



# PCARA Update



Volume 5, Issue 5

Peekskill / Cortlandt Amateur Radio Association Inc.

May 2004

## Spring activities

PCARA has received permission from the Palisades Interstate Park Commission to hold our Field Day 2004 activities at Perkins Memorial Point on Bear Mountain.



This year Field Day is the weekend of June 26 - 27. Please join us in practicing our emergency communications skills, while at the

same time having fun doing what we love to do. To sign up for Field Day please contact Bob, N2CBH at n2cbh @ arrl.net.

PCARA is sponsoring a Foxhunt on Sunday, June 6, 2004. Bob, N2CBH and Mike, N2EAB will be organizing the hunt as well as playing the "foxes". Further details will be provided at the May 2<sup>nd</sup> Meeting and on the PCARA website. Please note that the June 6<sup>th</sup> meeting will take place immediately after the Foxhunt at a local restaurant chosen by the foxes.



Tickets for the PCARA Annual Raffle are on sale. The prize this year is a Yaesu VX-2R Dual Band HT. Tickets are \$5.00 each, with a limit of 100 tickets to be sold. Ticket sales have been brisk, so get yours today! The winner will be drawn June 27, 2004 at the conclusion of Field Day. Tickets will be on sale at the May and June meetings, and from Malcolm, NM9J (or by mail via the PO Box).

I hope to see each of you at the May 2<sup>nd</sup> meeting at Hudson Valley Hospital Center at 3:00 PM.

- 73 de Greg, KB2CQE

## Mt Beacon Hamfest

PCARA had a club table at the Mt. Beacon Amateur Radio Club Hamfest, held on April 18 at Tymor Park, 12 miles east of Poughkeepsie. Our location was in a high traffic area, between Frank, W2IX and Gene, K2KJI of KJI Electronics. The weather was perfect and attendance was high. Ray, W2CH was doing a good



Left, Joe WA2MCR and Alan, right Ray W2CH and Marylyn manning the PCARA club table at Mt. Beacon ARC Hamfest on April 18. The table was next door to KJI Electronics.

trade in digital cameras. If you would like to see more photos, including a shot of Ray and Marylyn at the PCARA table, take a look at Mt. Beacon's picture gallery: <http://www.qsl.net/mbarc/gallery/fest04.htm>.

Joe, WA2MCR brought his son Alan along and Alan was busy for most of the day persuading people to contribute to the PCARA raffle. As a result, donations were excellent!

- NM9J

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## PCARA Officers

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Vice President:

Joe Calabrese, WA2MCR; wa2mcr@arrl.net

Secretary/Treasurer:

Mike Aiello, N2HTT; n2htt@arrl.net

# Quarter century computer

*It was twenty five years ago today...  
Sergeant PETter taught the hams to play...*

Twenty five years ago, in late April 1979 I bought my first home computer. Harold, G3LWK had already infected me with the digital bug by acquiring a



Northstar Horizon microcomputer and letting me program it in BASIC. The Horizon was an S-100 bus machine that required an external Teletype or CRT terminal. I was looking for something more self-contained and settled on a Commodore PET, purchased from Stack Computer Services at Crosby, near Liverpool in north west England.

The PET or "Personal Electronic Transactor" was introduced by Commodore Business Machines in 1977. I bought a 2001-8 – this particular model came in a solid steel case containing the main circuit board, power supply, "calculator style" keyboard, cassette



*Commodore PET was a self-contained microcomputer with cassette drive, keyboard and video monitor.*

tape drive and built-in video monitor. Its central processor was a MOS Technology 6502 running at 1 MHz. The standard machine came with 8 kilobytes of RAM – for younger readers, that "8 kilobytes" is not a typo! I spent more cash on a memory expander that added 24 kilobytes for a mighty total of 32 kilobytes of RAM – a huge amount in 1979!



The memory chips on those early PETs had problems – the 6550 integrated circuits would creep out of their sockets as they heated and cooled and needed pushing back from time to time. Eventually they would fail and were expensive to replace—so I ordered an adapter kit from Optimized Data Systems of Placentia, CA that allowed cheaper 2114 RAM chips to be substituted.

The Commodore PET soon had pride of place in the G3VNQ radio room. I purchased an imported Microtronics M-65 "ham interface" kit for RTTY/CW and built it into a metal case. Microtronics was Ron



*G3VNQ RTTY/CW interface for the PET contained a Microtronics M-65 decoder as well as TU and AFSK boards from M.K. Products. This unit was subsequently modified to include RS-232 serial I/O for use with a PC.*

Lodewyck, N6EE's company in Hughson, CA. Back then, almost everything to do with microcomputers was manufactured in the U.S.A. How times change!

What are the differences between a 1979 computer and a modern PC? Well, there was no need to worry about viruses, worms or disk crashes back then. The Commodore PET had its entire operating system in read-only memory, and programs were created by typing at the keyboard or loaded from cassette tape. The PET's BASIC interpreter was also stored in ROM and powered up with the friendly message:

```
***COMMODORE BASIC***  
7167 BYTES FREE  
READY.
```

My PET showed more than 7167 bytes free thanks to its memory being filled to the maximum of 32 kilobytes. Despite the "Commodore Basic" sign-on, the ROM-based BASIC Interpreter had been provided by Bill Gates' three-year old company, and there was a keyboard trick that would reveal its true Microsoft origins.

Let's take a look at computer operations in 1979. If I wanted to load my favorite game, "StarTrek", I would find the cassette tape, place it in the tape drive, type "LOAD" on the keyboard and start the cassette playing. Fifteen minutes later, when the software had completely loaded from tape into memory, it was time to type "RUN". This particular game was almost completely text-oriented and displayed in green letters on the PET's 40 character by 25 line screen. The only graphics available made use of block and line characters. Incidentally, that "Star Trek" program had taken me several days to type into the PET from a listing in one of David Ahl's *BASIC Computer Games* collections.



*Photo of the G3VNQ shack in 1980. The Commodore PET is under the black dust cover. Note the three racks of cassette tapes on the top shelf for data storage.*

At the time, David Ahl was editor of *Creative Computing* magazine, another source of inspiration from the U.S.A.

Those microcomputers of 25 years ago had quite an effect. Until then, most people's closest encounter with a computer was their utility bill. The PETs, Apples and TRS-80s of the late '70s showed a bunch of enthusiasts — including teachers, small business people and radio amateurs — the possibilities of an electronic device that could be programmed any way you liked, to do exactly what you wanted. Many people became skilled at creating their own software using Microsoft BASIC. Early applications were generally math and arithmetic-oriented. I remember programs for calculating VHF contest scores, atomic weights, speaker cross-over networks and simple statistics. Business-style applications such as word processing and spreadsheets were not far away, as keyboards, monitors and printers all improved.

What about the problems of the Commodore PET? That calculator style keyboard was a definite drawback! Subsequent PETs had full size keyboards and the limited 40 character display eventually grew to 80 characters wide. Slow, cassette tape storage was superseded by 5¼ inch floppy disks — but Commodore plowed its own furrow using the IEE-488 GPIB for connection to external floppy drives. The GPIB (General Purpose Interface Bus) — also known as the HPIB — was originally developed by Hewlett Packard for connecting controllers to programmable instruments. There wasn't even a serial port on the PET, so I had to buy a GPIB to serial adapter when my first dot matrix printer arrived.

That PET 2001-8 stayed in my shack until the first IBM-PC clone was acquired in 1984. The PC was significantly ahead of the PET, with its color graphics adapter, built-in diskette drives, full ASCII character set, plus serial and parallel ports. Still, the PET served as a great launch-point into the world of personal computing.

- Malcolm, G3VNQ, NM9J

## Grundig S350

On a recent visit to Radio Shack, I came across a relatively new shortwave receiver. The "Grundig S350 Field Radio" covers AM broadcast, shortwave and VHF-FM bands. As you'll see it has some interesting pluses and minuses.

First of all, this is not your grandfather's Grundig! This radio has been nowhere near Nurenburg, it does not have a walnut case and there are no KW, UKW or any other German dial markings to be seen. Grundig AG declared bankruptcy in 2003 and the HIS division was recently taken over by U.K. electronics maker Alba and Turkish electronics maker Beko. Meanwhile Eton Corporation of Palo Alto, California (<http://www.etoncorp.com>) has an exclusive licensing agreement to use the Grundig name on radios sold in North America. These radios are now developed by Eton and its partners independently of Grundig in Germany. As far as the S350 is concerned, the radio is manufactured in China, and a very similar model can also be purchased as a Tecsun BCL-2000.



*The Grundig S350 Field Radio with its "aeronautically inspired" design receives AM, FM and SW.*

The Grundig S350 has an "aeronautically inspired" silver metallic finish. This almost looks like a metal case — but it's mostly plastic.

To some extent, the S350 can be seen as an updated GE "SUPERADIO" — the model with the large ferrite rod antenna and excellent sensitivity in the AM broadcast band. The SUPERADIO III had optional wide I.F. bandwidth, with a 6 inch diameter speaker plus separate 1 inch tweeter for good audio response. While the S350 does have two separate I.F. bandwidths, they are not as wide as in the SUPERADIO, and the S350's single loudspeaker is only 4 inches in diameter. As a result, the S350's audio response is not as good as the GE SUPERADIO.

The S350 has some obvious advantages. There is a large LCD frequency display, which is much more accurate than the slide-rule frequency dial on the SUPERADIO. However, the S350 receiver is **not synthesized** – the two-speed tuning control operates an old-style analog



*GE SUPERADIO III is an AM/FM receiver with good MF sensitivity and wideband AM IF.*

tuning mechanism, and there is significant backlash, especially on the higher shortwave frequencies. The frequency readout simply measures the local oscillator frequency, and then adds 455 kHz to calculate the dial frequency. Short wave coverage is from approximately 2.9 MHz to 28 MHz in 3 separate bands.

The single I.F. design causes a problem on short wave – the image frequency is not very far away from the desired frequency and broadcast signals appear twice on the dial – once at the “real” frequency and once again 910 kHz lower. When real signals and images overlap in the crowded broadcast bands, there can be a confusing mixture of carriers, with unpleasant heterodynes.

The LCD display does have some useful features. There is a digital S-meter indicating four separate signal levels, and these can be helpful during the analog tuning process. There is a built-in clock, which can be set to 12 or 24 hour display – handy for GMT. The clock can be set to turn the radio on once a day and also acts as a sleep timer – press the “power button” once for 90 minutes sleep time, then press again for 75, 60, 45, 30, 15, 10 or 1 minutes. If you do not need the 90 second sleep timer, hold the power button down for 3 seconds to provide continuous operation.

One advantage of not having a synthesized receiver is that the battery drain can be kept low. Typical current draw is around 60mA while the radio is operating at moderate audio levels, so the four D-cells will last a long time.

The radio has an RF gain control, which is operational on the AM broadcast and short wave bands. Useful range is between the “0” and “3” marks on the dial — even though you can turn the control all the way up to “10”, you won’t get any more gain. Another control that could be potentially useful is the “SW LPF” switch – the instructions describe it as a “low-pass filter for shortwave and AM reception” and suggest turning this control on “if there is excessive background noise”. In practice, “SW LPF” seems to act as a switched

attenuator for the external antenna on the three short wave bands.

Is the Grundig S350 good value at \$99.99? I would say not. While it may not be your grandfather’s Grundig, the performance reminds me of general coverage receivers from 30-40 years ago. The single conversion design and dreadful dial backlash just cannot compete with a synthesized receiver such as Sony’s ICF-2010 or Grundig’s own \$150 Yacht Boy 400. Both these models can receive AM/CW/SSB, while the S350 is AM only. If all you need is distant AM broadcast reception, look for a GE SUPERADIO III, or the Radio Shack equivalent. But if you really want the feel of a 1960s shortwave receiver, visit the next amateur radio flea market or wait until Radio Shack puts the S350 on sale for its true value around \$49.99.

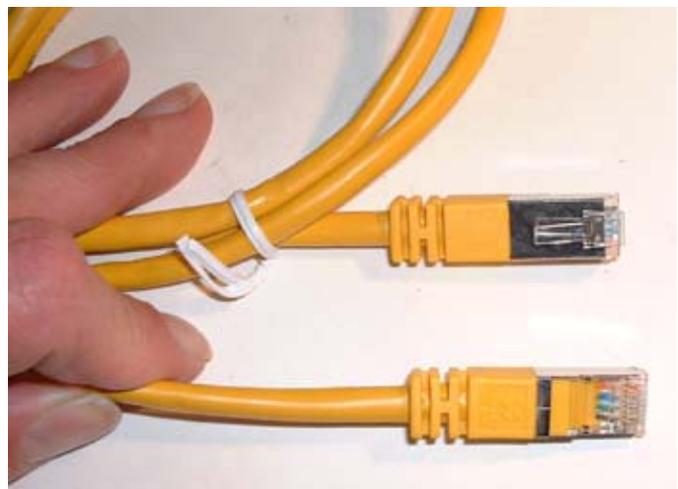
- NM9J

## Noisy networks

If your radio shack is anything like mine, it probably contains a mixture of radio equipment and computers. You might even have a broadband connection with your cable modem or DSL modem connected through a router to the local area network.

All that network equipment has to be connected together and in a modern installation you are likely to be using Category 5 or Cat 5E unshielded twisted pair (UTP) cables. These cables have a tight twist on each pair to prevent the radiation and pickup of interference.

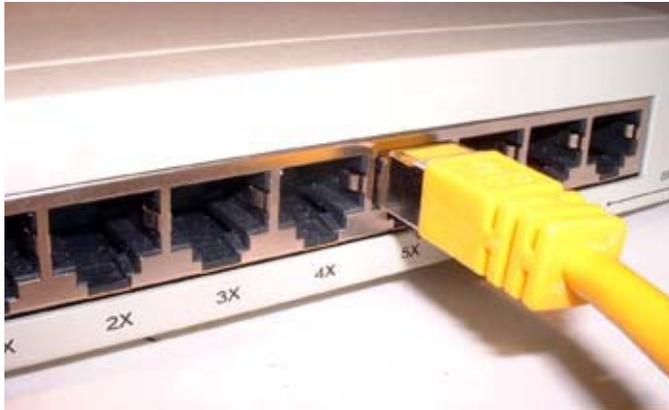
If your HF antenna is close to the UTP cabling, there is a good chance you will pick up *some* interference from the network equipment, especially on the quieter high frequency bands. What to do? Well, one relatively simple solution is to change from unshielded twisted pair to **shielded** twisted pair (STP) cable. Shielded twisted pair is more popular in Europe than in the U.S.A., but patch cables can be purchased here and



*Shielded twisted pair Category 5E patch cable has a metal shell around each of the RJ-45 connectors.*

the cost is not too much higher. One vendor I found was Cables America (<http://www.cablesamerica.com>), in Dayton, Ohio. They sell a 3ft shielded Cat 5e molded patch cable for \$4.44.

These shielded cables have special RJ-45 connectors with the shield conductor brought out to a metallic shell. When mated with the correct type of shielded



*Grounded spring tabs on the sides of the RJ-45 jack sockets contact the metal connector shell of the shielded twisted pair Cat 5E cable.*

RJ-45 socket on the network equipment, the shield connection is maintained between chassis grounds of those items of equipment.

I had a problem with unwanted emissions from my cable modem, and substitution of shielded for unshielded Cat 5E cables gave a substantial reduction in signal strength of undesirable carriers on 15 meters. Installing a perforated metal shield around the cable modem improved matters even further.

Of course, these efforts may all have been a waste of time if our local electric utility begins distributing broad band network signals at HF and VHF on **unshielded untwisted pairs (UUP)** — in other words **BPL!**

– Malcolm, NM9J

## FCC proposals

**Apr 15, 2004.** The FCC has released an "omnibus" Notice of Proposed Rule Making that seeks comments on a wide range of proposed Amateur Service rules changes. The FCC also denied several petitions for rule making aimed at altering portions of the Amateur Radio regulatory landscape and ordered minor changes in Part 97. Comments on the proposals put forth in ET Docket 04-140 are due by Tuesday, June 15, with reply comments by Wednesday, June 30. Among other changes, the FCC has recommended adoption of the ARRL's "Novice rearming" plan. See <http://www.arrl.org/news/stories/2004/04/15/102/?nc=1>.

Tnx — N2FF and Hudson Division *Beacon*, <http://www.hudson.arrl.org>

## PCARA Annual Raffle



**Tickets now on sale!**

**1st Prize:**

**Yaesu VX-2R**

**2 meter/440 Transceiver**

**Perfect for beginning Techs and  
great for all Hams**

**Tickets are \$5.00 donation each.**

**Limit of 100 tickets sold.**

**Proceeds to help offset our liability insurance  
premiums and keep our dues low.**

**Drawing to be held  
June 27, 2004  
at Field Day 2004**

**Tickets available at meetings, Hamfests and via  
PCARA, PO Box 146, Crompond NY 10517.**

# Peekskill / Cortlandt Amateur Radio Association

**Mail:** PCARA, PO Box 146, Crompond, NY 10517

**E-Mail:** w2nyw@arrl.net

**Web site:** <http://www.pcara.org>

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*Newsletter contributions are always very welcome!*

## 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

**Sunday May 2:** May meeting, HVHC, 3:00 P.M.

**June 5-6:** Fists CW station. (Look for KNOVCW at N2KZ).

**Sunday June 6:** PCARA Foxhunt and June meeting

## Hamfests

**Sun Apr 25:** Southington ARA Fleamarket, Southington HS, 720 Pleasant Street, Southington CT. 9:00 a.m.

**May 14-16:** Dayton Hamvention.

**Sun May 23:** Gt South Bay ARC, Hamfest, Sunrise Mall, Massapequa, NY. 8:00 a.m.

**Sat May 29:** Bergen ARA Hamfest, Westwood Regional High School, 701 Ridgewood Rd, Washington Twntship, NJ. 8:00 a.m.

**Sun Jun 6:** Hall of Science ARC Hamfest, NY Hall of Science, 111 St, Flushing Meadows, Queens NY. 9:00 a.m.

## VE Test Sessions

**May 2:** Yonkers ARC, Yonkers Police Dept., 1st Precinct, E Grassy Sprain Rd, 8:30 A.M. Contact: D. Calabrese, 914 667-0587.

**May 13:** WECA, Fire Training Center, 2 Dana Rd., off Rt 9A, Valhalla NY 10595. 7:00 p.m. Preregister with Sanford Fried, (914)273-2741.

**May 17:** Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, NY, 6:30 p.m. Contact Alan Crosswell, 212 854-3754.

**May 18:** W5YI VEC Pel Hams, Pelham Doronco Town House, 20 5th Ave, Pelham NY. 7:30 p.m., Contact: Michael Cifferi, (914)738-5775.

**May 10:** Split Rock ARA, Hopatcong High School, Rm C-1, Hopatcong NJ. 7:00 p.m. Contact Sid Markowitz, 973 724-2378.

**May 21:** Bergen ARA, Westwood Reg HS, 701 Ridgewood Rd, Washington Twntshp NJ. 7:00 P.M. Contact Donald Younger 201 265-6583.

**May 29:** Bergen ARA Hamfest, Westwood Regional High School, 701 Ridgewood Rd, Washington Twntship, NJ. 8:00 a.m. Contact Donald Younger 201 265-6583.



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