



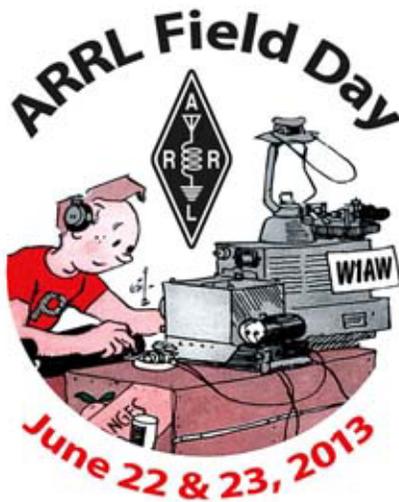
PCARA Update



Volume 14, Issue 7 Peekskill / Cortlandt Amateur Radio Association Inc. July 2013

Field Day feedback

PCARA Field Day 2013 is in the books. This year we scaled back our operation to class 1A which took our “keep it simple” philosophy to an even simpler level.



In addition to modifying our operations, we also moved our operating position to the South side of the baseball field at Walter Panas High School, which allowed us more room in setting up. We had an excellent turnout for setup and tear down, but

manpower became a bit thin in the overnight hours with Joe, WA2MCR holding down the fort as usual! **Thanks Joe!** The score came in at 2040 points which is most respectable considering we worked 1A. **Thank you** to all the members who turned out and helped to make this year’s Field Day such a success – we couldn’t have done it without you!



PCARA Field Day 2013 was located on the south side of the baseball field at Walter Panas High School. The 6 meter beam antenna is visible at right in this shot.

Now, just a bit of housekeeping. I know it is a bit early to discuss the 2013 PCARA Holiday Dinner, but this year the festivities will be held at the Cortlandt Colonial Restaurant in Cortlandt Manor on Sunday December 1st. Reservations have been made and we’re good to go. Make sure you mark your calendars and join us.

Remember that there are no meetings in July and August. Skipping over the Labor Day weekend, the next monthly meeting will be on **September 8**, 2013 at 3:00 pm at Hudson Valley Hospital Center in Cortlandt Manor, NY. I look forward to seeing each of you there. Until then, Enjoy the Summer!

- 73 de Greg, KB2CQE

PCARA Officers

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Greg Appleyard, KB2CQE, kb2cq at arrl.net

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Joe Calabrese, WA2MCR; wa2mcr at arrl.net

Contents

Field Day feedback - KB2CQE	1
Adventures in DXing - N2KZ	2
Field Day 2013	5
Telegram stops stop	7
Less power - NM9J	7
Lucky thirteen	9

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.

Adventures in DXing

- N2KZ

Towering Dreams for Field Day

Are you an investment banker who just happens to be a ham? Does a rich uncle own a world-class construction business? Maybe you just won the Power Ball lottery and want to blow off some steam? I think I have discovered the ultimate weapon for any deep-pocketed amateur. It is a portable tower, configurable to hundreds of feet tall and can be assembled and hoisted in just a few hours. Make sure you bring a thousand foot roll of coaxial cable! You'll need it!

Available for rental from Bay Crane of North Haven, Connecticut is the 500 ton Liebherr LTM1400. All I can say is: "What a monster!" Godzilla could really get his arms around this marvel! I work in a shoreline office plaza in Stamford. A few days ago, as part of a multi-million dollar building refurbishment, this behemoth arrived on site. A crew of a couple of dozen people drove several flat bed trucks each carrying another section of this massive towering crane. A smaller self-contained crane labored for several patient hours as a skilled team of workers assembled, positioned and secured each enormous section into place. Finally, the huge crane was ready for use.



Giant crane was assembled on the ground near Karl's place of work.

With the morning dawn, more flat bed trucks arrived, this time with the main superstructures and all the accessory equipment needed to fit a nearby office building with a brand new HVAC system. The show began at about 7 am and continued for about six hours. First, the monster crane was slowly hoisted up as the operator manipulated the powerful hydraulic center core that stood under the lattice structure. Talk about big and tall! When fully up in the air, I had to tilt my camera just to get every inch of the crane into the shot!

The truck arrivals that followed were in perfect sequence. Each large metal assembly led to another. A massive water cooling tower was the first to be hoisted up onto the building's roof in two pieces. Up they went secured by multiple tethers attached to a large red steel weight ball on the end of the guy wires. Two massive air handlers flew up shortly thereafter. Another crew was waiting on the roof to guide and position everything into precise landing spots. Tons of metal were delivered skillfully to the roof until all the items were in place.



Giant crane in action. Only one third of the boom is visible in this cropped shot by N2KZ.

Just after noon time, the hoisting was completed. The master crane's lattice work was slowly lowered back down to street level. The crew now reversed the process by using the smaller crane to disassemble the master crane and place each section back on a waiting flatbed truck. By dusk, almost all of the equipment had been taken apart, stowed and removed from the site. Back to North Haven it went! I couldn't help wondering how a Yagi stack would look mounted on a 500 ton crane hoisted hundreds of feet in the air. Do you think we could convince Walter Panas High School to allow this rig in their parking lot? Dare to dream!

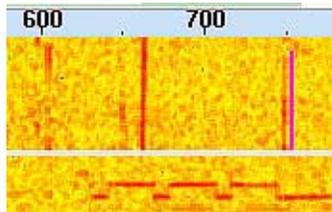
Hifer!

When was the last time you DXed 22 meters? Don't second guess this question! 22 meters is *not* an amateur radio band. It is technically an ISM band (standing for Industrial, Scientific and Medical.) A tiny slice of the EMF pie, the 22 meter band (13.553 to 13.567 MHz) is set aside for use by Part 15 devices of your choosing. For example, you might find RFID radio tracking devices using this spectrum. You also might find some of the most satisfying DX challenges you could ever imagine!

22 meters is one of several bands regulated by FCC Part 15 (which is a catch-all for all sorts of incidental RF devices and even mini-broadcasters.) This is where you will find the HiFers – unlicensed experi-

menters on HF. Many clever hobbyists and hams have recognized the potential of this allocation and have culled it into the headquarters of QRPpp. (very, very low power DXing.) Read carefully the language of Part 15.225 (a): *The field strength of any emissions within the band 13.553 – 13.567 MHz shall not exceed 15,848 microvolts per meter at 30 meters.* In translation, if you are using a typical half wave dipole, the power you apply to your antenna can be no more than 1.8 milliwatts. You would need more than 500 times this power to equal just one watt!

At first glance, the band seems pointless and impractical. What can you possibly achieve with 1.8 milliwatts? Those who have been there can assure you of the answer: *Plenty!* To get you started, take a look at a list of beacon stations operating on 22 meters provided by The Longwave Club of America: <http://www.lwca.org/sitepage/part15/index.htm>. Many of the 22 meter beacons use a protocol known as QRSS3



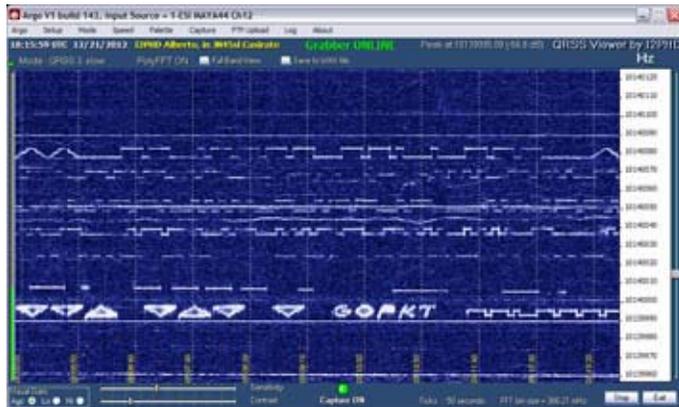
Screen shot from MultiPSK

(slow speed code at 3 wpm) easily decoded by the miracle freeware program MultiPSK and others. Sit your receiver on 13.555 MHz and patiently wait. Tiny signals can travel hundreds or thousands of miles. What is that I

hear? Something just might decode!

Another interesting way to monitor weak digital signals was developed by two Italian hams, Alberto, I2PHD and Vittorio, IK2CZL. Their program, Argo, provides a simple and visual method of monitoring very slow speed CW. This is the perfect solution to resolve CW that is so slow that you can't really copy it in your head. It is incredibly sensitive and can really pull intelligence out of the noise. You can find it for free at: <http://www.sdradio.eu/weaksignals/argo/index.html>.

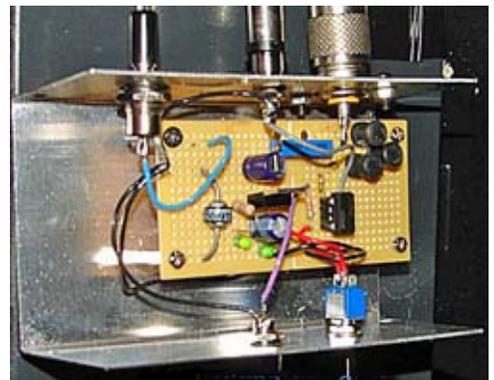
Stations on 22 meters do not use FCC issued call signs. The band is designed for *unlicensed* opera-



Screen shot of Argo software.

tion, so participants use two or three letter calls that usually refer to their names or locales. Often, hams use the last two or three letters of their callsign. To see an example of HiFer beacon GNK, take a look at the fascinating web site of Dominic, KC9GNK: <http://kc9gnkbeacon.webs.com/gnkmedferbeacon.htm>.

Many other hams and experimenters have launched beacons in this range. The results can be astounding! At times, full two-way QSO skeds have been completed successfully with sub-flea powered stations on 22 meters. A 22 meter QRPpp QSO was completed during Field Day 2013! Clever homebrew designers have recognized that 22 meters can be reached by halving certain



HiFer beacon transmitter by KC9GNK.

11 meter CB frequencies. Take a channel 13 crystal at 27.115 MHz and divide by two: Voila! 13.5575 MHz right in the middle of 22 meters! For those who like kits, visit the fascinating web site of Hans, GOUPL: <http://www.hanssummers.com/qrsskitmm.html>. Here you can find a beginner's kit for just a handful of dollars that could make you a beacon operator in no time!



Homebrew HiFer transmitter for 22 meters.

Just think what 20 meters might be like if it were clear of all the 'big boys,' interference and traffic. Paul, WORW in Colorado Springs, Colorado copied and QSLed 69BY/B on 13.555 MHz CW – a beacon of the Bravo Yankee Club in Costa Rica. Chris, KD4PBJ in Tracy City, Tennessee is about to relaunch his 22 meter beacon.

Kurt, KD7JYK in Dayton, Nevada commented that one of the biggest challenges is finding the proper attenuators to bring your output power down to flea level. "Typically, we use our ham rigs to receive and use homebrew rigs for sending."

Paul, K5WMS in Jacksonville, Arkansas gives us fair warning: "This weak stuff is addictive! I was successful in receiving about 15 states back in 2001 to 2004 on 22 meters." Paul suggests the amazing web site of Lyle, K0LR at: <http://lowfer.us/k0lr/proto/LFproto.htm#HiFER>. Here you will find all sorts of plans and information regarding building HiFer transmitters and operating.

If *challenge* is your middle name and you love QRP, 22 meters could be your next way to say 'fun!' This may be the closest you'll ever get to pulling in a microwatt station. Give it a try! How low in power can you go?

Rebuilding WNYC AM 820

For those of you who might be curious... New York City's WNYC AM 820 continues to repair in the aftermath of Hurricane Sandy. As you probably know, they share their transmission facility in Kearny, New Jersey with WMCA 570. A lot has been going on.



Watery transmitter site by the Hackensack River for WNYC-AM and WMCA is visible from the northbound New Jersey Turnpike (I-95) and from NJ State Route 7.

On October 29, 2012, Hurricane Sandy produced profound damage to the Kearny site. The transmitter hut was consumed by flooding from the Hackensack River and the cat walk to the towers was ruined. Transmitter manufacturer Nautel sent technical support to quickly install model J1000 emergency transmitters for both stations. WNYC was back on the air by Friday, November 2.

On November 8th, the FCC granted a Special Temporary Authority allowing WNYC to operate with one quarter of their usual power (10 kW days, 1 kW nights), with a non-directional pattern, using only the center tower of their three tower array (Tower 2.) On November 28th, WNYC took receipt of a Nautel XR3

transmitter allowing them to increase their power from 1000 watts (produced by the J1000 transmitter)



The catwalk to the towers was flooded.

to 2500 watts during the day and 250 watts at night. In January, WNYC ordered two new Nautel XR12 transmitters, rated at 10 kilowatts, to permanently

replace the two original Nautel ND 10 transmitters destroyed in the storm. The remains of the water damaged



WMCA's Nautel transmitter was flooded in 2 feet of water.

ND10s will be sold for parts.

On April 26th, WNYC filed with the FCC for an extension of their Special Temporary Authority to remain broadcasting as the rebuild continues. The document reported: "A 1500 foot catwalk structure is about 90% complete. New transmitters have been purchased and delivered to a staging area. Substantial design work is taking place to improve the site and provide protection against future Sandy-level storms, including raising antenna tuning unit structures six feet and installing a new raised floor in the transmitter building."

It has been eight months since WNYC 820 AM was operating at full power. I miss its presence on my radio! I thank WNYC for expending the effort and finances needed to rebuild AM 820. I look forward to the complete restoration.

Enjoy the summer and spend some vacation time on the air! 73s and dit dit de N2KZ 'The Old Goat.'



Field Day 2013

Preparations for Field Day were well under way at the June PCARA meeting, with the usual arrangements for two HF stations plus the 'free' VHF station allowed by Class 2A. The location would be the same as in previous years at Walter Panas High School in Cortlandt Manor.

But... "The best laid schemes of mice and men — Go often awry." This time around your editor and Karl, N2KZ were unable to take part in Field Day, so last minute changes had to be made. Joe WA2MCR and Greg KB2CQE decided to reduce the number of HF stations from two to one, while maintaining the 'free' VHF station that is still allowed by Class 1A. That would allow a smaller number of tents, tables, antennas and radios to suit the reduced circumstances. Joe obtained the necessary permit from the School District, then Joe and Greg reconnoitered the site and decided to move stations from the northeast corner of the baseball outfield to the corner nearest home plate.

On Saturday morning, June 22, Bob N2CBH arrived at Joe's location to pick up the Field Day equipment. This was soon loaded onto Bob's truck, along with essential items from NM9J. The contrast with previous years was clear, when far more gear had to be loaded onto the vehicles to support two HF stations.



Joe WA2MCR and Bob N2CBH, all loaded up and ready for Field Day.

Nathan, AB2ZU was already waiting at the Field Day site to assist with setup. He was joined by more members as the stations were assembled. In previous years, a G5RV antenna had been strung between the two light poles on the eastern side of the ball field, which are roughly 150 feet apart. With the new location, the 102 foot long G5RV antenna was supported by the two light poles nearest home plate, which were only just far enough apart. The antenna for six meters was a 3-element Yagi on a guyed mast,



PCARA's Field Day stations were in a new location by the ballfield at Walter Panas High School.

fastened to the wire fence near the school buildings. As in past years, an attempt was made to feed one of the light poles as a vertical antenna, but it seemed to be causing interference to the nearby 6 meter station.



All the stations were under a single tent.

The HF and VHF stations were assembled on a single table, under a push-up tent, erected next to the ballfield's wire-mesh fence. Compared to past years, the transmitting equipment had to be rearranged, with Joe's Icom IC-7000 moving to the VHF station and Bob's Kenwood TS-50 mobile transceiver being used for the first time on the HF bands. Listening from off-site, your editor thought the TS-50 sounded very good on SSB. Power for the radio transmitting equipment was supplied by Bob's super-quiet Honda generator, while the other non-radio items were on commercial power, conveniently available at this corner of the ballfield.

There were plenty of visitors to the station on Saturday afternoon — including your editor. The weather was fine and sunny, so a canopy had been

arranged for visitors to sit under. In order for the two stations to operate successfully side-by-side, the operators had to wear headsets.



Dan NT2I and Lovji N2CKD on HF at left with the VHF station at right, manned by Nathan AB2ZU and Joe WA2MCR. [W2CH Photo]

The computer logging software was once more from N3FJP (<http://www.n3fjp.com>), but this year the newly rewritten version, "ARRL Field Day Contest Log 4.0" was loaded onto computers supplied by KB2CQE and NM9J. In order to keep things simple, the computers were operating independently, without a network connection, so the HF and VHF results would have to be combined after Field Day was over.

As dusk approached, the visitors thinned out. Bob was operating during the evening period, with Joe and Greg staying on-site throughout the night. Bob reports successful use of the vertical light pole antenna for contacts on 75 and 40 meters during that evening.

Next day, operations continued, with Ray W2CH



Ray W2CH and Marylyn KC2NKU operating 6 meters.

and Marylyn KC2NKU returning to keep the 6 meter station on the air. Ray reported good conditions on Sunday, with 89 contacts total, including DX contacts to MS, TN, GA, LA, FL and TX. Ray kept operating on 6 meters right up to the 2:00 pm deadline while the HF station was disassembled around him. Teardown went relatively quickly, with people leaving the site by 2:15 pm.

Analysis of the Field Day logs shows the majority of contacts being made on 20, 40, 80 and 6 meters. 10 meters and 15 meters were much less active, which is odd as we are approaching solar maximum. Bonus points were scored for 100% emergency power, set-up in public place, information booth, W1AW Field Day message, youth participation and web submission.



Bonus points for Youth Participation. Elliot KC2ZAB and Evan are pictured, supervised by Dan NT2I.

Here is a summary of PCARA's results from previous Field Days in Class 2A, followed by this year's claimed score in Class 1A.

Peekskill/Cortlandt ARA, W2NYW, Class 2A

	2002	2003	2004	2005	2007	2008	2009	2011	2012
QSOs:	718	733	968	853	1019	1109	694	879	968
Power	2 (<150W)								
Partcpts:	15	11	12	10	14	10	10	14	15
Tot score:	2,096	2,328	2,996	2,798	2,906	3,460	2,746	2,602	2920

Peekskill/Cortlandt ARA, W2NYW, Class 1A

	2013
QSOs	775
Power	2 (<150W)
Partcpts	14
Tot score:	2,040

This is a good score for Class 1A. Last year, it would have placed us 48th out of the 135 Class 1A stations who entered.

If you are comparing this year's result with our previous years' results, keep in mind that we only had *one* HF station on the air this time, instead of two. Worth noting is the reduction in the number of CW contacts, from 137 in 2012 to only 7 in 2013. CW and digital contacts count for double points compared to phone, so they are well worthwhile pursuing.

Thanks to everyone who helped to make this year's PCARA Field Day a success, with a special thank you to those members who adapted to the changed circumstances and were able to put on a capable Field Day operation with available resources. Thanks also to WA2MCR, W2CH and N2CBH for their notes, on which this report is largely based.

- NM9J

Telegram stops stop

Lovji, N2CKD points out that a symbol of modern communication is coming to an end in India. On July 15, 2013 India's state-owned telecommunications company BSNL (Bharat Sanchar Nigam Limited) will close down its telegram service. The origins of the service date back to the year 1850 when Irish surgeon William Brooke O'Shaughnessy received permission to string telegraph lines along a 27-mile stretch around Calcutta. O'Shaughnessy was subsequently appointed Superintendent of Telegraphs in 1853, and by 1855 he had installed 3,500 miles of telegraph lines across India. It only took a few more years for telegraph lines to stretch around the world.

For the next 100 years or so, delivery of a telegram to a home address was an indicator of urgent news — births and deaths, successes and failures. In commerce and journalism, telegrams were the mainstay of speedy long-distance communication. Since the monetary charge for a message was based on the number of words it contained, a special language of "telegraphese" was developed to keep the word count low. Unnecessary words and punctuation were minimized, with the word "STOP" spelled out to indicate the end of a sentence. Perhaps there isn't so much difference from our own amateur radio CW abbreviations and the LOLs, BRBs and IMHOs used in today's text messages.

In their heyday, traditional telegrams were sent over telegraph lines using Morse or similar codes. Telegram companies and national Posts and Telegraph agencies maintained a corps of skilled operators who



would make sure the message got through. In a June 24 news item, ARRL explained that it is BSNL's *telegram* service which is being terminated and not any *telegraph* service. The Indian service has not used Morse telegraphy for some time and currently transmits telegrams between their offices by e-mail.

In recent years, the need for telegrams has diminished as mobile phones, e-mail and wireless messaging have penetrated most of the world. In the USA, Western Union discontinued telegram service in January 2006. And now in India — BSNL's last telegram will be delivered in mid-July.

Less power

In the March 2008 *PCARA Update*, an article on "A sustainable shack" described how to make our amateur radio activities more sustainable and reported electrical power measurements in my own radio shack.

Five years later, I decided to repeat the exercise, this time extending measurement to the whole house. Technology has moved ahead in the intervening time, and I was hoping to see some improvement in the overall picture.

Always on

One of the things that irks me when out in the yard is seeing ConEdison's electricity meter still indicating power usage. This is despite everything in the house being supposedly turned off. A moment's thought will reveal all sorts of devices that are still connected to the electricity supply, from the cell phone wall-wart charger and answering machine at the low end, to the refrigerator at the high end.

I measured the current and power consumption of these devices using the "Kill A Watt" from P3 International. See: <http://www.p3international.com/products/p4400.html>. The "Kill A Watt" is a very useful device which is placed in series with the 120



Electricity meter outside the home indicates a steady current draw with nothing switched on.

volt power cord to the appliance being tested. The display indicates the AC line voltage, current draw in amps, power consumed in watts and power factor, indicated in VA. The cumulative power usage is also indicated as kilowatt-hours for the period of hours since the “Kill A Watt” was powered up.

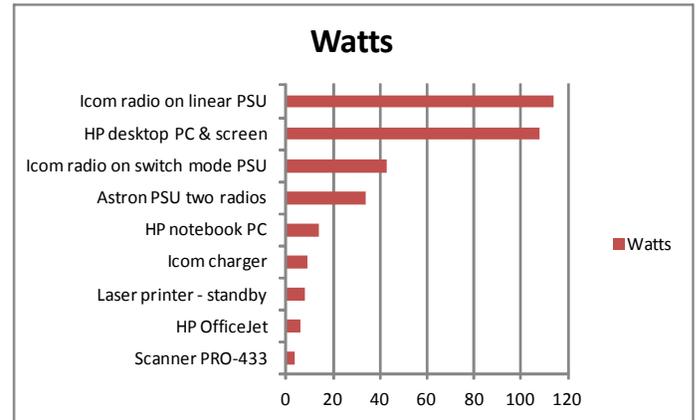
The bar graph below shows the results of the first round of measurements with the “Kill A Watt” for household equipment which is always connected to the 120 volt supply.



“Kill A Watt” indicates AC line voltage. For connected equipment, it can also show the current in amps, power in watts and power factor (VA).

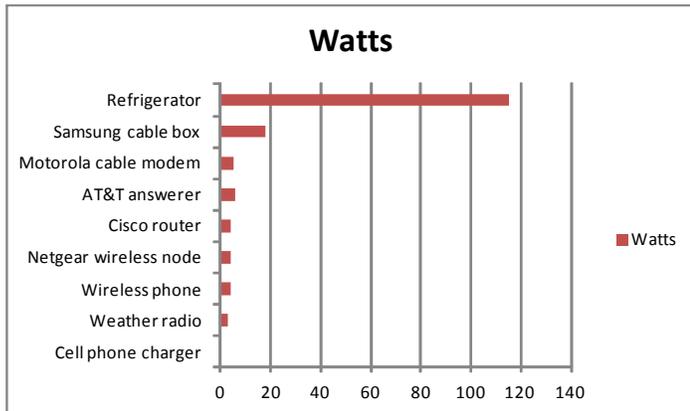
Radio room

I carried out another series of readings on equipment in the radio room. The heaviest power draw was from an Icom HF radio plugged into an Astron linear power supply. My Alinco switched-mode power supply is significantly more efficient, consuming 2½ times fewer watts while the transceiver was in receive mode. Another heavy draw was from my desktop computer, with its LCD screen.

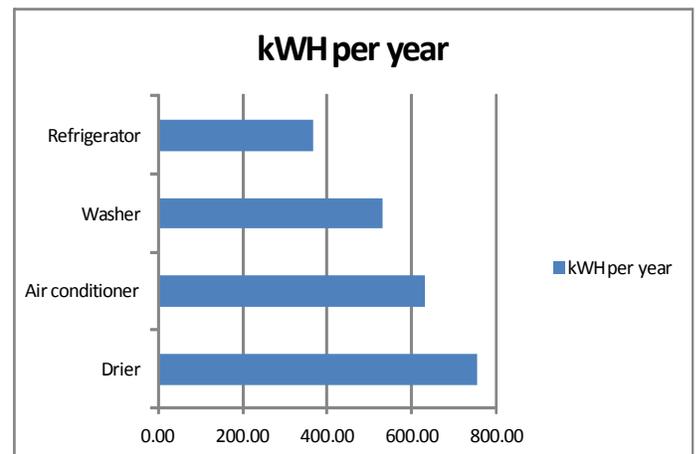


Peak power

Radio room and entertainment devices are unlikely to be the main items contributing to the electricity bill in a modern home. I was unable to use the “Kill A Watt” to measure consumption of my heavy duty appliances such as the clothes drier and air conditioner since they are either permanently wired or run off 240 volts AC. But there are indications of the power draw on Internet sites such as <http://michaelbluejay.com/electricity/howmuch.html>. Based on figures from this site and my own estimates of how much the heavy duty devices are used, I came up with the following result for the four heaviest energy consuming devices. These four devices are responsible for 53% of my annual electrical power bill.



For devices that are “always on” the refrigerator has the highest power drain while its compressor is running. At this time of year, my fridge only runs for about one third of the time, but it is still the leading power consumer in this category, costing around \$65 per year. The cable box is in second place, costing around \$28 per year. The other items are relatively minor, costing a few dollars each per year. The cell phone charger draws a very low current when not actually charging.



The Internet site previously mentioned includes hints for measuring your own electricity consumption and good suggestions for reducing power consumption by the large appliances. As far as smaller devices are concerned, I would repeat previous advice to plug multiple items into a surge-protected power strip, then switch the entire power strip off when the equipment is not being used.

At this time of year, remember that almost every watt of power that you can switch off within the home is one less watt of heating for the air conditioner to remove.

- NM9J

Lucky thirteen

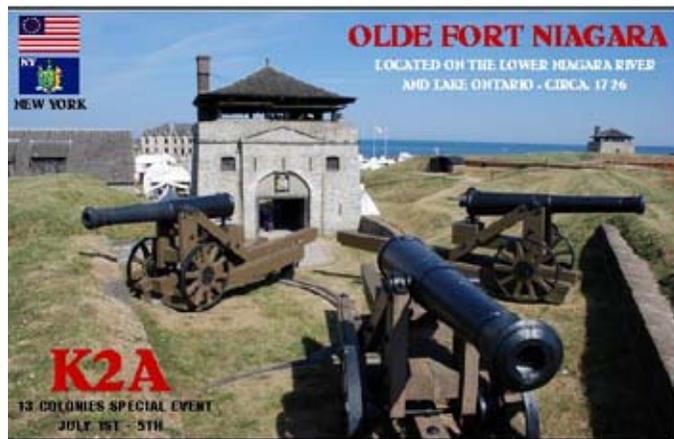
The fifth annual “13 Colonies” Special Event takes place during Independence Week, Monday July 1 to Saturday July 6, 2013. Before independence, the original 13 Colonies set up by the British on the eastern seaboard of America were — Delaware, Pennsylvania, New Jersey, Georgia, Connecticut, Massachusetts Bay, Maryland, South Carolina, New Hampshire, Virginia, New York, North Carolina, Rhode Island and Providence Plantations.

The “13 Colonies” that declared independence in 1776 are represented in the Special Event by the modern states of: CT, DE, GA, MA, MD, NC, NH, NJ, NY, PA, RI, SC, VA. Each state will have at least two Special Event stations active. In New York, there could be up to four stations signing **K2A/NY**, located at Conesus, Scarsdale, Ogdensburg and Yorktown Heights. The other states take calls K2B (Virginia) etc. through K2M (Pennsylvania).

Radio amateurs who contact at least one of the Special Event stations will be entitled to a certificate. If you work a station in each of the “Original 13”

states, the certificate will be endorsed for a “Clean Sweep”.

In 2011, Ken W1YJ was able to contact all 13 colony stations K2A through K2M (Clean Sweep) and he received a special endorsement on the certificate for contacting station WM3PEN. This station, named after William Penn, was also celebrating the 4th of July week Special Event, representing Independence Hall in Philadelphia, PA.



QSL card for the 2012 K2A operation.

“13 Colonies” operation this year will be from 09:00 a.m. EDT (1300Z) on July 1st to 12:00 midnight EDT on July 6 (0400Z, July 7). Full details are available at: <http://www.13colonies.info/>.



Sample of the “13 Colonies” certificate for 2013.

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 Sept 8: PCARA monthly meeting, Hudson Valley Hospital Center. 3:00 p.m.

Hamfests

Sun Jul 14: Sussex County ARC Hamfest, Sussex County Fairgrounds, 37 Plains Rd, Augusta, NJ. 8:00 am.

Sat Aug 3: Boy Scout Troop 139 / Venture Crew 7373 Hamfest, Conlon Hall, 19 N. William St., Bergenfield, NJ.

Sun Aug 11: Tri State ARA Hamfest, Matamoras Airport Park, 7th Street, Matamoras, PA. 8:00 am.

Sat Aug 24: Mt Ramapo ARC Hamfest, Camp Veritans 225 Pompton Road, Haledon, NJ. 8:00 am.

Sun Sept 8: Candlewood ARA Western CT Hamfest, Edmond Town Hall, 45 Main St., Newtown, CT. 8:30 am.

VE Test Sessions

Jul 6: Yonkers PAL Ham Radio Club, 127 N Broadway, Yonkers NY. 2:00 pm. Contact: M Rapp, 914 907 -6482.

Jul 7: Yonkers ARC, Yonkers PD, Grassy Sprain Rd., Yonkers. 8:30 am Contact D Calabrese, 914 667-0587.

Jul 11: WECA, Westchester Co Fire Trg Cen, 4 Dana Rd., Valhalla, NY. 7:00 pm. S. Rothman, 914 831-3258.

Jul 15: 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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