



PCARA Update



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Henry was here

This year marks the 400th anniversary of Henry Hudson's voyage along the body of water which now bears his name. In September of 1609, in search of the Northwest Passage on behalf of the Dutch East India Company, the Halve Maen (Half Moon) sailed up the estuary that the Native Americans referred to as **Muh-he-kun-ne-tuk** (the Iroquois) or **Muhheakantuck** (the Lenape) - the "river that flows both ways". PCARA is planning to hold a Special Event Station in commemoration of that historic event. The details still need to be determined, and will be discussed at the April 5th meeting, so please bring along your ideas and suggestions.



Another event planned for the April meeting is a presentation by Bob, N2CBH on the conversion of legacy commercial gear to amateur use. As mentioned in last month's newsletter this would be an excellent club project, modifying a bunch of surplus commercial HTs and mobile radios to amateur use for emergency preparedness.

ARRL Field Day 2009 is the weekend of June 27-28. PCARA is planning on once again holding its Field



Day activities at Walter Panas High School in Cortlandt Manor, NY. We will be starting the planning process at the April

meeting. Come out to help us plan and remember to check the club website for finalized details.

Our next meeting is April 5, 2009 at 3:00 PM at Hudson Valley Hospital Center. As always, **ALL** are welcome! I look forward to seeing each of you there.

- 73 de Greg, KB2CQE

PCARA Officers

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Greg Appleyard, KB2CQE, kb2cqe at arrl.net

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Orange County hamfest

PCARA booked a club table at the Orange County Amateur Radio Club Hamfest, held in Middletown on Saturday March 28. Several members came along to man the club table and to support the Hamfest.



L to R at the OCARC hamfest: Malcolm NM9J, Mike N2EAB, Diane KB2SFV, Bob N2CBH, Greg KB2CQE and Joe WA2MCR.

Adventures in Dxing

- N2KZ

Going So Low

All amateur radio operators are modern day wizards. We cast our signals up into the air and they fall, sometimes, thousands of miles away. Most amateurs enjoy reliable worldwide communications using the informal standard of 100 watts output power. With a reasonable antenna, in most cases, this is all you need to touch base with nearly anyone else you'll find on the air. 100 watts creates a big, bold signal that is hard to beat.

Consider the added challenge of attempting communications with less power or much less power! I recently enjoyed a solid QSO with a ham sitting at a picnic table in a park in Florida. Both of us were using modest batteries to power our transceivers. Our total RF output power, for both of us combined, was much less than most 100 watt operators reflect back with their antennas and feedlines. I was running one mighty watt into a homebrew dipole. My correspondent, Peter, N1PQ, was running nearly twice my power at 1.8 watts! Low power QRP operation guarantees one thing: true operating satisfaction!

Peter's gear was first-rate. He was using a Elecraft KX-1 transceiver and a Par Electronics EndFedz EF-20 wire antenna. The EndFedz is a very interesting and efficient design beloved by many hams. Take a look at: http://www.parelectronics.com/end_fedz.htm. From Peter's temporary QTH under a palm tree, he worked New York, Nebraska, Ontario, Arkansas, Texas and Illinois with less than two watts. Peter also uses the remarkable Small Wonder Labs 'Rock-Mite' transceiver that transmits mere milliwatts. He also had a very successful personal DXpedition operating from a tent in

Newfoundland and Labrador as N1PQ/VO1 fighting off black flies while working the world on QRP CW. What fun!



N1PQ/VO1 operating from Labrador beneath a personal mosquito net.

Keep in mind that Technicians and Novices can now operate with up to 200 watts on select portions of HF bands *providing you use CW*. Great excitement and fun await you. Just hook up a straight key, paddle or bug and give it a try!

What a Day!

The Long Island Wireless Historical Society and WCWP Radio are sponsoring *Long Island Radio and TV Day* on Saturday April 18th from 10 am to 4pm at the C.W. Post Campus of Long Island University at 720 Northern Boulevard in Brookville, New York. What an amazing collection of exhibits, demonstrations and celebrities they have gathered! LIMARC and The Great South Bay ARC will be operating along with a demonstration of amateur TV. Several historical societies will be present along with a flea market sale of antique radio equipment. You'll be able to tour WCWP's studios and meet dozens of local radio and television personalities. Admission is \$10 for adults with children under 12 free. A great time is guaranteed for all! Go to: <http://www.liwhs.org/> for complete details.

CQ NY

Did you ever want to experience what it might be like to be at the receiving end of a pile-up? Your chance has come! The Rochester DX Association is sponsoring a New York State QSO party running for twelve impassioned hours from 1800 UTC on October 17th until 0600 UTC October 18th, 2009. Stations outside of New York are encouraged to work as many stations within New York as they can. New York stations will be encouraged to contact as many stations as they can endure! All non-WARC bands will be eligible for use via phone, CW or RTTY. Detailed



Peter N1PQ operating QRP from Marco Island, Florida.

information can be found at: http://www.rdx.com/NewsLetters/NYQP_Rules.pdf.

NPR on AM

Most of us are familiar with public broadcasters WNYC 820 in New York and possibly WSHU 1260 in Westport, Connecticut. I recently discovered that WFCR, up in Amherst, Massachusetts, now uses the facilities of WNNZ 640 to broadcast NPR's news and talk programming. This may sound far away, but look again! WNNZ has a nice, low frequency for great groundwave coverage and operates with a full 50,000 watts during daylight hours. Driving around Northern Westchester and Fairfield County in Connecticut, WNNZ comes in surprisingly well.



WFCR is based at The University of Massachusetts in Central Massachusetts. Their FM signal, at 88.5 MHz, has phenomenal coverage. I remember hearing WFCR-FM easily on the north shore of Long Island back in the 1970s. They have been using WNNZ-AM since April 2007 through a leasing agreement with Clear Channel Communications (the owner of the station.) For those of you who really like to AM DX, you can also look for NPR on 1370 AM WXXI Rochester, New York and WPNI 1430 AM also from Amherst, Massachusetts both operating during daylight hours with 5,000 watts.

Podcast DXing

If you can't stand the QRM, QRN and QSB of old fashioned analog radio, you might like trying DXing in a whole new fashion. I used to listen to shortwave on my trusty Hallicrafters S-120 4 tube receiver as a kid growing up in New York City. I would DX for hours, using bakelite headphones, scraping out amazing catches through the noise and the fading. I couldn't possibly imagine where things have progressed to today. Now I can listen to all my old favorite stations in perfect quality and in stereo on-demand!

Most every shortwave broadcaster now offers free podcasts of their programming for all to enjoy. All your old favorites are here: Listen to the BBC, Radio

Nederland, Radio Sweden, Radio Australia, Radio New Zealand, Radio Japan – the list goes on and on. It's like you have a high-quality direct connection to program producers worldwide! (You do!) No need for an iPod here. You can listen to these broadcasts using free-to-download media players like

Windows Media Player, Real Player and iTunes. For any seasoned shortwave listener, (and anyone else!) this



can be an amazing treat. Try it out today!

Net Night

Keep in touch with the world and your fellow PCARAn! Tune in Thursday nights at 8pm on the 2 meter PCARA repeater at 146.67 MHz for The Old Goat's Net. Hear all about our new equipment acquisitions, upcoming contests and events, DXing conquests, question and answers and just plain fun. All licensed amateurs are welcomed to join our gabfest. Not licensed yet? Listen in! We would be glad to have your company! Until next month,



- 73 de N2KZ The Old Goat dit dit.

Forty meters forever

Publication date for this month's *PCARA Update* is Sunday March 29, one week before the monthly meeting. This last Sunday of March, 2009 is significant for another reason — this is the date agreed at the World Radio Conference of 2003 (WRC-03) for international broadcasters in ITU Regions 1 and 3 to move out of the 40 meter band segment 7100 - 7200 kHz.

Under previous arrangements, radio amateurs outside ITU Region 2 (the Americas) were restricted to a limited 40 meter band from 7000 - 7100 kHz. Within this tiny sliver of a band, the overseas band plan recommended CW operation between 7000-7035 and phone from 7040-7100 kHz. Working 'across the pond' on phone demanded split frequency operation and the ability to listen between powerful broadcast carriers.



ITU regions.

Now, with a few exceptions outside Europe and Region 2, 7100-7200 kHz becomes a worldwide amateur exclusive allocation and our fellow hams in Regions 1 and 3 gain access to a much wider band. Many countries already have access to the new allocation, but the continued presence of super-strong AM broadcast stations made this a difficult place to exist. Now as the broadcast stations move above 7200 kHz, the newly-cleared 100 kHz segment should become a happy hunting ground for DXers and contesters. The segment from 7000 to 7125 kHz should be a good spot to work the world on CW, RTTY and data, while 7125 kHz to 7200 kHz should become a great place for working overseas amateurs on phone.

- NM9J

Wireless weather

Weather has been a part of amateur radio since the earliest times. That's one reason why old QSL cards always had a space for the current "WX" – on the assumption that signal strength was very much affected by the atmosphere.

I have had a couple of wireless weather stations in the past. An early one indicated the outside temperature but transmitted interference across the 440 MHz band while operating. I had more success with an Acu-Rite model 00605, which indicated outside temperature and humidity as well as displaying indoor barometric pressure and time from a built-in WWVB receiver. Even though it used 434 MHz for wireless operation, the newer unit did not cause any interference on the 440 MHz band.

Sadly, the Acu-Rite station began to misbehave. The indoor and outdoor relative humidity percentages were about half the actual values. The "Atomix Clock" which "automatically sets itself" and is described as "accurate to the split second" was nothing of the sort. Even though the clock still synchronizes with WWVB, it now drifts so badly during the day that the display can be three or four minutes slow. The Acu-Rite had to go!

I replaced it with a "Weather Channel" model 1611 "Professional Weather Center". This unit is marketed by La Crosse Technology, in La Crosse, Wisconsin, <http://www.lacrossetechnology.com>. The model 1611 is a cut above the simple wireless weather stations because it includes not only outdoor temperature and humidity, but also wind speed, wind direction and a rain gauge. Just like the Acu-Rite station, there is an indoor barometer, with a rough indication of forthcoming weather based on the rising or falling pressure. Time display is *not* based on reception of WWVB, but on a simple quartz clock.



External components of the WS-1611 "Weather Channel" Professional Weather Station from La Crosse Technology.

My previous weather stations were relatively simple to install, only requiring a small unit to be mounted outside for measurement of temperature and humidity and wireless transmission of the data. The new "Professional Weather Center" has a similar unit, but this has to be connected by one wire to a wind gauge and by a second wire to an electronic rain gauge. Location of these items is quite critical, as explained in the accompanying manual.

The temperature-plus-humidity sensor needs to be mounted outdoors, in a location not exposed to direct sunlight, and away from any region that would be heated by the sun — such as a driveway or open roof. It should also be kept dry. For my own location, I found the best place to mount these sensors is high up, inside the breezeway between house and garage.



The "thermo-hygro sensor" was mounted high in the breezeway, away from the sun.

When the breeze is blowing, a good sample of fresh air is always passing right by.

The wind sensor has a cup anemometer to measure wind speed and a wind vane to measure direction – rather like the old style weathervane with its metal cockerel. Mounting of the wind sensor is tricky – it needs to be up in the clear, with no nearby objects to deflect the wind.

My first thought was to use the 1½" mast that supports the TV and FM radio antennas. But sadly, the U-bolt supplied with the wind sensor's support tube will only fit around a mast diameter between 5/8" and 1¼". My second choice was the 1¼" mast that supports my Diamond X-200 dual-band antenna up on the roof.



Wind sensor was fastened to an existing 1¼" mast high on the roof.

The final piece of the puzzle was the rain sensor. This has to be mounted horizontally in a location that will be rained on equally from all directions. The sensor empties itself from time to time, so the bottom needs to have a clear path for water to run away. I chose to mount this modern rain gauge on the horizontal bar that helps support the TV mast.

The wind sensor and rain sensor are both provided with hard-wired 30 foot cables terminated in 4-pin RJ-



Rain sensor mounted on horizontal bar.

moisture, I gave all the metal contacts a good dose of Caig “ProGold” connector enhancer to guard against corrosion.

The thermo-hygro sensor is powered by two AA batteries. It has to be the first unit powered up, before three AA cells are inserted into the Weather Center display unit. I was pleased to see that reception of the outdoor unit was good inside the house. According to the manual, the Weather Center will first try for 14 seconds to receive the sensor on 915 MHz, then it will try 920 MHz for 14 seconds, and finally 920 MHz.

I found a little more information about the radio transmitter on the FCC web site. The FCC ID, OMOTX22U, leads to a set of documents including a test report in which the unit was assessed according to the FCC rules Part 15, subpart 15.249. Subpart 15.249 allows operation within the band 902-928 MHz with a field strength of up to 50 millivolts/meter, measured 3 meters from the unit. This corresponds to a power output into 50 ohms of just under 1 milliwatt. The spectrum plot shows output on three frequencies, 910.100 MHz, 914.910 MHz and (estimated) 919.720 MHz. A photo of the interior shows a circuit board with a couple of integrated circuits and a printed F-type antenna.

Details of the circuitry

11 connectors. These have to be connected to jacks on the thermo/hygro sensor. The rain sensor cable was straightforward to connect, but the wind sensor was further away, across the roof. I had to extend the cable with a four-wire phone extension cable. Since these connectors are outside the house and subject to temperature and



Interior of the TX22U thermo/hygro unit shows the circuit trace (top) for the F-type antenna.

and format of the digital transmissions were not included in the public FCC record. However, a little research with my Radio Shack PR-2035 scanner in wideband FM mode revealed the transmission pattern. Listening on a single frequency showed a short burst of RF every 14 seconds. But each pulse of the “Receive” indicator on the Weather Station takes place every 4.7 seconds. By retuning the scanner, I found this corresponds with a short transmission from the thermo/hygro sensor using one of three frequencies - 910 MHz, 915 and 920 MHz – one after the other in sequence. The Weather Station receiver must be keeping step with these transmissions by changing its own frequency from 910 to 915 to 920 MHz, then repeating the cycle. I’m assuming this pattern is designed to prevent the weather station from being blocked by interference on a single frequency, for example from a cordless phone or remote-read utility meter, or other equipment in the 902-928 MHz band.

In operation, the unit seems to indicate outside conditions quite accurately. Wind speed is shown in miles per hour (or km/h or m/s). A second indicator within the wind direction circle shows wind speed on the Beaufort scale – where “force 8” means gale-force winds. There is also an indication of wind chill temperature, calculated from the outside temperature and wind speed. Total rainfall is shown in inches (or mm) and can be reset if required.

One thing that does not seem very accurate is the “weather tendency indicator”, showing sunshine, rain or cloudy conditions ahead. This particular Weather Center does *not* indicate indoor temperature or humidity. Many less-expensive units include these items as standard. One final complaint – control buttons are all down the right-hand edge of the Station, right where you pick it up.

So—the new Professional Weather Center is doing its job. At the time of writing, outdoor temperature is 50° F, relative humidity is 45% and a gentle breeze is blowing at 0.6 mph from the north. Time for a walk in the spring weather!



“Weather Channel” 1611 Professional Weather Center in operation.

- NM9J

I Pod. Do You? – N2KZ

There was a time when life was so easy. You sang. People liked you. A&R agents would sign you. You would record. Radio stations played your work. Fame brought you wealth and the opportunity to continue performing. It was not easy to break through the system, but if you had talent and flair you could rise to the top.

This old world has disappeared. Record companies have consolidated into just a few mega-monopolies. Only huge stars are allowed to flourish. Others are not allowed. No wonder American Idol attracts so much attention! The world of American media promotes what they deem as superstar music and they try to make you listen to it ad infinitum. Does this brainwashing work? The current young generation simply doesn't buy it.

Dry rot usually occurs after years of abuse. Finding new artists is time consuming, expensive and requires effort. Lots of money can be spent chasing ghosts which negates profits. Radio and television do little to promote music or the desire to create it. Commercial content and DJ chatter kills all possible airing of radio tunes during most dayparts. Promoting your act using movies only works if you are part of the Disney machine. (It may bring horror to most but repetitious Radio Disney actually airs many acts not heard elsewhere!) It took decades to kill radio. The carcass is now only bones. Even satellite radio has now fallen to greed. Is there no place to go?

My true love, XM Satellite Radio, has lost its soul while being eaten alive. After the merger with Sirius, the deterioration was swift and rampant. The amount of obscene humor channels doubled. Some channels

seemed dedicated to discussions of genitalia. There was an onslaught of channels dedicated to single artists. (It became obvious that this was a scam to sell airtime to promote new albums or to bolster sales of standard

archive material.) All the Latino channels disappeared except one. The new emphasis was not quality but financial greed.

Most disconcerting was the loss of programmer expertise. All the experienced and knowledgeable people who loved their music and knew how to present it disappeared off XM rapidly after the Sirius takeover. The few channels that did not follow FM sounding pop or single artist formats were dumbed down and homogenized. In simplest terms, the 'good stuff' was gone. Regardless of when you tuned in, there was simply nothing to comfortably spend your time with. The commercial content became more and more inescapable. XM Satellite Radio died consumed by the same

mindset that killed FM before it. It was so good while it lasted. Why could it not continue?

For many years, I was a dedicated advocate of XM Satellite Radio. This was the medium that had brought a new non-commercial alternative to FM radio. Shows like 'Artist Confidential' and XM Public Radio made the service worthy of subscription dollars. Call me a music snob, but I simply won't listen to drones of stale pop music. This is now all XM has to offer.

Quick analysis will make obvious why radio music is so unlistenable. Back in the 1960s, rock radio stations would play music from the last few months with an oldie from a few years back tossed in now and then. The music was always fresh. We had no reason to hate it. Progressive FM radio appeared in the late 60s bringing forth a whole new concept in pop music. Disk jockeys were allowed to use their personalities and love of music to build audiences. It was a healthy time to listen.

Perversion of the musicradio art came later in the 70s with the domination of Top 40 radio. Very narrow playlists tried to draw in the most listeners possible who would always hear a hot hit when they tuned in. The repetition of songs and heavier commercial content and clutter removed the joy from listening. Some of the personalities remained but by the advent of 1980, it was done. Radio had lost its zeal to business greed.

Do the math: Most pop music stations rely on a music library of no more than about 5000 songs. You'll hear these songs over and over and over again. You have been listening to the same hits of the 1960s for 50 years! Even the hits of the 90s are ten years old! It is absolutely maddening! It is the same monotonous drive over and over again! Make it stop!

My frustration is amplified when I think of all the singers, songwriters and musicians who can not get airplay no matter how hard they try. Thank the Lord for new oasis like MySpace Music, Pandora, YouTube, Last.fm and Amie Street. This is where the latest generation of listeners find their tunes. What a shame that radio was not allowed to flourish.

New technology may be the ultimate savior. My knee-jerk response to the death of XM was the purchase of a Generation 4 Apple iPod. It is quite a sophisticated toy. This tiny, thin rectangle is capable of holding every CD I own (and then some) and also plays



iPod nano in side view mode, with Apple earbuds.

back remarkable video content all available at the touch of my finger. My only regret is that it does not have more than 16 GB of memory. Only a few days into this experience, my free space is dwindling rapidly!

Using an iPod is a lesson in do-it-yourself radio. You become your own music director and program producer. I find myself searching and searching for new artists and new Podcasts. There is a lot of trial and error. Being passionate about new music requires a lot of work. Luckily, for those who have true love of music, this is an enjoyable pursuit. Your best resources are links to other artists' web sites and word-of-mouth. You'll find well-developed communities of musicians all looking for attention and fame. This is more fun than any video game!

The results are immediate and satisfying. My tastes lean heavily toward Celtic culture and music. Using an iPod has instantly connected me with Cape Breton, Ireland and Scotland like never before. You can customize your delights unattainable anywhere else. The only thing missing is up-to-the-minute news and sport. Good old AM radio fulfills most of these needs.



iPods work with conventional headphones as well as earbuds.

Change requires adaptation. I'm trying hard. Yes, this is the world in the year 2009. If radio, in all forms, is obsolete you must move on. I don't mind going down the hill, but sometimes I feel as if I am traveling with the precariousness of someone on a luge sled! How foolish the broadcast industry has been in alienating all its clientele. Sorry, I just can't listen to endless snarky chatter and commercials. There is a beautiful new musical world out there. Have you heard this one?

Also, I congratulate all who have mastered the art of Apple's iTunes application. This iPod support program and database requires hours of patience, experimentation and adaptation. The most important information about iTunes never makes it into any 'help' site. Learning how to fine tune the database using 'Get Info' is an honored skill all its own. I'm very pleased with my progress but I have resigned myself to the realization that your quest for iTunes knowledge never ends!

So welcome to the future of media where the Web brings all you ever wanted to your fingertips. Eventually, the entire world will be wired for WiFi and you will discover Web access nearly everywhere. You won't even

need a CAT5 cable to connect. Wait a minute. Isn't *wireless* Internet really *radio*? It sure is.

- Karl, N2KZ

Recycling Events

Westchester County will be holding Household Recycling Days once again in 2009. In addition to the regularly accepted household waste items such as flammable liquids, pesticides and pool chemicals, all HRD events are also set up to collect e-waste, expired medications and plastic bags. The mobile shredder is also in attendance for shredding of personal papers on-the-spot.

Here is a listing of events in our neighborhood, in the next few months. The full schedule is available at: http://www.westchestergov.com/environment_householdrecyclingschedule.htm

Westchester
gov.com

Household Recycling Days

Fri Mar 27: 1:00- 3:00 p.m. and Sat Mar 28 9:00 a.m. - 3:00 p.m., George's Island Park, Dutch St., Montrose.

Fri Apr 3: 1:00 - 3:00 p.m and Sat Apr 4 9:00 a.m. - 3:00 p.m., Playland Park, Rye.

Fri May 8: 1:00 - 3:00 p.m. and **Sat May 9** 9:00 a.m. - 3:00 p.m., FDR State Park, Yorktown Heights.

Friday Jun 5: 1:00 - 3:00 p.m. and Sat Jun 6 9:00 am - 3:00 p.m., Westchester Community College, Valhalla.

E-Waste

Sun Apr 19: 9:00 a.m. - 3:00 p.m., Muriel Morabito Community Center, 39 Westbrook Drive, Cortlandt Manor

Sat Apr 25: 9:00 a.m. - 3:00 p.m, Town Hall, 15 Bedford Rd, North Castle.

Shredder

Sun Apr 26: 9:00 a.m. - 3:00 p.m. Muriel Morabito Community Center, 39 Westbrook Drive, Cortlandt Manor

Sun May 3: Noon - 3:00 p.m. Town House, 11 Main Styreet, South Salem.

Don't forget that the Town of Cortlandt also accepts e-waste such as used CFLs, small appliances like radios and TVs plus white goods. These items can be dropped off at the Sanitation Division, 167 Roa Hook Road on Thursdays from 1:00 - 3:00 p.m.

Roa Hook Road is just off the bottom of the "Goat Trail", not far from Annsville Circle.

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

(IRLP node: **4214**)

N2CBH: 448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sun April 5: PCARA meeting. Hudson Valley Hospital Center, 3:00 p.m. Bob N2CBH explains how to convert commercial VHF/UHF equipment.

Hamfests

Sat Apr 4: Splitrock ARA Hamfest, Roxbury Senior Center, 72 Eyland Ave, Succasunna, NJ. 8:00 a.m.

Sun Apr 26: Mt Beacon ARC Hamfest, Tymor Park, LaGrangeville, NY. 9:00 a.m. **(Club Table)**

Sat May 23: Bergen ARA Spring Hamfest, Westwood Regional High School, 701 Ridgewood Rd., Washington Twnshp, NJ. 8:00 a.m.

VE Test Sessions

Apr 5: Yonkers ARC, Yonkers PD, 1st Precinct, E Grassy Sprain Rd, 8:30 a.m. Contact D. Calabrese, (914) 667-0587.

Apr 9: WECA, Westchester Cnty Fire Trg Center, 4 Dana Rd., Valhalla, NY. 7:00 p.m. Contact Stanley Rothman (914) 831-3258.

Apr 20: Columbia Univ VE Team, 2960 Broadway, 115 Havemeyer Hall, New York NY. 6:30 p.m. Contact Alan Crosswell, (212) 854-3754.

Apr 24: Bergen ARA, Westwood Regional HS, 701 Ridgewood Rd, Washington Twnshp, NJ. 7:00 p.m. Contact Donald C Younger, (201) 265-6583.

Apr 25: PEARL, Mahopac Public Library, 668 Rt 6, Mahopac NY. 10:00 a.m. Contact NM9J.

Apr 26: Mt Beacon ARC, Tymor Park Hamfest, LaGrangeville, NY. 9:00 a.m. Contact A. Schmidt, (845) 462-7539.



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