



PCARA Update



Volume 9, Issue 3

Peekskill / Cortlandt Amateur Radio Association Inc.

March 2008

Speaking loudly



"City of the big shoulders."

Be sure you make it to the March 2nd meeting because Bob, N2CBH will be giving a presentation on his adventures in broadcast engineering in the Midwest, Chicago to be exact.

Mark your calendars for April 13th and April 26th. PCARA has taken tables for the Mt. Beacon and Orange County Hamfests on those days respectively. Bring along any gear that you're interested in selling and put it on the club table. If you manage to sell some of your stuff, all we ask is that you consider donating a couple of dollars to help offset the cost of the table.

I've been busy for the last couple of weeks with some loudspeaker rebuilding. I'm trying to restore a couple of Pioneer Project 80 2-way speakers that I inherited from a friend. Like many of the speakers from their era ('80s), the woofers had fallen victim to the dreaded surround foam rot. The cabinets/enclosures were in good shape and I thought it would be a waste to just trash them. I started to search the web for replacement drivers. While I was at it, I figured that maybe I should replace the tweeters also. I came across a web site for Parts Express (www.partsexpress.com) that had everything you would need to build, rebuild, repair and design your own speakers.

After a crash



One of the Pioneer loudspeakers that Greg, KB2CQE is currently rebuilding.

refresher course in speaker performance and specifications, I made my choice of drivers. I chose Pioneer 8" butyl surround woofers (part #290-042) and Tang Band 1-1/8" shielded neodymium dome tweeters (part #264-822). I chose these drivers based on cabinet cutouts, existing crossover network (1,500 Hz), power handling (watts RMS), SPL (sound pressure level — dB at 1W/1m), and driver ranges. I'll have an update in next month's *PCARA Update* on how things went together and how the speakers sound.

Our next meeting is March 2, 2008 at 3:00 P.M. at Hudson Valley Hospital Center. As always **all** are welcome! I look forward to seeing each of you there.

- 73 de Greg, KB2CQE

Net night

Peekskill/Cortlandt Amateur Radio Association holds a weekly net on the 146.67 MHz W2NYW repeater. Net control Karl, N2KZ conducts the net on Thursday evenings at 8:00 p.m.

PCARA Officers

President:

Greg Appleyard, KB2CQE, [kb2cq at arrl.net](mailto:kb2cq@arrl.net)

Vice President:

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Adventures in DXing

- N2KZ

Finding CMK

You just never know where conversation may lead you! One morning, I was talking to a fellow ham, co-worker and pilot Glenn N1XD. Both of us enjoy listening to all that reaches our scanners. We discussed old low-power TV channel 22 in Danbury, 46 and 49 megahertz phone and baby monitor intercepts, wireless Internet connections and aircraft frequencies. Glenn has experience as a pilot and lives close to nearby Danbury Airport and he really knew his beacons!

We were comparing notes regarding various navigational beacons we could hear on long wave and VHF. The strongest and most dominant signal at my QTH is a beacon on 116.6 MHz called CMK and listed as Carmel. I had never searched where the exact coordinates were geographically. I presumed the beacon was somewhere in or around Carmel. Glenn set me straight! "CMK is right off Route 35 southwest of Danbury. It's not in Carmel!" Hey, that's right in my backyard!

Research began immediately. I went to the authoritative site for aircraft navigation information: AirNav at www.airnav.com. I scribbled down the coordinates of CMK in decimal format. I quickly discovered that using geographic co-ordinates in degrees, minutes and seconds was not accurate enough for a precise bearing. Armed with this information, I then visited Mapquest's lat-long map generator <http://www.mapquest.com/maps/latlong.adp>. I quickly found the location and also viewed their accompanying satellite imagery. Where did CMK live?



Aerial view of navigational aid CMK.

journeyed in the N2KZ-mobile looking for CMK in person. Unfortunately, I got very close to the installa-

I quickly found the location of CMK (at least on the Internet 2D screen.) It is, indeed, just north of Route 35 in a hamlet called Waccabuc known primarily for its mansions and country club. The next day I

tion but never saw it directly. The FAA did an extraordinary job of concealing the installation from prying eyes (like my own.)

CMK is located on a flat high bluff at the end of a road that turns private midway along its path. Ride to the end of the road and you will see a weather-worn warning sign attached to a swinging open gate. The essence of the message was "Don't go there!" so I didn't. Pass the gate and the road climbs up to the bluff where CMK resides. Satellite imagery shows that it is set in the middle of a mowed meadow and it is secured by fencing arranged in a square around it.

I rode around the neighborhood trying to find a place where I could simply see the slightest glimpse of the site. It was not to be. Later, I researched a similar installation in nearby Pawling, PWL, on 114.3 MHz. This confirmed the FAA's effective technique of hiding these beacons deep in the woods and away from public access. PWL might be even more removed from the beaten trail than CMK!

Both CMK and PWL are beacons known as VOR/DMEs. VOR stands for **V**HF **O**mnidirectional **R**ange. This is a dual-function transmitter that produces an AM signal broadcasting a slow Morse identifier C - M - K along with a computer-synthesized voice announcing the latest updates for approach and runway conditions. The second half of the VOR system consists of a circular multi-antenna array, using two signals phasing against each other, producing precise bearings for passing aircraft. The beam of these signals is, by design, up into the air. A large, circular above-ground ground plane grid serves as the basis of bending signals up towards the skies. I was amazed how little of CMK's signal was received on the ground riding around in my car with an aviation scanner on my front seat. The signal drops off dramatically moving just a mile or two from the beacon, yet it can be registered far and wide by passing aircraft.



VOR/DME characterized by a circular array of VHF antennas above a ground plane, plus a white, cylindrical radome housing the distance measuring antenna for 960-1215 MHz.

The other half of the installation is called a DME (Distance Measuring Equipment.) You'll recognize it by the white pillar antenna in the middle of the VOR array. The essence of the system is a hand shake of signals received from DME transmitting aircraft with signals that are generated at the beacon site. Distance is calculated from the delay between the two signals. It is very similar to using the delay time of aural echoes in a canyon to determine how far away you are from the reflecting wall. DMEs operate on multiple channels around one gigahertz.



This VOR/DME at Pole Hill in northwest England was photographed in July 1984. [Picture: G3VNQ]

At this point, I feel like a frustrated birdwatcher! I can hear CMK, I know where it is, but I can't see it. It is highly unlikely that the FAA gives tours of these facilities. I'll certainly look for it the next time I fly in or out of White Plains Westchester Airport (HPN.) Never fear, CMK's hits keep on coming. Just listen for the lazy dah-dit-dah-dit, dah dah, dah dit dah, at 116.6 MHz on a scanner near you!

Smart Remote

It is time to end the madness! Most remote controls have 36, 48, even 60 buttons to make everything work. You'll need to control 7 different inputs to your set, all the picture settings, reach deeper menus, put pictures in pictures, run the DVD player, run the VCR, surf your favorites, find individual channels with the numeric keypad, look at the program information and flash back to another show.

Add to this adventure your dislike of all things technical. Who needs computers anyway! Maybe time is catching up with you. You can't see all the tiny little buttons, much less figure out what they all do! Have you ever pressed a remote button and turned off a feature completely disabling the set? Mute buttons come to mind, but many others can produce similar results. How embarrassing to have to call one of your kids or a neighbor to bring your TV back to life!

Some newfangled remotes are almost insulting.

Found in Wal-Marts, K-Marts, Targets, drug stores and food stores are enormous remote controls with equally enormous buttons. I'll bet you can operate these with your big toe! Other remotes glow in the dark or allow you to program keys as you like. All of them still have mesmerizing amounts of options and controls.

Wouldn't it be great if a remote control just had six buttons: on/off, mute, channel up, channel down, volume up and volume down? With a remote like this, it would be hard to get confused! What a gift for those who seek simplicity! It also may serve as a blessing for those who are called upon as technical consultants to cure hopelessly confused electronic contraptions. No more cell calls with pleas to cure the savage TV beast!

A remote like this actually exists! Look for Magnavox model MRU4101/17. It was previously marketed by Zenith as model SK64-002. Be very specific when you order these remotes and ask questions to ascertain their identity before you buy! I have seen several sites post different incorrect pictures along with the correct Magnavox model number. Some model numbers are incredibly similar. The picture here may serve as a valuable reference!



Minimalist remote controls by Magnavox and Zenith.

These simple mini-remotes have some drawbacks. *They will control TVs only. No VCRs.*

No DVD players. No DirecTV or

cable boxes. No Tivos. For a simple programmable remote, with added device capability, take a look at the Weemote at www.weemote.com. Still, you'll probably find these little remotes to be the most wonderful thing you can hold in the palm of your hand.

The mini-remote will work with nearly any television, but a specific four digit code number must be entered into the mini-remote to match your particular TV set. (See the chart included with each remote to find the code for your TV.) Here's how you enter your code into the remote: Hold down the power and mute buttons until the little red LED stays on. Use CH- for the first digit, V- for the second, CH+ for the third and V+ for the fourth. Zeros don't need to be entered. Press the Mute button when you are done. Example: For some Sony TVs the code is 0708. Press the V- button seven times and the V+ button eight times and then press Mute. Too confusing? There is a code search method

that is time consuming but will find your correct code without entering numbers. Be patient as you search and soon you'll be all set!

Look for the Magnavox MRU4101/17 on Amazon.com and Dynamic-Living.com. I hope you'll find these remotes as much of a blessing as I do. Happy channel surfing and pass the Tostitos!

The Boxes Are Coming!

The Worldwide TV-FM DX Association's Internet reflector has been abuzz about inexpensive ATSC DTV converter boxes finally coming to market. On February 17, 2009, America's television broadcasters will pull the plug on analog broadcasting. The only remaining over-the-air signals will be digital, so you'll have to have a converter if you want to continue watching TV with an antenna. These little digital to analog converter boxes are now showing up in electronics retailers locally and will market at about \$60. To offset the cost of these converters, the federal government is offering \$40 voucher coupons (up to two per family.) To apply for these coupons call 1-800-388-2009 and answer the questions as you are prompted. The coupons should begin to be mailed to consumers any day now!

Many TV DXers have been purchasing and reviewing various converter boxes during the past few weeks. The leader of the pack seems to be the LG designed Zenith model DTT900. It converts digital TV signals to TV channel 3 in analog format or to RCA connectors to feed VCRs or televisions directly. The only flaw found in the Zenith converter may not be an issue for long. When the unit is turned off, the antenna input does not pass through to your TV. This makes analog reception impossible (unless you rig up an A/B switch or other remedy.) Most new converter boxes feature the latest Generation 6 chip sets which are much more sensitive and selective than the designs we have purchased earlier. For more information on the Zenith DTT900, take a look at: <http://www.zenith.com/dtv/dtt900.html>.



Zenith DTT900 digital TV converter.

Don't Forget: Thursday Net!

The PCARA Old Goat's Net invites you to join us every Thursday at 8 p.m. on the two meter PCARA repeater (146.67 MHz, -600 offset, 156.7 PL.) All licensed amateurs are invited to join in. We welcome all the shortwave listeners to our network, as well. Listen on your scanners and tell you friends!

Until next month, enjoy the snow and dit dit de N2KZ "The Old Goat."



A sustainable shack

As businesses and individuals try to be more green, the keyword is "sustainability" — the ability to keep an action or system going indefinitely. Let's take a look at how some of these ideas can be applied to make an amateur radio shack more sustainable.

Risk and uncertainty. Do you disconnect your antennas when a storm is approaching? Do you have surge protection on your power strips, on your phone lines and on your antenna feeders? These will all help if there is lightning nearby. Is your station equipment insured against accidents? The ARRL has an insurance scheme for members' equipment which you may want to consider. See <http://www.arrl.org/FandES/field/regulations/insurance/equipment.html> for full details.

Appreciation and restoration of nature. Are you a good neighbor to local wildlife? Do you tidy up your rubbish after Field Day and other contests? What would you rather see in your backyard, a tall tree or a tall tower? (The correct answer is — both!)

Do you resist throwing equipment into the trash? Before you discard anything, ask — could it be repaired, or could you repair it yourself? You will feel a sense of satisfaction when an old piece of equipment is given a new lease of life.

If an unwanted piece of equipment is still in working order, perhaps it could prove valuable to someone else. Take it to a hamfest or auction and set a reasonable price to ensure a buyer.

Conservation of ecological integrity. Are you trying to save power? If everyone would conserve a few watts here and a few watts there, it would add up to a major saving in terms of carbon footprint, fuel reserves and the need to build additional power plants.

I was curious to see how much electrical power my amateur radio station was drawing, so I took some measurements using a P3 International "Kill A Watt" power measurement meter. (See <http://www.p3international.com/products/special/P4400/P4400-CE.html>) With the shack just "ticking over", the total current draw was nearly 4 amps from the 120 volt AC supply. Where was all that power going? I turned everything off, then powered up each item individually and noted the meter reading.

The largest single item was the desktop computer — 1.5 amps. Next came a group of four 12 volt power



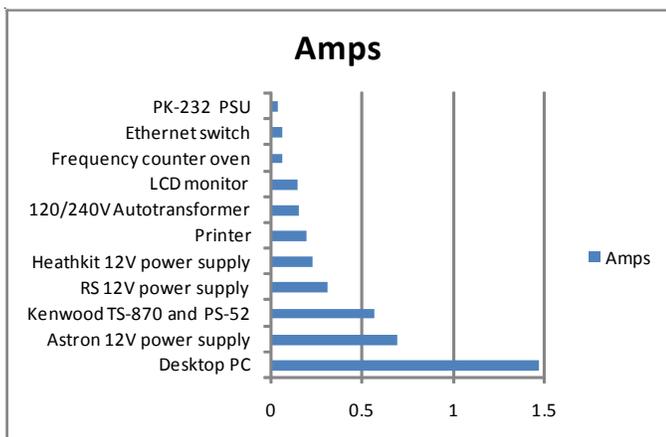
P3 International's "Kill A Watt" power meter displays volts, amps, watts and kWh.

supplies, drawing between 0.7 amps and 0.25 amps each. The laser printer was an interesting item — when not in use it only consumes around 0.2A, but when actually printing it draws as much as 8.7 amps.

Let's do a quick cost calculation. The "Kill A Watt" showed my radio shack drawing around 315 watts. (It allows for the power factor of inductive loads). If we assume the shack is in use for 40 hours per

week, that's a total of 12.6 kilowatt hours per week, or 54.6 kWh per month. ConEdison is currently charging 12.87 cents per kilowatt hour, so the monthly cost is around \$7.00. My monthly electricity use at this time of year is 360 kWh, so the radio shack is responsible for about 15% of the total.

How could I improve things? One easy solution is to turn off equipment that is not in immediate use, including printers. Another fix would be to change from a desktop computer to a notebook. My notebook PC's power supply only draws around 0.2 amp, depending on what it is doing That's a big improvement over 1.5 amps for the desktop computer.



Current consumption for items in the radio room.

A third change would be one I've resisted so far— replacing the linear 12 volt DC power supplies with switch mode supplies.

Linear, stabilized power supplies like the Astron RS-20M are not very efficient. The Astron draws 0.7 amp from the 120 volt AC supply while idling at 1 amp DC output. As a result, the heat sink runs quite warm.

On the other hand a switch mode power supply like the Alinco DM-330MVT can provide 1 amp DC while drawing only 0.3 amp from the AC supply. The "Kill A Watt" reports the Astron was using 33 watts while the Alinco only took 22 watts.

The disadvantage of switch mode power supplies is the RF noise they can throw out, especially if HF/MF antennas are nearby.

There is another factor to consider in the summer... apart from the power radiated as RF, the light shining from displays and the energy spent moving air around with fans and loudspeakers, the rest of the shack's electrical energy is all converted into **heat**. And in the summer, that heat has to be removed, using an expensive air conditioner. The less heat in the shack, the less air conditioning you'll need. U.S. households consume around 183 billion kWh per year for air conditioning.

- NM9J

Voice from the windshield

In the last few weeks, I have noticed an extra voice appearing on PCARA's repeaters. This is not the usual voice of members operating "/M" from their vehicles. Instead it is a mechanical voice saying things like "Continue 1.1 miles then turn right on Hardscrabble Road."

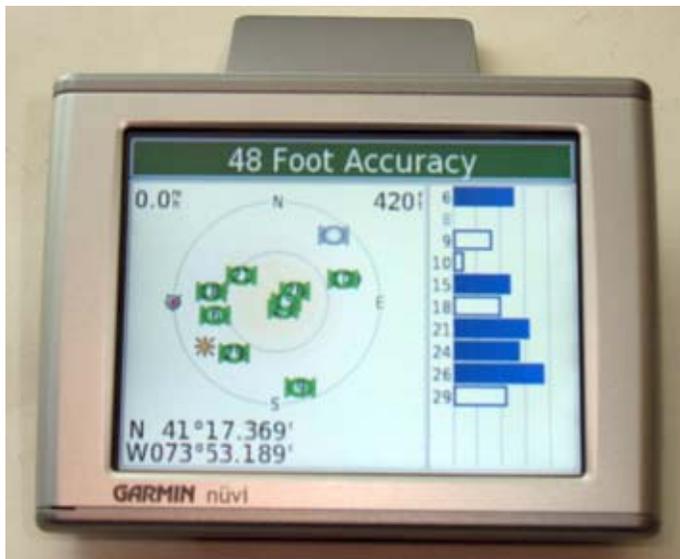
The explanation is that several members have acquired GPS satellite navigation aids with "Text to Speech" capabilities. Driving around with one of these units is like having a very knowledgeable friend giving directions at just the right moment. (One of my friends was not very good at map-reading – he usually gave instructions *after* the turn had gone past. The **Global Positioning System** can do much better than that.)

I have to say that GPS technology has improved in leaps and bounds since I bought my first handheld unit in 2001. That little Garmin eTrex Legend could show you where you were — provided you had a direct view of the sky with not too much overhanging foliage in the way. It was limited to 8MB of memory — sufficient to download monochrome road maps of the surrounding counties, but not much more. And it consumed AA batteries like there was no tomorrow.

Moving on to 2008, take a look at the Garmin

“nüvi” 350 Travel Assistant. This device is designed for a single purpose – to get you where you want to go in North America, with the most efficient driving directions possible. Apart from a single “on/off” button, there are no individual switches, everything is controlled from the color touch-screen.

Suppose we wanted to drive to Mt Beacon Hamfest. Just enter the address into the satellite navigation system in the following order — state (New York), town (LaGrangeville – type it in on the touch screen) and address, (1 Tymor Park Road). Then press “Go!”



Garmin nüvi 350 personal travel assistant is shown acquiring satellites. This unit is sufficiently sensitive to acquire GPS satellite signals indoors.

As we drive out of the garage, the sensitive 1575 MHz receiver picks up time-coded signals from sufficient satellites to know exactly where it is located and the friendly voice inside begins: “Please drive to highlighted route”. By this it means — look at the road map on the color screen, follow the bright purple highlighting and the white turn-arrows will show us where to go.

As we approach the first junction, the voice warns us: “In 0.1 mile turn right on Crompond Road”, followed by another reminder nearer the turn. The instructions continue, taking us north up the Taconic State Parkway, onto Route 82 North, followed by County Route 21 then along Duncan Road until we arrive at Tymor Park. Meanwhile, the on-screen 3D map moves beneath the vehicle, showing upcoming turns and surrounding features.

But what if there is a problem along the route? This happened to me twice in the past week. On one occasion, Route 35 was closed by a snowy accident and I had to divert around it. On another occasion, I-287

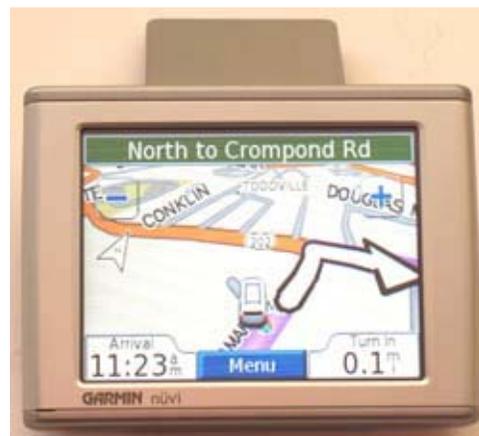
was completely clogged with traffic after an SUV hit a firetruck at Greenburgh. In both cases the satellite navigation system helped me out.

When there is a problem, all you have to do is drive away from the highlighted route and the GPS will say “recalculating”. It says this in a slightly pained tone, as though it cannot understand why anyone would want to ignore its excellent recommendations. The GPS then calculates a new route around the obstruction and takes you to the intended destination in the shortest possible time.

This all works amazingly well, so with the GPS’ positional accuracy of better than 50 feet (often as good as 15 feet) and its up-to-date built-in maps, the voice can tell you exactly where to turn in the middle of a complex junction. Compare this with the ‘old days’... of poring over maps and atlases before a trip and writing out directions to yourself. Or you might have generated routes with an Internet mapping service such as MapQuest or Google Maps, or a CD-ROM tool like Microsoft’s “Streets and Trips”. Some of these programs have their quirks... for example, don’t try driving to my new work location in Brewster according to the route planner in Microsoft “Streets and Trips” – it will take you to the rest area on I-684, then send you across the grass, through the woods and straight through the steel mesh fence onto Fields Lane! (“Turn right onto local roads.”)

The maps in the Garmin unit are much better than Microsoft’s, so after a while, you start trusting the GPS to know exactly what to do — but this can lull you into a false sense of security. The first sign of trouble is after you visit some place — but you have no idea how you got there! It’s time to pull out the paper map and follow the route chosen by the GPS unit. Why did it go that way? Was there a better route? Could you get there again without help?

Even more dangerous than going along for the ride is following directions blindly. In early January 2008, a computer technician visiting our area from California was driving his rental car west along Green Lane in Bedford, NY, following directions from his GPS unit to reach the Saw Mill River Parkway. As he crossed the Metro-North tracks 200 feet from the Parkway, the



GPS unit showing 3D map with purple highlighted route and white turn-arrow.

GPS told him to turn right — so he turned onto the railroad tracks and became stuck. According to MTA Police, he abandoned the vehicle minutes before it was slammed into by a northbound Harlem Line train. Nobody was hurt, but 500 passengers were stranded for two hours, other trains were delayed or canceled and repairs were needed to the electrified third rail.

Here are some less disastrous stories of sat nav silliness courtesy of the BBC. In the UK, a group of schoolchildren had to abandon a school trip to Hampton Court Palace after their driver followed his satellite navigation to a narrow north London street 18 miles away named Hampton Court. In Wales, out-of-date satellite navigation systems have been directing fans and players to Swansea's old football ground, causing one team to almost miss a match. And numerous truck drivers have followed GPS guidance down country roads that became far too narrow for their large vehicles.

This reminds me of the early days of radar in small craft. In bad weather, it was all too easy to watch the action on the radar screen instead of keeping a good look-out over the actual sea. This brought about the phenomenon of the "radar-assisted collision". Perhaps it's time for safe GPS use to be included in Drivers' Ed.

- NM9J

Postage increase

The price of a first class stamp will increase 1 cent from 41 cents to 42 cents on Monday May 12. Customers may continue to use "Forever Stamps" they purchased for 41 cents, even after the price change.

While the 42 cent stamp will be sufficient for a one ounce letter, the cost of a two ounce letter also increases by 1 cent to 59 cents.

Postcards will increase by 1 cent to 27 cents.



The US Postal Service adjusts its mailing service prices each May. By law, these prices can increase on average no more than the rate of inflation as measured by the Consumer Price Index.

Remember to keep your QSL Manager stocked with envelopes having sufficient postage for the new rates.



New VE Manual

On February 15, the ARRL VEC (Volunteer Examiner Coordinator) published the 9th edition of the *VEC Manual*. The new manual has removed all reference to

Morse code testing and can be downloaded as a PDF file, or ordered as a paper document.

For more details see: <http://www.arrl.org/arrlvec/vemmanual>.



Reciprocal licensing

The ARRL reported in early February that the European Conference of Postal and Telecommunications Administrations (CEPT) had revised its table of equivalence between FCC amateur licenses and the CEPT license. From February 4, full CEPT privileges will only be granted to US citizens who hold an FCC-issued Amateur Extra or Advanced class license. (<http://www.arrl.org/?artid=8000>)

The CEPT radio-amateur license allows US Amateurs to operate from most European countries without obtaining an additional license or permit. Under the CEPT agreement, US Amateurs just need to bring these items to operate from a participating CEPT country — their original US license, proof of US citizenship (e.g. passport) and a copy of the FCC's Public Notice in English, French and German detailing what US Amateurs need to do when traveling to a CEPT country.

US amateurs holding an Amateur Extra or Advanced class license qualify for CEPT Class 1, which carries full operating privileges on HF/VHF/UHF bands. US amateurs holding a General class US license are no longer qualified for a CEPT Class 1 license.

Shortwave fading away

The BBC has announced that its remaining AM shortwave transmissions to Europe closed on February 18, 2008. World Service broadcasts to southern Europe and



North Africa had been beamed from the UK and Cyprus on frequencies of 5875, 6195, 9410 and 12095 kHz, but these emissions have now ceased.

The BBC has been reducing shortwave AM transmissions throughout the decade, eliminating service to North America and Australia in 2001 and to South America in 2005. The BBC said the recent change had been made in line with listener trends in radio, with more people choosing to listen on other platforms. BBC digital (DRM) transmissions to Europe continue on HF 5875 and 5895 kHz from Kvitsoy in Norway plus MF 1296 kHz from Orfordness, UK.

The BBC is still using short wave AM to reach the Middle East, Africa, Asia and the Caribbean.

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

Mar 2: PCARA February meeting, Hudson Valley Hospital Center, 3:00 p.m. Presentation by Bob N2CBH.

Hamfests

Sat Mar 1: Splitrock ARA North Jersey Hamfest, Parsippany Police Athletic Lg Bldg, 33 Baldwin Rd, Parsippany NJ. 8:00 a.m.

Sun Mar 30: Southington ARA Flea Market, Southington HS, 720 Pleasant St, Southington CT. 8:00 a.m.

Sat Apr 5: Cherryville RA Hamfest, N Hunterdon HS, Rt 31, Annandale, NJ. 8:00 a.m.

Sun Apr 13: Mt Beacon ARC Hamfest, Tymor Park, LaGrangeville NY. **9:00** a.m. (Note new opening time!)

Sat Apr 26: Orange County ARC Spring Hamfest, Town of Wallkill Community Cntr, 2 Wes Warren Rd., Middletown, NY. 8:00 a.m.

VE Test Sessions

Mar 1: Splitrock ARA Hamfest, Parsippany PAL Bldg, Rt 46 at Baldwin Rd, 8:45 a.m. Contact: Sid Markowitz, (973) 663-0518.

Mar 2: Yonkers ARC, Yonkers PD, 1st Precinct, E Grassy Sprain Rd, 8:30 a.m. Contact D. Calabrese, (914) 667-0587.

Mar 13: WECA, Westchester Co Fire Trg Center, 4 Dana Rd, Valhalla NY. 7:00 p.m. Cntct: Stanley Rothman, (914) 831-3258.

Mar 14: Bergen ARA, Westwood Regional HS, 701 Ridgewood Rd Washington Township, NJ. Contact Donald Younger, (201) 265-6583.

Mar 17: Columbia Univ ARC, 2960 Broadway, 115 Havemeyer Hall, New York, NY. 6:30 p.m. Contact: Alan Crosswell, (212) 854-3754.



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