



PCARA Update



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Peekskill / Cortlandt Amateur Radio Association Inc.

August 2005

Summertime blues

Things have quieted down a bit from what they were for the last couple of months with the Foxhunt, Field Day, and the Special Event Stations. We're in the lazy hazy days of Summer. This is a good time to think about where PCARA should set its sights. Take a few minutes and make a list of your ideas and suggestions about things such as community service, emergency preparedness, contesting, club projects, etc. Please bring your ideas to the August meeting to share.

The Tri-State Amateur Radio Association's Hamfest is on August 14, 2005 in Matamoras, PA. There has been some talk of PCARA taking a table. We will be discussing this at the August meeting. If we do take a table and if you have anything you wish to sell, feel free to bring it along. If you sell something, please consider making a small donation to the club to help cover the cost of the tables.

Our Vice President Joe, WA2MCR has been in contact with the Cortlandt Regional Task Force for Emergency Planning and Citizen Corps Council (the Town of Cortlandt) about PCARA's equipment needs for emergency preparedness. An update will be given at the August meeting.

Hope to see each of you at the August 7, 2005 meeting at Hudson Valley Hospital Center.

- 73 de Greg, KB2CQE

Code comfort

Two-score years ago, your editor arrived at his first radio club meeting. The club secretary was not present that evening — instead he was 150 miles away on vacation in south Wales. But not to worry — this was an amateur *radio* club and it took just a few minutes for the club chairman to fire up his own transmitter and contact the club secretary — on 160 meter CW. The equipment at both ends was home-built — so this was impressive stuff for a schoolboy's first encounter with amateur radio!

That memory has stayed with me a long time. I suppose the equivalent nowadays would be to fire up the local IRLP node and talk on UHF to friends on vacation. The new ways have a lot more technology,

but a lot less personal involvement. There's something about a CW contact that brings people closer together... the effort to pull weak signals out of the noise... the hands-



on use of simple equipment... and the tradition of more than 100 years of wireless transmission of Morse.

So I have mixed feelings about the FCC's July 19 "Notice of Proposed Rule Making" that would drop the 5 wpm code test from any class of amateur radio license. (The proposal is in response to changes in Article 25 of the international *Radio Regulations* enacted at WRC 2003.)

The U.S. is lagging far behind most other countries with a sizable amateur radio population in eliminating the Morse requirement. The latest country to join the "No code for HF" club is Canada. So, when the rules are changed in a few months' time, and the V.E. Teams have given their last 5 wpm code test, we can look forward to a future where Mr. Morse's code is still in active use on the amateur bands, but it will no longer be a barrier to recruitment.

For more about CW in action, just read this month's column by Karl, N2KZ.

- Malcolm, NM9J

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Adventures in DXing

6 Meters On My Mind — N2KZ

Chasing E-skip has been a passion of mine since birth. I grew up with the visual variety on low VHF channels 2 through 6 with a little FM now and then. Two Field Days ago I had a remarkable experience when Ray, W2CH invited me to operate his rig from high atop Bear Mountain. Holy cow! I *became* E-skip. Suddenly, I was cruising 6 meters, logging state after state and having a royal ball!

A good friend at work, Lonnie, NY2LJ arrived at my office, a couple of months ago, with an armful of gear. A gifted and experienced kit builder and experimenter, Lonnie was determined for us to communicate from my office down the hall to the control room for the *CBS Evening News* where he spends a lot of time. He handed me a Santec MX-6S, its matching loaded whip antenna, the optional CW adapter and a mini-paddle key. We were ready to go! Lonnie headed down the hall and in minutes, we were having a really wacky QSO on 6 meter CW. This was only the beginning!



Santec MX-6S 6 meter QRP transceiver was made by Mizuho and has 1 watt output on SSB or CW.

A couple of weeks later, daily powerful E-skip started invading Channel 2 reception. Six meters was calling again! I brought the Santec HT home ready for adventure. Operating with just a couple watts into a telescopic whip, I tried my luck. Within one hour, I had

contacted three stations in Michigan. They call it the magic band for a reason!

At Field Day this year, I again jumped onto Ray's 6 and 2 meter gear. We worked stations like crazy. Maine, New Hampshire, Delaware, Maryland, Pennsylvania all came in easily. A minor E-skip opening found us conversing with several hams in the deep South. Great fun was had by all!

What a team we made. Ray had the great equipment and was ready to log our catches. I had the CW fist and ears. It was ham radio poetry!

Fueled with inspiration, I built an extended folded dipole from twin-lead from a design given to me by Bob, K2TV. It has a clever gimmick to match the 300 ohm cable to 50 ohm cable using a pico-cap as a trick in the feedline. The twin-lead was gladly supplied by another ham at work, J.J., NJ2I. Talk about Elmering! After about one hour of construction, I hung my creation in my attic and *voila!* The Santec HT was finally connected to a "real" antenna. Now I had an official 6 meter CW station!

This basic antenna proved miraculous. I called CQ and worked a ham in Trumbull, Connecticut point-to-point. Jeff, K1TEO pulled through my 2 watt signal. Not bad! A Canadian ham, Ivan VE3DO heard me in Toronto via tropospheric skip. This is only the beginning! I'm waiting for the next E-skip opening to really try my wings. Thanks to all for your encouragement!

XM propagation

Portable and mobile microwave reception is a new frontier for me. Information regarding this band is scarce at best. After long hours of research, I discovered a fascinating document on-line written as a part of a Master's thesis by Laure Mousselon at The Virginia Polytechnic Institute and State University in 2002.



This comprehensive paper provides an excellent foundation towards understanding the characteristics of this 13 cm wavelength. Virginia Tech's Antenna Group developed a propagation simulator to study how XM Radio signals behave during roadside reception. Laure composed a detailed description of their work and findings. This is a must-read for anyone seriously interested in the mechanics of XM Radio.

Laure's paper begins with the basics: S-Band signals arrive via three types of paths: direct, diffuse and specular. Direct signals are a home run from the originating satellite in a single straight path. Diffuse signals have scattered after reaching earth due to deflection by topography (rocks, roads, house siding) some distance from your antenna before reaching your receiver. The specular component arrives via a single bounce nearby your antenna. All these signal paths can combine and/or cancel as they reach your antenna. Add attenuation and aberrations due to foliage and buildings of steel and concrete. The complexity of this mix is mind-boggling!

This thesis also includes formulaic analysis of the behavior of S-band signals especially in moving vehicles. In the world of S-Band, there are no simple answers. These microwave signals behave in a similar fashion to visible light and arrive at your antenna via multiple paths. Receiving these signals in a moving car is a considerable challenge. My fascination with XM's technology grows daily!

I particularly admire the XM system of error correction. Two geosynchronous satellites and various terrestrial repeaters initiate the signals. Propagation and deflection create time delays and phase additions and cancellations adding further complexity. Your receiver takes this cacophony, performs complex signal analysis and error correction, stores it in a bucket-brigade manner to allow for complete signal interruptions, and then converts it to an analog signal for you

to hear. The crystal-clear results are truly miraculous.

My important revelation is an obvious one. It does not matter where your signal originates. If it passes through an area influenced by a mode of propagation, the signal will be altered regardless of the point of origination. In example: I walk across a steel and concrete bridge every morning to reach my train station. XM reception on this bridge varies widely. Over-the-air UHF TV propagation and XM propagation are quite similar. When UHF TV shows a strong lift due to an inversion or moist tropical storm clouds, XM propagation seems equally more robust. Cloudless clear mornings sometimes produces the worst reception! The point of signal origination is not paramount. If the signal passes through the affected ether, the signal will change.

As I learn more, I will share it with you! You can find Laure Mousselon's paper at: http://scholar.lib.vt.edu/theses/available/etd-11222002-112331/unrestricted/thesisfinal_version1.pdf

Roady 2X2

XM Radio recently ran a promotion offering a free XM Roady 2 radio if you buy any other XM radio. I procrastinated about the offer idea for a couple of months but finally gave in. The price of the basic Roady 2 was recently discounted to less than \$50 dollars, so I could obtain two Roady 2s for about \$25 apiece. Quite a deal!

I ordered my first Roady 2 on-line and received it in a few days. Originally intended as a car radio tuner, it is a neat and concise unit measuring about 4 inches by 2½ inches. Its LCD display provides easy-



Delphi Roady 2 XM Radio receiver

to-read very large lettering and the ability to change the background to seven different colors. I prefer sky blue, but you can also choose red, green, night blue, orange, purple, or pink. I'm guessing this idea allows you to match your dashboard colors. Included in the basic kit are a 12 volt cigarette lighter power cord and a "mini-mouse" antenna along with mounting hardware for the tuner.

The numeric selection buttons line the bottom of the radio for easy entry while driving. Buy the optional remote control, and you gain the ability to scan all the available programs similar to a standard analog car radio. Although you can scan stock price information, the Roady 2 is not capable of receiving sports scores like its big brother the XM MyFi. An inexpensive home kit for the Roady 2 includes a 120 VAC power supply, a larger "brownie" antenna and a tiny remote control.

Another option is a wrap-around housing that adapts the Roady 2 into a battery operated Walkman type radio complete with FM tuner. Like other XM radios, press 2-0-7 then the XM button on the Roady 2 to see detailed diagnostics regarding signal quality and other parameters.

I installed my first Roady 2 as an accessory to a Bose CD Wave Radio in my living room.

The second is destined for my wife's mommy-van. XM claims they are "everything all the time." I'm beginning to believe them.



Roady 2 with Bose CD Wave Radio

The variety of programming never disappoints. In my lengthy trips to Michigan and back, I can listen to one program for hours and hours without changing frequency or hearing any interference or commercials. It can't be beat!

Great Times. Great Lakes. Great Fun (on 20 meters!)

My summertime sojourns to Michigan always include some QRP CW DXing. Last year, I used an Oak Hills Research OHR-100A transceiver on 30 meters. I went up in frequency this summer trying my luck on 20 meters with a Small Wonder Labs DSW-II. Both rigs are self-contained kits with built-in keyers delivering 5 watts to the ether above.

I begin throwing ropes over tree limbs using a small piece of log as a weight. I hoist my dipole up to a height of 20 to 30 feet. I need to try a slingshot! Some of the big old surrounding trees look 100 feet tall! Equipment setup could not be easier. I plug in a mini-paddle to send the code, headphones, a little AA battery pack and the antenna. A minute later and I'm on the air. The entire shack fits on the seat of a lounge chair!

Is this heaven? No, it's Michigan!

Although I am literally operating at just a few feet above lake level, the scenery is astounding. I sit a stone's throw from Lake Huron among majestic towering trees. A lighthouse appears across the water in the distance and golden eagles often fly overhead. Sunrises and sunsets always seem more spectacular than the night before.

Something new became obvious this year: At this locale, I also can become quite an attraction! Port Austin township sits in a rare grid square – EN84la –



View over Lake Huron (photos by N2KZ)

and a rare county – Huron, Michigan. If word gets out, you may be looking at quite a pile up of avid county hunters!

During two weeks of very casual operating, I worked twenty stations from 14 states and two foreign countries. My best QSO was a two-way QRP to QRP ragchew with Olaf, DL4HG in Hamburg, Germany who was using an Elecraft K1 running on a Gel-Cel battery. His QSL is now a cherished souvenir. A large solar event, around July 10th wiped out 20 meters for about five days reducing the number of my contacts considerably. Malcolm NM9J, Mike N2EAB and Bob, N2CBH all tried to reach me on 20 meters, but propagation was quite challenging at best. The band was often quite dead, or acting wildly sporadic like an adventurous afternoon on 6 meters.

I'll be back in Michigan for two weeks in August. Look for me around 14.060 MHz from dawn to mid-evening. I move around the band quite a bit, but my home base is the '60 QRP frequency. My flea power signal is looking for a good receiver! It could be yours!

The Long Way

I have a communications receiver in my bathroom (doesn't everybody?) that receives long wave. Lately, I have been revisiting these wavelengths just before dawn. The band has changed in the last few years. The handful of aeronautical weather stations broadcasting human voice are gone. With good ears and good antennas, European broadcast stations can still be heard in the evening especially in winter. The mainstay of this band remains the NDB (Non-Directional Beacon.)

With a simple wire antenna, I can receive about a dozen NDBs at any given time. NDBs broadcast AM modulated tones sending Morse Code ID letters at very slow speeds. Nearby beacons include "HP" White Plains on 281 kHz, "PNJ" Paterson, New Jersey on 347 kHz, and "OX" Oxford, Connecticut on 362 kHz (...not to mention "SW" Neely, Newburgh on 335 kHz -Ed.) You don't need to wait for an ID. All they ever do is identify

sending their letters over and over again!

Some of my best DXing has been in this band. Part 15 of FCC regulations allows unlicensed operation of transmitters on the 160 to 190 kHz band. At one watt output, longwave enthusiasts have completed two-way QSOs over hundreds of miles. Other operators, mostly licensed hams, have established beacons in this band operating 24/7. Receiving a one watt beacon using a tiny transmit antenna on ultra long wave is quite an achievement. The Long Wave Club of America lists these "Lowfer" beacons on their website: <http://lwca.org>.

The key to success on longwave is not brute strength of signals. The goal is to null out noise. Directional high-Q loop antennas and very efficient ground systems are key. For a wonderful introduction to longwave, take a look at Sheldon Remington's "The Art of NDB DXing": <http://lwca.org/library/articles/kh6sr/index.htm>. Learn how to "get down!"

Until we meet again, happy trails

– de N2KZ Karl "The Old Goat."

Muscoot Special Event

PCARA's second Special Event station of 2005 took place over the weekend of July 9-10. Jim W2JJG had arranged with Westchester County 4-H for a station at the 4-H Fair, located at Muscoot Farm in Somers. This was the 10th anniversary of the 4-H fair, ARRL had assigned the call **W4H** and Jim was promising good weather.

Muscoot Farm was originally a "gentleman's farm" belonging to New York businessman Ferdinand Hopkins. The Hopkins family ran the farm until 1967, when it was acquired by Westchester County. This year the farm celebrates its 30th anniversary as a Westchester County Park. The aim of the park is to show visitors how farm life was lived in the 1920s, including an



Joe WA2MCR prepares to haul the first antenna into the trees alongside the old farm house at Muscoot Farm.



Special Event station **W4H** in operation with (L to R) Jim W2JJG on 20 meters, Ray W2CH and Marylyn KC2NKU, Joe WA2MCR on 40 meters plus Alan.

introduction to the farmyard animals that still live at Muscoot year-round.

Jim, W2JJG had located the Special Event station alongside the “old farm house”, which was the Hopkins Family home. The “old farm house” is a beautiful Colonial home, complete with classic pillars at the front and tall trees on the western side. As an interesting reflection on PCARA’s W2D New Croton Dam operation back in May, the Hopkins farm house and other buildings had to be moved to their present location in 1901 after the land they were originally built on was acquired by New York City for the New Croton Reservoir.

Those tall trees proved very accommodating as antenna supports and provided plenty of shade on a hot, sunny weekend. The first antenna to go up was a half-size G5RV for use on 20 meters, followed by the multi-band 40 meter dipole.

4-H had kindly provided an open-sided tent for the radio station, complete with tables, so it did not



Jim W2JJG explains amateur radio to a 4-H colleague while Marylyn operates 40 meters.



W4H QSL card.

take too long for the two HF stations to be set up, using all-Icom equipment. For 20 meters Jim had brought along his IC-746PRO and for 40 meters, the NM9J IC-706MkIIIG was reconnected to the 40 meter dipole last used at Field Day. In case this whole operation sounds a little too much like a re-run of Field Day, bear in mind that this time the stations were powered by 120 volt AC from the farm house, where 4-H also had provided food and drink for the volunteers, as well as a bathroom with hot water and towels. (Toto, I don’t think we’re on Bear Mountain anymore.)

HF conditions were rather mixed over the weekend of July 9-10. In a further echo of the W2D operations, there was a coronal mass ejection on July 9 that hit Earth on the Sunday, causing a geomagnetic storm. Nevertheless, 140 contacts were made, with around 35 QSOs coming from the IARU HF World Championships on Saturday. Best DX on 20 meters was the Italian contest team IR2M. Best DX on 40 meters was VE1ILN in Nova Scotia. QSL cards are already being sent out by Jim.

As a reminder that PCARA was operating a 4-H event from a working farm, there were occasional visits from friendly animals. At one point a large flock of geese came walking through the picnic grove past our station as if they owned the place. Later, on Sunday, crowds of young dog owners came by with their charges on the way to the Canine Good Citizen and Dog Obedience demonstrations on the front lawn.

A big thank you to everyone who helped in the setup and operating at W4H, including Jim W2JJG, Joe WA2MCR and Alan plus Ray W2CH and Marylyn KC2NKU. Although the farmyard animals were friendly enough, Marylyn had a less than happy experience with local wildlife while operating. A special mention goes to Shirley N2SKP, who was busy with 4-H duties but who also found time to come and operate at W4H.

- Malcolm, NM9J

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.

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 Aug 7: PCARA August meeting, HVHC, 3:00 p.m.

Hamfests

Sun Aug 14: Tristate ARA Hamfest, Matamoras Airport Park, Airport Park Pavilion, Matamoras, PA. 8:00 a.m.

Sat Aug 20: Ramapo Mtn ARC Hamfest, American Legion Hall, 65 Oak Street, Oakland, NJ. 8:00 a.m.

Sun Sept 18: Candlewood ARA Western CT Hamfest, Edmund Town Hall, Rt 6, Newtown CT. 8:00 a.m.

Sun Sept 25: LIMARC Outdoor Hamfair & Electronics Flea Market, Briarcliffe College, 1055 Stewart Avenue, Bethpage NY, 8:30 a.m.

Sat Oct 8: Bergen ARA Hamfest, Westwood Regional HS, 701 Ridgewood Rd, Washington Township NJ. 8:00 a.m.

VE Test Sessions

Aug 7: Yonkers ARC, Yonkers PD, 1st Precinct, E Grassy Sprain Rd, 8:30 a.m. Contact D. Calabrese, 914 667-0587.

Aug 8: Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, 6:30 p.m. Alan Crosswell, 212 854-3754.

Aug 14: PEARL, Camp Ramah, Wingdale NY . 6:00 p.m. Contact NM9J. (No walk-ins.)

Sep 24: PEARL, Bureau of Emergency Svcs, 112 Old Rt 6, TOPS Facility, Carmel, NY. 9:00 a.m. Contact NM9J.



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