an eclectic mix of standards and jazz — a welcome relief from the usual din heard on FM. What is this station all about and how did it get on the air? Well... it's a long story (but it's a good one!)

Small beginnings

It all started with a home-brew rig cobbled from a repurposed "All-American Five" AM radio. It was 1958 and Dennis Jackson, now K1QHV, and some buddies were getting into electronics. "We were aspiring hams, though we were just kids." One after another, everyone in the group became amateur radio operators. "We decided to start collecting licenses." Little did he know he would collect quite a few as part of a career.

Dennis Jackson, K1QHV.

His first ham rig was a Heathkit DX-40 and Lafayette KT-200, built from kits, as the interest continued through junior high school, high school and into college. "I was mowing lawns for money, and didn't have much, so most of the shack was homebrew." Dennis and friends first tasted broadcasting in 1961 when they started a small local AM station that had a studio in the local YMCA in his hometown of Westport, CT, with a Knight Kit Part 15 transmitter at the beach, using a buried wire as an antenna. "It was called The Radio Voice of Westport's Youth - WWPT." Today, WWPT is a full power educational FM station at Staples High School that he helped to start a few years after graduating.

While earning a BSEE degree at Rensselaer Polytechnic Institute in Troy, NY, Dennis was involved with college radio, starting a show called "The House of Sound" on WRPI.

Broadcast calling

After college, he first worked as a radar designer but soon realized his calling was broadcast radio. After stints as Morning Man on WMMM and WDJF-FM in Westport and WEZN in Bridgeport, he found a job as a "jack-of-all-trades" at a small Top 40 station in Burlington, VT. What followed was an adventure. He returned to Connecticut to manage WGCH 1490 AM in Greenwich, CT in the 1980s. In the last 25 years he has started and operated a dozen stations plus a half dozen FM translators, and still operates five small full power stations.

"I like to start stations from the ground up in places where the interest isn't necessarily high enough that there's much competition." The formula works. Many communities now enjoy highly-localized stations operated by small but dedicated staff. Loyal audiences follow their unique sounds that are all-too-rare on the commercial FM band.

Back in 1984, Dennis got in on the ground floor of a project in nearby Ridgefield, CT. Using a single short tower behind a school bus depot in the town landfill, he launched a new AM station then known as WREF on 850 kHz. The station blossomed by serving an audience that other stations were ignoring, with a musical format of pop standards. Gradually upgraded from 500 watts to 2.5 kW and sold in 1995, it is now known as WAXB with a classic rock format, paired with a low power FM in Danbury on 107.3 MHz that he started decades later.

WAXB / W297AN logo

Salem Center

WJZZ was inspired years later by a student who wanted to start a radio station at Ridgefield High School. Dennis began research to find another local broadcast frequency to develop. FM frequency allocations are tough to find in the New York City metropolitan area, and none was viable in Ridgefield. The closest shot was a small sliver of unalloted space around North Salem, NY in the very upper northeast corner of northern Westchester. Dennis applied to the FCC for the 90.1 MHz slot during a non-commercial FM station application window and was granted a permit to begin construction in October 2007.

The first step was to find a home for the transmitter. The original plan was to put the antenna on a telephone pole behind the town garage in North Salem. "The coverage was going to be useless and it would have been a pain to build a directional antenna with the parameters we would have needed. I thought about a nearby golf course but it was difficult to make an arrangement."

Time passed and Dennis found an alternative. Maybe the station could broadcast from one end of the allocated coverage territory and beam across it with a simple directional antenna. "You can see on a map where it can be engineered in, so I went there and I started asking around. It's a sort of industrial area. There was a garage there so I walked in and said 'could I talk to somebody about putting up a pole with an antenna on it for a small FM station?'"

"The woman was great. She said: 'all these properties are owned by one guy, and he's real nice. You should go see him!' So the owner takes me over to this house that used to be part of a motel and trailer park, before they built I-84. There are still 6 trailers, a house, and a few rented motel rooms. The house is on a small knoll and it was perfect for putting up a pole where the thing would fit. After receiving FCC permission to move, we hung the antenna on a mast on the roof, and that's where we built it. I didn't pursue the ultimate optimization of it. I just wanted to get it built before the license and permit would expire so that's why it is where it is."
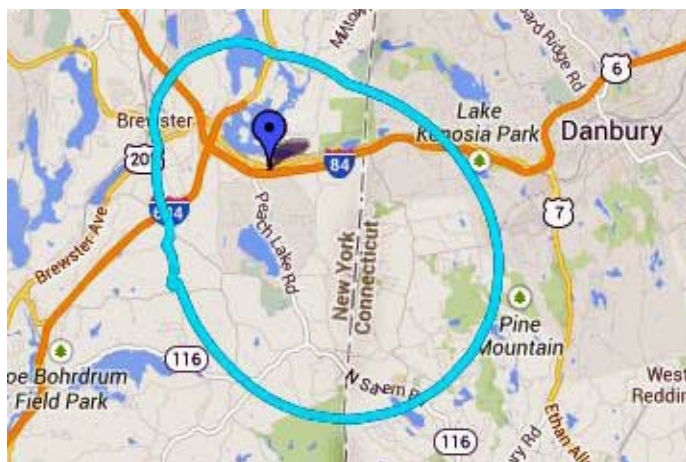
FCC 60dBμ service contour for WJZZ on 90.1 MHz, using the directional transmit antenna.

On the air

With a new license and a new home, WJZZ 90.1 FM in North Salem, NY was born. It first hit the air a little over a year ago. Dennis was using an older transmitter and encountered VSWR issues matching it to the antenna. It was kept off the air due to unreliable service until last Fall, when Broadcast Warehouse furnished a robust 600 watt TX600-V2 transmitter that now chugs along at a conservative 175 watts output. Add the gain of WJZZ's Kathlein Scala CA-2FM antenna, a folded dipole with a single reflector, and the effective radiated power adds up to 440 watts, with the major lobe to the SSE.

The CA-2FM could easily be mistaken for an old TV antenna mounted on a vertical pipe at the peak of a house roof. Pass by the house, on the westbound side of I-84 just before the NY route 121 North Salem exit, and you can easily spot it by its unusual appearance. Neither horizontal nor vertical, the CA-2FM has a 45 degree tilt to provide energy to both polarizations much like a circular antenna design.

WJZZ transmit site near Brewster, NY. Slant-polarized CA-2FM antenna is visible above the chimney.

When I first heard the station just before New Year's Day 2014, it was monaural, but in just a few days WJZZ was operating in stereo with RDS data showing its callsign. The TX600-V2 transmitter has a built-in 4 band audio processor which puts the final touch on Dennis's .mp3 collection before it hits the air. Every song sounds leveled out and gently processed for a slick professional sound. Only a few announcements dot an otherwise continual day of music.

Current station equipment for WJZZ, 90.1 MHz FM. RDS encoder and Dell notebook computer are mounted on top of the Broadcast Warehouse TX600-V2 transmitter, which produces 175 watts RF output.

"Look at 'JZZ. Who would want that facility except a radio geek like me? When people think of a radio station, they think of staff and a news department, an engineering department and sales. This station is really just an automation system in an attic with a studio at home." Dennis isn't kidding. It really is just a transmitter and a Dell laptop playing back continuous music and some announcements. His only overhead is a shingled attic roof!

Hairy format

Even the music at WJZZ has a signature all its own. Dennis thanks his barber for inspiration! "It's a computer with a playlist of about 1,600 MOR (middle-of-the road) songs first assembled for my barber." Dennis said he put some .mp3 songs on a player for him and it became a labor of love. "It's sort of an eclectic mix of MOR, jazz and soft contemporary and some smooth jazz. Everyone in the barber shop said they liked it. So I said, what the heck, I'll put it on WJZZ. I'd rather be doing something that no one else is doing. That's all it is!" All of his songs don't fit into any one format, yet, all mixed up, you will often say "Hey! I like that one too!" The sound is fresh, entertaining and simply pleasant.
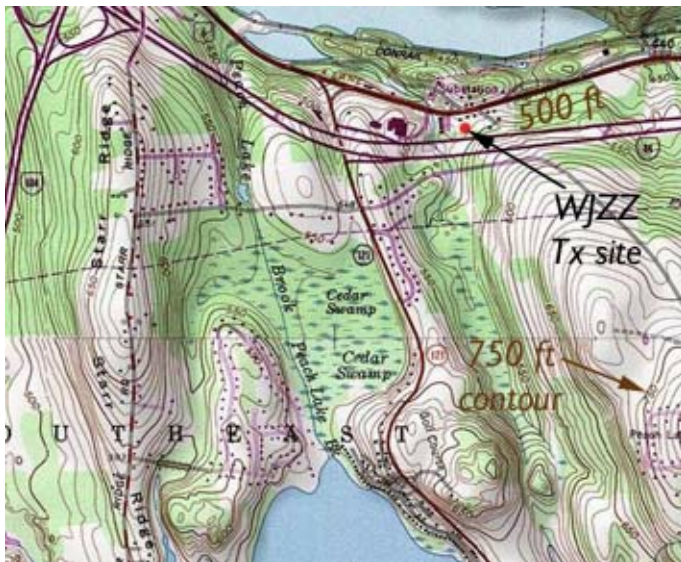
Keep those MP3s coming in

Dennis extends an invitation to all: "If any of the club members have ideas for programming, we can take .mp3s of a program that was produced. I would be happy to have someone submit a program. It could be a weekly program or a monthly program or anything. All they would have to do is e-mail me the .mp3 and I could upload it and we could play it on the air. I would like to do something besides playing my music." All of the programming is in .mp3 format. Just a simple upload and you are on the air.

Moving up

As for the future, Dennis still has some hopes for WJZZ. "Eventually I'd like to upgrade and optimize it. There is a place where it will fit more up on a hill instead of just pointing south since the site would be south of I-84." WJZZ is now situated slightly lower than the roadbed of I-84 westbound on the north side of the highway. "The window it would fit is sort of a north-south rectangle. From the new site, it could point south and have a second directional element pointing north. Between the two of them, it would have a lot more coverage and would cover more people. Instead of being on the side of a hill, it would be up on a hill." I wonder what will develop!

Community service

I can't imagine Dennis ever stopping. His passion is the engineering, programming, imaging, and sales of broadcast stations. Listeners and communities have responded. "There is some truth in 'build it and they will come.' It's fun to build them, help them grow, and go around and DX the fringes of coverage. I always try to nurture them into something meaningful. There are a great many people who believe in community radio. Unfortunately, since the Telecommunications Act of 1996 deregulated radio ownership and allowed mass consolidation, many excellent broadcasters have fallen victim to cost cutting by out-of-town corporations that are driven by the bottom line rather than community service. I'm one of a handful of small independent broadcasters trying to buck this trend. I've mostly been in small markets where, in the absence of extensive competition, we've had success."

What Dennis enjoys most are the rewards of boosting a community and making a contribution to the quality of life. Local commercial radio stations operated by small but dedicated staff, and non-commercial radio stations, filled with enthusiastic volunteers, can become vital services in the areas they cover. Time after time, through technical knowledge and programming guidance, Dennis has brought something new to the areas that his stations serve. Take a listen on 90.1 MHz the next time you drive down I-84. You'll be glad you did!

Until next month, 73s and dit dit de N2KZ 'The Old Goat.'

Shaded contour map shows how the terrain SSE of the 490 ft WJZZ transmit site rises to 750 ft ASL.

Net night

Peekskill/Cortlandt Amateur Radio Association holds a weekly net on the 146.67 MHz W2NYW repeater on Thursdays at 8:00 p.m. Join net control Karl, N2KZ for news and neighborly information.

Life on Mars

Henry, KB2VJP reminds us of a PCARA Old Goats' net "Question of the Week" raised by Karl, N2KZ on Oct 10, 2013 – "What is the Elser-Mathes Cup?"

Henry provides a detailed answer from the Spring 1994 issue of *Communications Quarterly*, an amateur radio journal that was transferred to ARRL from CQ Communications in January 2000.

Early days

The story goes all the way back to the 1920s, an era when radio technology was emerging from its infancy and developing rapidly. Vacuum tube oscillators had replaced broadband spark transmitters and Edwin H. Armstrong's regenerative and superhet receivers were taking over from crystal detectors. Radio amateurs had shown the advantages of short waves below 200 meters for long distance communications, by both day and night. Records had been falling throughout the 1920s for North American contacts, followed by transatlantic reception, transpacific reception and two-way contact across the wide oceans on short wave.

With many records passed, two radio amateurs from the USA decided to sponsor an award that would surpass all terrestrial achievements so far with a cup

View of Mars taken from Earth by NASA's Hubble Space Telescope. The north polar carbon dioxide cap is evaporating, revealing the permanent ice cap.

for the first amateur communication with a planet other than Earth — they chose the planet **Mars**.

Mars is the fourth planet from the sun, orbiting 142 million miles out, compared with Earth's 93 million miles from the sun. The distance between Earth and Mars varies between 35 and 249 million miles. As a result, two-way communication would be no easy achievement, especially with tube-based technology of the late 1920s.

The cup is named after Fred J. Elser, W6FB/W7OX and Stanley M. Mathes, K1CY. "FJ" Elser had been living in the Philippine Islands during the radio-active

early 1920s, where he was involved in both broadcast and amateur radio (PI3AA, K3AA) on the then-US-administered islands. In 1928 he had paid a visit to ARRL Headquarters in Hartford, CT where he encountered ARRL founder and President Hiram Percy Maxim, W1AW. There he learnt of "The Old Man's" interest in cosmology, especially the planet Mars. HPM had made his own globe of the "red planet" showing all the physical features discovered through optical telescopes. In 1933, Hiram Maxim would go on to publish *"Life's Place in the Cosmos"*, a book about the possibility of life on other planets. With regard to Martian technology, HPM wrote: "If radio communication is enormously ahead of ours, who shall say that the Martians have not been calling us for several centuries, hoping that eventually a day would come when we should have arrived at a stage of intellectual development that would enable us to identify the call and answer it?"

Fred J. Elser, W6FB

ARRL President Hiram P. Maxim, W1AW was fascinated by cosmology and the planet Mars.

Returning to the Philippines in 1928, FJ Elser received a visit in Baguio City from fellow-amateur Stanley Mathes, ex-7OE, then K1CY. Stanley M. Mathes was a Lieutenant Commander in the US Navy and heavily active in the ARRL Field Organization as SCM. Together they came up with the idea of an award for the first amateur radio two-way communication between Earth and Mars.

Looking for a suitable trophy, they found a wood-carving in a local store in Baguio. The native Igorot carving consisted of a curved wooden bowl, standing roughly a foot above a wood base. Two figures sit on the base along with two standing figures who support the bowl.

Fred Elser described the base and its seated figures as representing the earth plus inhabitants, while the bowl represents Mars. The standing figures represent radio amateurs who will link the two worlds. A plate fastened to the bowl describes "First Amateur Radio Two-Way Communication Earth & Mars" with space for names and calls, while the base is labeled "Elser

Mathes Cup". (See W6FB's 1969 article: http://p1k.arrl.org/pubs_archive/56348). The cup has resided at ARRL Headquarters since 1929, awaiting the day when amateur contact is made with the red planet.

The Elser-Mathes Cup is still waiting to be claimed.

Fred Elser lived to see the 1969 moon landing and hoped the cup would be awarded within his own lifetime. But it was not to be, as FJ passed in 1988. In 2012 Scott Hedberg AD7MI speculated on the chance of radio amateur communication with NASA's Martian rovers, but thinks this unlikely. (See: http://www.amateurradio.com/the-pursuit-of-the-elser-mathes-cup/). There have been additional attempts by the USA and other nations to send automated landing craft to Mars, with a high failure rate — indicating how difficult future missions will be. And yet, forty five years after the first Lunar landing, and eighty six years after the award was created, we can now see the possibility of the Elser-Mathes cup being awarded for a human Mars-to-Earth contact within *our own* lifetimes.

Future visit

Speaking in 2010, President Obama foresaw a manned expedition by NASA to orbit Mars, followed by a landing in the mid-2030s. Plans are currently underway to send a "Red Dragon" capsule to the surface of Mars in 2018 to search for evidence of life and possibly to deliver equipment for a future human expedition — though budget problems are currently slowing the schedule.

One way trip

A Dutch entrepreneurial group named "Mars One" is planning a **one-way** manned mission to Mars, beginning in 2023. "Mars One" is a not-for-profit organization spanning political boundaries, financed by

crowd-funding. The group has already recruited 1,058 possible volunteers for the trip, with a rigorous training program, to be featured in a reality TV show. Initially, there would be several unmanned trips to the planet to build a habitable colony, followed by the first actual expedition rocket in 2025 carrying four people to the Martian surface. See: http://www.mars one.com/. Let's hope that at least one of the crew is a radio amateur, and their Martian achievements are recorded for a popular TV show!

- KB2VJP / NM9J

Tabletop HD Radio -W2CH

From the January 2014 *PCARA Update*, I was reading the column describing the lack of HD Radio™ models for the U.S. Market. 'Update' editor NM9J and I must be part of a very small group of people actually listening to HD Radio in our area.

Previous tries

I already had an older Insignia NS-HD01 portable radio from five years ago, which looks quite different from the current Insignia portable model. The newer NS-HD01 portable had mixed reviews when I looked them over.

Old Insignia NS-HD01 portable from 2009. [Pics by W2CH]

I also have the later, slightly smaller Insignia NS-HD02 portable model, also just FM, which has now been discontinued. That model had an annoying quirk of locking up after a selection was made. But I found that in the menu, I can leave the backlight on permanently, and the radio will no longer lock up. I find reception is pretty good with headphones. The photo shows an example of HD FM reception, with an HD2 or HD3 station tuned in. Some of the MW-AM NYC stations are available this way. I also found that some stations such as WBLS-FM, and 102.7 HD-2 Smooth Jazz, show album art when a tune is being played.

Insignia NS-HD02 portable radio tuned to WCBS-FM, 101.1 MHz. The HD2 subchannel carries WCBS-AM Newsradio 880.

Tabletopper

I was unaware of the Insignia NS-HDRAD "HD Radio Tabletop" until it was described in the article last month. It seems to have received better reviews than any of the portable models, so at its current $39.99 sale price, I ordered one without delay. I was worried in case the model might disappear quickly, like the NS-HD02 and Sony HD Radios did.

Shipment from Best Buy was fast — two days later I received the Insignia Tabletop HD receiver via

UPS. I had it up and running quite rapidly on four AA batteries.

Insignia NS-HDRAD is a tabletop HD Radio with analog/digital reception on VHF – but no AM. [Pics by W2CH]

The radio comes with a "pigtail" antenna wire which gives about the same reception as the telescopic whip antenna. It locks on to HD stations and their sub-channels after the usual delay. From White Plains, I can receive just about all the New York City stations and a couple of local HD FM stations well. The radio comes with a wall-wart AC adapter as an alternative to the AA batteries.

Rear of the tabletop radio. Connectors L-to-R are: external DC power, Aux-in and, on the right side, Pigtail antenna.

I enhanced the audio from the small internal loud-speakers by plugging my Bose amplified speakers into the audio output jack. The Insignia receiver also has an "Aux in" jack for an MP3 player or other audio device. There is

Tabletop receiver's LCD display while receiving an HD1 digital broadcast.

a "Source" button to change from the FM tuner to the "Aux in" jack. It is also possible to store stations in memory.

I found a couple of YouTube videos about the NS-HDRAD model and most written reviews in the past year have been favorable. It's an advantage that it can run on AA batteries so you can move it around. My location is 22 miles from most of the New York City stations, so this should give some indication of how well it works at that range. WEBE, 107.9 MHz, from Westport /Bridgeport, CT is about 30 miles away and HD Radio reception was not possible. In a case like this, where a station is not strong enough for HD recep-

Analog transmission from WHUD-FM identified by its RBDS (RDS) data.

tion, but strong enough for stereo, the analog signal can still be identified by RBDS, the U.S. version of the RDS Radio Data System. Many other stations from further away on Long Island, in New Jersey and Connecticut and further upstate in New York are received well enough for analog stereo reception.

As some reviews have stated, it would be nice if HD Radio reception on **AM** was included in the Table-top receiver, but a number of the AM stations from New York City are also available on VHF-FM HD sub-carriers — including WFAN, WABC, WNYC, WCBS, and WINS. One can tell the difference between analog FM reception and digital when the receiver switches to HD Radio, as the brilliance improves on the HD-1 version.

To improve reception, it is possible to connect an external antenna to the "Pigtail antenna socket" on the back of the radio, using a 3.5mm audio jack. Fortu-nately I already had an antenna cable adapter for CB HT use. It would be interesting to see what difference a roof-mounted antenna would make.

Dimensions of the radio from the detailed User Guide are: width - 8.23 inches, height - 4.45 inches, and depth - 2.13 inches. Weight is 1.32 pounds. The audio power output is 2×1.5 watts per channel and headphone impedance is 32 ohms. The power require-ment as provided by the external supply is 5.9 volts.

- Ray, W2CH

New York QSO Party

On January 10, Rochester DX Association published results for the 2013 New York State QSO Party, which took place on October 19.

The PCARA club entry was organized as a multi-op effort by Joe, WA2MCR using his home station with a Carolina Windom antenna. Operation was mostly on 40 meters and 80 meters, phone and CW, using club call W2NYW from Westchester County (WES).

Joe, WA2MCR participating in PCARA's multi-operator entry in the 2013 New York QSO Party.

In the twelve hour event, W2NYW made 300 QSOs, for 345 points. There were 83 multipliers (NY Counties, States and Canadian Provinces) for a final score of 28,980 points.

Peekskill / Cortlandt Amateur Radio Association's entry was positioned **39th** out of a total of 243 entries. Analysis shows that PCARA was **8th** out of 13 multi-op entries and **first** out of four entries from Westchester County. Our first place in Westchester County means that W2NYW will be awarded the Plaque for "High Score - Westchester County Operator" as sponsored by the Westchester Amateur Radio Club, WE2OEM.

Certificate commemorating PCARA's High Score from Westchester County in the 2013 New York QSO Party.

In the 2013 QSO Party, PCARA sponsored the plaque for "New York Multi-One", meaning multiple operators with only a single transmitted signal at a time. There were several entries in this category, however, according to the Plaque results, there was no winner of this category in 2013. Joe, WA2MCR is currently investigating the anomaly with the organizers.

For more details of all the results, navigate to the Rochester DX Association's web site, http://www.rdxa.com and hover on the "NYQP" tab.

Arecibo visit - W2CH

[January's PCARA Update featured a description of the Arecibo Observatory and how Ray W2CH worked their 50th anniversary special event station, KP4AO. In a recent visit to Puerto Rico, Ray and Marylyn KC2NKU were able to visit the Observatory. Here Ray describes the experience. - Ed.]

We joined the Observatory tour scheduled for Sunday, December 29, 2013, as that was the only guaranteed date while we were on the island. It included a morning tour to nearby Camuy Caves, with a lunch stop in between the two destinations. We left our hotel around 8:15 am, picked up more tourists at another hotel, then set out in the medium-sized bus with a driver who was also our tour guide. We headed west

from San Juan, by expressway for about an hour and a half, then on a local road to the Camuy Caves, after which we made a local stop for lunch and drove over to the Arecibo Observatory.

Construction of the Arecibo Radio Observatory began in 1960 in an area of low radio noise, with the thousand foot dish sited in a natural hollow. The moveable antennas are suspended above the dish. The facility opened in November 1963 for scientific
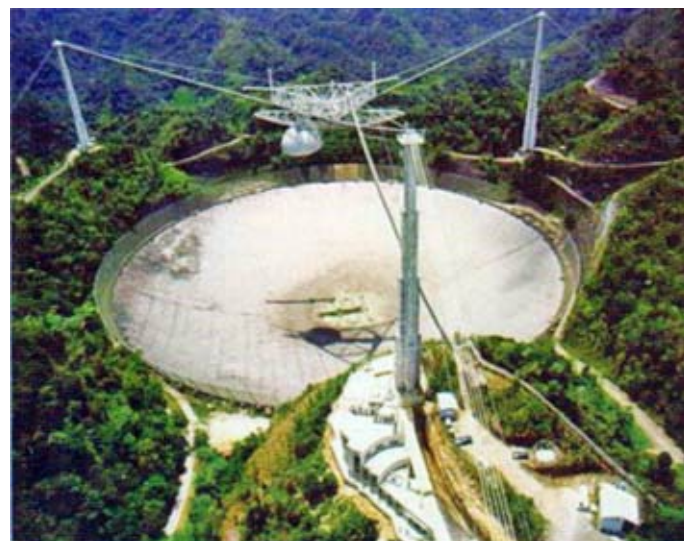
1000 foot dish at Arecibo is constructed over a natural sinkhole, with the antennas suspended from three towers.

investigation of the ionosphere and outer space phenomena.

After our bus was parked, we walked up a road, about five hundred steps — though transportation

Visitor entrance to the Arecibo Radio Observatory in Puerto Rico. [Pics by W2CH]

could be arranged — to the visitor building and gift shop, where our driver-guide obtained our tickets. There are active exhibits inside the building, but we didn't spend too much time on them, in order to attend a short fifteen minute video about the Arecibo Observatory, and some of the achievements there. For example in 1974 astrophysicist Joe Taylor, K1JT and Russel Hulse discovered the first Pulsar in a binary system from Arecibo, for which they were awarded the Nobel Prize in Physics for 1993. Joe Taylor also originated the software for WSJT and JT-65, digital modes suitable for weak signal communication via moonbounce, tropo and meteor scatter. The Arecibo guide discussed a few other matters then led us outside to the observation deck to take photographs of the dish and antennas.

Time was limited as we had to be back at the tour

Ray W2CH pictured on the Arecibo observation deck, above the rim of the 1000 ft dish. [Pic by Marylyn, KC2NKU].

bus by 3:30 pm for the drive back to our hotels. We mentioned to the guide about having contacted amateur station, KP4AO on November 10, 2013, for their 50th Anniversary, for which I had obtained a certificate and card, but she was not familiar with the amateur radio operations.

I asked where Jodie Foster was filmed at Arecibo for the 1997 movie, *Contact*. The guide pointed out the supporting tower, to the left in my photograph, which was used in the film. She said the 1995 James Bond movie *Golden-Eye* used green-screen optical effects, as well as models and actual footage to depict the submerged "Cuba satellite dish" in

Radio-astronomer Dr Ellie Arroway, played by Jodie Foster, spent time at Arecibo in the 1997 movie Contact.

the spectacular climax.

"Cuban satellite dish" shown in the James Bond movie GoldenEye *was really the Arecibo Observatory in Puerto Rico.*

I have no idea if any experiments were being conducted at the time of our tour, as I believe they are carried on from the other buildings.

We left the observation area and went to the gift store to try and obtain a souvenir from Arecibo. But there were no books about the site, or even a fridge-magnet — only space-related books, and books about Puerto Rico in Spanish. The handout for Arecibo I obtained was also in Spanish.

We headed back down the hill to our tour bus and left on time, back to the Expressway, near the town of Arecibo, then driving east towards San Juan, where we encountered heavy traffic near the city and returned to our hotel around 5:00 p.m.

The trip was certainly worthwhile — it was impressive for us to see the Arecibo Observatory in person, especially as radio operators. I remember when I was a new ham and Sam Harris, W1FZJ, was written up in *QST* for having operated there on UHF frequencies doing EME moonbounce, almost 50 years ago, when the Arecibo Observatory was brand new.

- Ray, W2CH

Windows wait

Start me up

For over 35 years, Intel has been manufacturing *x86* processors with higher speeds, more transistors, additional cores and larger address spaces. And for almost twenty years following the release of Windows 95 in August 1995, the combination of Microsoft Windows software running on Intel hardware has dominated personal computing. In the meantime, USB has replaced serial ports, broadband connectivity has become widespread, modems have faded away and portable computers have emerged with built-in Ethernet and wireless.

Microsoft has matched these increased capabilities with improved versions of Windows for personal computers. After Windows 95 came: Windows NT 4 (1996), Windows 98, Windows 2000, Windows ME (Millennium Edition, 2000), Windows XP (2001), Windows Vista (2007), and Windows 7 (2009).

Apple's byte

But the world of personal computing was changing. The arrival of Apple's iOS-based iPhone in 2007, followed by the iPad tablet in 2010 have been complemented by non-Apple devices running Google's Android operating system. Smartphones and tablets have taken an increasing bite from sales of Windows-based hardware. The new devices have no separate keyboard or mouse. Instead they rely on a touch-screen which can be pressed or swiped with one or more fingers. A "soft" keyboard appears when needed, so the touch-screen can also be used for typing. You might not be able to write the great American novel on a tablet, but you can certainly type a web address or reply to an e-mail. We can thank Steve Jobs for development of the multi-touch screen when he insisted in 2005 that Apple's new tablet should *not* have a separate keyboard or stylus.

Steve Jobs with the Apple iPad.

Don't start

Microsoft's answer to the smartphone and tablet challenge was its next operating system, **Windows 8**, released in October 2012, at the same time as Microsoft's first "Surface" tablet. Windows 8 was a major departure from Microsoft's previous operating systems as it was designed from the beginning for touch-screen devices. The old "Start Menu", in use ever since Windows 95, was abandoned in favor of a "Start Screen" which displays program choices and continuously-updated information in a grid of large, colorful live tiles. This design may allow fat fingers to make a selection more easily on the touch-screen, but it causes problems for Windows' traditional user-base who are more familiar with a mouse for precise selection from a menu.

Windows 8 Start Screen.

When Windows 8 first appeared at the end of 2012, there was a very mixed reception. Compared with Windows 7, improvements in start-up time, security and support for cloud-based features were all widely praised. But the new interface — once called "Metro", and now termed "Modern UI" — came in for a lot of criticism. Although the traditional Windows desktop was still available, it was minus the "Start" button, and Windows 8 would not boot directly into the old-style desktop. Instead it went straight to the new Start screen, even on a non-touch system. Users felt confused as the two environments pulled them in opposite directions. And Windows 8 did not come with a good tutorial for novices who were getting used to the new environment.
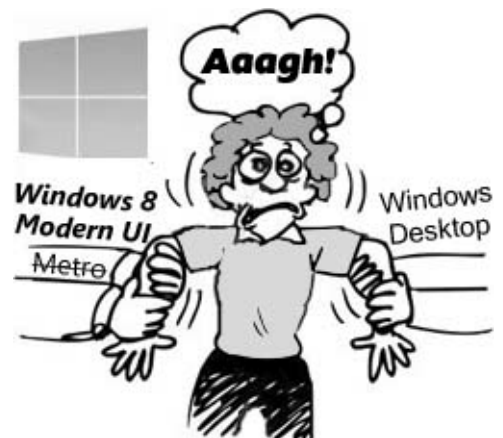
Doom and gloom

As a result of these shortcomings, businesses have mostly avoided Windows 8 and are staying with Windows 7 — or even with Windows XP until support ceases. Despite optimistic claims from Microsoft, PC sales have now fallen for six quarters in a row, so that by the end of 2013, IDC estimated that PC sales had dropped 10% compared with 2012. HP has recently advertised new PC models with "Windows 7 back by popular demand".

Nifty Netbook

Back in 2009, as described in the September/October 2009 issues of *PCARA Update,* I was looking for an inexpensive computer for logging and digital modes at Field Day. The solution I found was a **netbook**. Netbooks are small, bargain-basement notebook PCs, usually based on the Intel "Atom" processor. They are stripped of frills such as optical drive or card slot. In the period before

HP Mini 110 Netbook

Windows 7 appeared, these netbooks were supplied with "Windows XP Home Edition for Ultra Low Cost PCs SP3", which was compatible with much existing amateur radio software.

My HP Mini 110 netbook with its tiny 10 inch screen was used on several PCARA Field Days. Outside contests, I found it useful as a knockabout computer that connected anywhere in the house thanks to built-in Wi-Fi. It was handy for checking news from ARRL, viewing weather on NWS and looking up movies on IMDB.

But support for the netbook's XP operating system comes to an end in April 2014. With no more security patches from Microsoft, Windows XP will become a target for viruses and spyware. So my hunt was on for a netbook replacement.

Ultra secret

At first I thought an "Ultrabook" might be the right choice. Ultrabooks were Intel's answer to the MacBook Air, with a light, thin design, a low-power processor for long battery life and a solid state drive for the operating system to ensure fast start time. Unfortunately most Ultrabooks also have an "Ultra" price of 50% more than an equivalent notebook PC.

Even if an Ultrabook was too expensive, I still wanted a solid state drive, a touchscreen and Windows 8, to see just how good or bad Microsoft's latest operating system really is. The computer I chose was an HP "Pavilion X2" model with 11½ inch touch-screen, 4 GB of memory and 128 MB solid state drive. While it can be used as a conventional notebook with keyboard and touchpad in the base, the"X2" designation means the touch-screen top can be released from the base by sliding a latch, then used as a separate tablet.

What's included

Compared with my five-year old netbook, the "X2" computer has cut a few more corners to keep the price down. Gone are the Ethernet RJ-45 jack and VGA connector for an external monitor. The only network connection is through built-in Wi-Fi, and if you want to connect a monitor, it will have to be HDMI. There are only two USB ports in the base, though one of them is now an

HP Pavilion X2 detachable notebook computer can be converted to a tablet.

ultra-fast USB-3 type, now natively supported in Windows 8. The Silvermont mobile CPU is a low-power 4-core Pentium N3510, released in September 2013 and a major improvement over the old Intel Atom.

First impressions

My first encounter with Windows 8 on the new computer was not a happy one. The shiny new tiles for 'apps' and utilities in the "Modern UI" Start window were just annoying. After exploring the "charms" by swiping the right edge and struggling with the Apps list, I quickly found out how to switch to the traditional Windows desktop (click the 'Desktop' tile or press the "Windows" key.)

The Windows 8 desktop is a more familiar environment, and works in a similar manner to Windows 7, with customizable wallpaper, a task bar at the bottom and program shortcuts across the desktop. But — the Start menu was missing! This was completely infuriating. How could you start a program that has no shortcut on the desktop or taskbar? What Microsoft wants you to do is return to the Windows 8 Start window then make a selection, either from the giant tiles or from the Modern UI Apps list. This multi-step procedure was a terrible design decision in terms of familiarity and ease of use.

Windows 8 Modern UI Apps list, shown here sorted by category.

On the positive side, the new computer is agreeably fast, with a startup time of only 16 seconds from cold, compared with 85 seconds for the old netbook. Shutdown time is even faster. The solid state drive and multi-core processor certainly contribute. The LED-backlit screen is also an improvement, with a resolution of 1366×768 pixels, compared with 1024×576 for the netbook. That low vertical resolution on the old netbook caused problems for software whenever a window was too large to fit on-screen.

Point me up

One factor influencing my choice of a Windows 8 PC was Microsoft's recent release of a "point" upgrade to Windows 8.1 in October 2013. Microsoft usually releases "Service Packs" to fix bugs during the life of its operating system software, so this "point" approach is something of a departure. General advice is to avoid brand new products from Microsoft until the first Service Pack has appeared.

The Windows 8.1 upgrade must be installed from the Windows Store, rather than downloaded from Microsoft's Internet site. I carried out a Windows Update to make sure I had all patches for the existing version of Windows 8, then followed the procedure for installing the large 8.1 "App" from the Store.

Positive point

My first experience of the changes in Windows 8.1 was positive. Microsoft has reacted to early criticism by making it possible to boot straight to the Desktop and by restoring a substitute "Start" button in the bottom left corner, disguised as a Windows logo. Settings to optimize the desktop are available by right-clicking the Desktop taskbar, choosing "Properties" then clicking the tab "Navigation". There you will find options to boot directly to the Desktop, to show the "Apps" view automatically when going to the Start screen and to sort those Apps automatically by Category. Unfortunately, the traditional Windows Start menu is still not available in Windows 8.1, so recourse to this "Apps" view is still needed. On the other hand, *right*-clicking the Desktop's new "Start button" brings up a very useful menu of system-related utilities and choices including Control Panel, File Explorer and a Shut-down menu.

Sadly, the upgrade to Windows 8.1 brought with it a raft of new problems. On my PC the brightness control stopped working, network connectivity took a long time to establish, the Touchpad mouse would freeze and there was no recovery after the computer went into 'sleep' mode. It took a while for solutions to appear, but by applying driver updates from HP, updating the BIOS and installing some post-8.1 fixes from Microsoft, these difficulties were resolved.

Little steps

Unfortunately there are still problems with Windows 8.1. The old-style Start menu is still badly missed — the "Modern UI" Start window is a poor substitute. Microsoft removed the "Desktop Gadgets" capability that was in Windows Vista and Windows 7, so there is no easy way to add small indicators to the desktop, such as a CPU utilization gadget. The "Windows Experience Index" has been removed from Control Panel's "System" screen. And after the 8.1 upgrade, my solid-state drive was being defragmented automatically — which is not recommended as it wears out the memory cells.

There are rumors that Microsoft will fix some of these basic problems with a further update to Windows 8.1 in April 2014, followed by a completely new version of Windows (version 9?), code named 'Threshold'. This would be released in April 2015, well after current CEO Steve Ballmer has retired.

Despite all this, I quite like my new "X2" notebook as a netbook replacement. It is fast and responsive, with a larger display than the old netbook. And the solid state drive should be less vulnerable to knocks and shocks than a spinning hard drive.
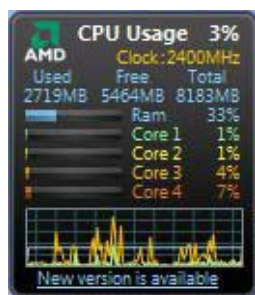
Desktop gadgets — as seen in Windows 7 and Vista —have been banished from Windows 8 by Microsoft.

Stone tablet

I tried undocking the upper touchscreen from the lower keyboard base so it could be used as a separate tablet. The tablet hardware works well, but support from Windows 8 in the tablet configuration is poor. Windows 8 is a difficult environment to get used to on a touch-only device. It is less intuitive than Apple's iOS for iPhones and iPads. And it demonstrates a confused nature, not knowing whether to be "Modern UI" or traditional Desktop. Classic desktop applications are mostly doomed to failure as clumsy touch-screen gestures are no substitute for precise mouse pointing.

Radio time

It was time see whether the new computer could be put to use with amateur radio. The first application I tried was controlling a Kenwood TM-V71A dual band mobile transceiver. This radio has a PG-5G programming cable which needs a serial connection. I plugged an existing Radio Shack GigaWare 26-949 USB-to-serial cable into the computer's USB port — the computer found an up-to-date Windows 8 driver automatically. But in Device Manager there was an exclamation point against the new entry and a "Device cannot start" message. A little online research revealed that my Gigaware adapter has an *older* version of the Prolific PL-2303 USB-to-serial controller, which is *not* compatible with Windows 8. More recent Gigaware models should be fine.

I obtained a modern, own brand USB-to-serial adapter from Staples. When this device was plugged into the USB port, the computer quickly installed the Windows 8.1 driver for "Prolific USB-to-serial COM port" without a problem, and the new serial adapter was up and running as COM3. I downloaded the latest version of Kenwood's free MCP-2A control program from the Internet, connected the serial adapter to the radio and ran the software. The TM-V71A was recognized, I was able to read data from the radio, save data to disk and reprogram the radio. Success at last!

Staples USB-to-Serial adapter works with Windows 8.1

Quickly Digi

I wanted to see how well Windows 8 would handle digital modes, so I plugged my Tigertronics "SignaLink USB" Integrated Sound Card adapter into the USB port. My computer quickly installed suitable drivers for the SignaLink's built-in sound card, identifying it as "USB Audio Codec". I then followed Tigertronics' instructions for configuring the new sound card in Windows 7/8.

Next I downloaded the latest version 3.21.77 of Fldigi software, configured Fldigi for the "SignaLink USB" and switched on my Icom IC-706MkIIG transceiver. Good

news — the waterfall display was immediately showing strong digital signals on 20 meters. This was most encouraging.

SignaLink USB integrated USB Sound Card adapter (left) is connected to the Icom IC-706MkIIG transceiver for digital modes.

I tuned around 20 meters on the IC-706 and a few minutes later, I had my first PSK31 contact using the new setup — this was with AI8F, Corey in Lookout Mountain, Georgia. Full marks to Tigertronics' "SignaLink USB" adapter and to W1HKJ's free Fldigi software for being Windows 8 compatible and very easy to set up. (See http://www.tigertronics.com and http://www.w1hkj.com)

Fldigi software is shown, with several PSK31 signals visible on the waterfall display. Fldigi 3.21 is running on the Windows 8.1 desktop, on the HP X2 convertible notebook.

Don't touch, just wait

Needless to say, radio testing was carried out on the docked computer using the traditional Windows desktop and classic-style applications, with mouse and keyboard working as they should. There was no touchscreen needed and not a single "Modern App" in sight.

If you are looking for a new computer suitable for amateur radio applications, you might want to seek out a model that still has Windows 7, or skip past 8 and perform a **Windows wait** for Microsoft's next offering.

- NM9J

New format

If the newsletter looks a little different this month, that's because of new page layout software. Serif's PagePlus X7 is now in use instead of Adobe PageMaker.

PageMaker has been employed for production of the newsletter ever since the first electronically-distributed edition, which appeared in December 2001.

- *Ed.*

Cub Scout demo

Here are more photos from PCARA's presentation of Amateur Radio to Cub Scout Pack 118 at Furnace Woods Elementary School, on Friday Feb 24 — as described by Greg, KB2CQE on page 1.

Mike, N2HTT demonstrates Morse code and QRP equipment to the Cub Scouts.

Lovji, N2CKD shows the Cub Scouts direction finding equipment and a computer game that teaches Morse code.

Henry, KB2VJP demonstrates his MFJ code oscillator and Yaesu FT-817 multi-band portable transceiver.

Peekskill / Cortlandt Amateur Radio Association

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Newsletter contributions are always very welcome!
Archive: http://home.computer.net/~pcara/newslett.htm

PCARA Information

PCARA is a **Non-Profit Community Service Organization**. PCARA meetings take place the first Sunday of each month* at 3:00 p.m. in Dining Room B of the Hudson Valley Hospital Center, Route 202, Cortlandt Manor, NY 10567. Drive round behind the main hospital building and enter from the rear (look for the oxygen tanks). Talk-in is available on the 146.67 repeater. *Apart from holidays.

PCARA Repeaters

W2NYW: 146.67 MHz -0.6, PL 156.7Hz
KB2CQE: 449.925MHz -5.0, PL 179.9Hz
N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sun Feb 2: PCARA meeting, Hudson Valley Hospital Center, 3:00 p.m.

Hamfests

Sun March 2: LIMARC Hamfest, Levittown Hall 201 Levittown Parkway, Hicksville, NY. 9:00 a.m.
Sun April 27: Orange County ARC Hamfest, Town of Wallkill Community Center, 2 Wes Warren Drive, Middletown, NY. 8:00 a.m.

VE Test Sessions

Feb 1: Yonkers PAL Ham Radio Club, 127 N Broadway, Yonkers. 2:00 p.m. Michael Rapp (914) 907-6482.
Feb 2: Yonkers ARC, Yonkers PD, Grassy Sprain Rd., Yonkers. 8:30 am Contact John Costa, (914) 969-6548.
Feb 13: WECA, Westchester Co Fire Trg Cen, 4 Dana Rd., Valhalla, NY. 7:00 pm. S. Rothman, 914 831-3258.
Feb 17: Columbia Univ VE Team ARC, 531 Studebaker Bldg, 622 West 132nd Street, New York, NY. 6:30 pm. Alan Crosswell, 212 854-3754.

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