PCARA Update

Volume 3, Issue 6 Peekskill / Cortlandt Amateur Radio Association Inc. June 2002

Field Day and Funding — KB2CQE

It's never too early to start thinking about and planning for Field Day. This year Field Day will be held on Saturday-Sunday June 22-23, once again on Bear Mountain. Last year we had a great time and it was an excellent learning experience. Anyone wishing to take part in planning PCARA's Field Day 2002 activities, please come along to our June 2nd monthly meeting or contact FD coordinator Bob, N2CBH.

Tickets are still being raffled off at PCARA events for a chance of winning a brand-new Yaesu FT-1500M VHF mobile rig. Tickets will be available for a donation of $5.00 each.

Hope to see you all at the monthly meeting and at Field Day on Bear Mountain.

- 73 de Greg, KB2CQE

PCARA Drawing

Please consider supporting our fundraising efforts with the PCARA raffle. The raffle ticket proceeds (if all 100 tickets are sold) will just cover our largest yearly operating expense, which is the payment of our insurance fee. The club insurance is important, and without it we would be unable to hold the numerous events and activities we take part in through the year.

First prize is a brand new Yaesu FT-1500M 50 watt 2 meter mobile transceiver. Second prize is a one year subscription to *CQ* magazine. Tickets will be available at the June 2nd meeting, Kid's Day and Field Day.

If unable to make the purchase in person, please forward the funds and a note to: PCARA, PO Box 32, Crompond NY 10517. Tickets are $5.00 each. The drawing will be held Sunday June 23, 2002 at Field Day.

– Joe, KR2V

Kid's Day

Kid's Day is an operating activity designed to interest young people in amateur radio. PCARA will be setting up Kid's Day stations on Saturday June 15 at St. Patrick's School, Yorktown Heights. Entrance to the car park is off Hanover Street, just south of the Moseman Road traffic signal. Setup will begin at 12 noon, with operations commencing at 2:00 p.m. (1800Z).

Youngsters will be encouraged to exchange details including name, age, location and favorite color. Suggested frequencies are 14.270-14.300, 21.380-21.400 and 28.350-28.400 MHz.

Kid's Day, January 2001

Kid's Day is organized by the Boring Amateur Radio Club with ARRL, and BARC provides certificates for the young participants. You can find more details on their web site at: http://www.jzap.com/k7rat.

VE Test Results

Congratulations to two more successful graduates of PCARA's 2002 Technician class. April and Adam passed Element 2 at the P.E.A.R.L. April 27 VE test session and the FCC granted their new Technician licenses on May 7 as shown below.

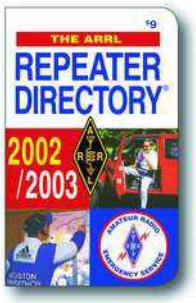
KC2JNT	April Mante
KC2JNW	Adam Schechter

The new ham experience III — KC2JDL

Welcome back to another installment. As we've seen from the last two articles, operating a ham radio is more than a little more complex than using a cell phone (and I haven't seen anybody offering free minutes with the purchase of a heavily subsidized ham radio lately, have you?). Still, an understanding of the technology and the operating protocols is important to both the new and experienced ham operator.

Having said that, let's start this month with a little light housekeeping.

New Ham Updates and Amplifications



Update: As I noted in last month's column, a standard source of information on repeaters is *The ARRL Repeater Directory.* Since last month, ARRL has published the new edition for 2002/2003 (pictured to the right). The price is still a value-packed $9, but it has a much more attractive cover.

Amplification: Following up on last month's discussion of how to make contacts on the air, our intrepid editor (who actually reads every word in *PCARA Update*) has suggested that I add a few words about initiating contacts using simplex. Quite simply, there are a number of frequencies set aside as "calling frequencies" — not quite a party line, but similar in intent. These frequencies are used to establish contact, and then the QSO can be moved to a clear frequency (allocated to that mode of radio communication) to continue the contact. The calling frequencies in the VHF and UHF bands and their intended use are listed in the table that follows.

So, while we're on the subject of calling frequencies, let's go into to a broader discussion of band plans and what they are.

The Man's Got a Plan

Regardless of the type of ham license we have, the exams always cover a little bit about frequency allocations across the ham bands. Most of what we studied is related more to which class of license has privileges across what frequencies. You can download black and white or color versions of ARRL's U.S. Amateur Frequency Allocation chart at this address: http://www.arrl.org/FandES/field/regulations/bands.html .

This is part of the band plan, which sets forth guidelines for what type of communications are allowed within each of the frequency bands (and not just for amateur radio communication – these allocations cover all types of radio modes).

IARU/ARRL VHF/UHF Calling Frequencies

Band	Frequency MHz	Frequency Use
6 meter	50.090	CW calling (IARU)
	50.110	SSB DX calling
	50.125	SSB calling (ARRL)
	50.200	Meteor scatter (IARU)
	50.620	Digital Packet calling
	52.525	National FM Simplex
2 meter	144.100 144.110	CW calling (ARRL)
	144.200	SSB calling (ARRL)
	146.520	National FM Simplex calling (ARRL)
1.25 meter	222.100	CW/SSB Calling (ARRL)
	223.500	National FM Simplex calling
70 cm	432.100	CW/SSB Calling
	446.000	National FM Simplex calling

Sources: ARRL Operating Handbook, ARRL Ham Desktop Reference, ARRL Repeater Directory, ARRL FCC Rule Book.

As we know, aside from the more familiar phone (voice) and CW (Morse Code), there are a number of different modes available – packet, slow scan TV and several others. One of the reasons for a band plan is to keep some order in the radio frequency by assigning certain frequencies to certain types of communication. Without such a plan, the radio spectrum would be in a state of anarchy.

The FCC rules set aside certain bands for certain communication modes. However, these rules are not comprehensive and don't cover the entire radio frequency spectrum. The allocation of the remaining frequencies to various modes is done by agreement among the band users. The ARRL codifies the agreements, which are guidelines.

Given the range of frequencies and modes available, it isn't possible to reproduce the entire band plan in the *PCARA Update*. But to give you a flavor of how detailed the band plan is, the table below shows how the 2 meter band is organized.

Aside from the familiar CW and phone modes, the band plan shows the repeater input and output frequencies (remember from last month – repeater input and outputs pairs on the 2 meter band are spaced 0.6 MHz apart). There are also allocations for beacons, experimental modes, and simplex operation. The band plan allocations for the other bands are similarly complicated and detailed. I will leave it up to you to do a bit more digging with the resources that follow below.

U.S. Band Plan for 2 Meters	
Frequency	**Allocation**
144.000-144.050	EME (CW)
144.050-144.100	General CW and weak signals
144.100	CW calling frequency
144.100-144.200	EME and weak-signal SSB
144.200	National SSB calling frequency
144.200-144.275	General SSB operation
144.275-144.300	Propagation beacons
144.300-144.500	New OSCAR subband
144.500-144.600	Linear translator inputs
144.600-144.900	FM repeater inputs
144.900-145.100	Weak signal and FM simplex (145.01,03,05,07,09 are widely used for packet)
145.100-145.200	Linear translator outputs
145.200-145.500	FM repeater outputs
145.500-145.800	Miscellaneous and experimental modes
145.800-146.000	OSCAR subband
146.010-146.370	Repeater inputs
146.520	National FM simplex calling
146.400-146.580	Simplex
146.610-146.970	Repeater outputs
147.000-147.390	Repeater outputs
147.420-147.570	Simplex
147.600-147.990	Repeater inputs

Source: ARRL, http://www.arrl.org/FandES/field/regulations/bandplan.html

My Old Man Said Follow the Band...

It should be noted that this band plan applies in the United States. While this plan generally overlaps with the band plans put forth by other countries' sanctioning agency, there always tends to be a few areas where there are small differences in the band allocations.

Here is a link to ARRL's summary of the band plans from 160 meters all the way up to 10 GHz.

http://www.arrl.org/FandES/field/regulations/bandplan.html

ARRL's "Considerate Operator's Frequency Guide" — which covers band activities for HF only — can be accessed at: http://www.arrl.org/FandES/field/regulations/conop.html

More detailed information can be found in the *ARRL Operating Manual*, *ARRL Repeater Directory* (see above), or the *ARRL FCC Rule Book*.

A final note – in the case of an emergency, being able to communicate in any mode on any available frequency takes precedence over the band plan allocations and guidelines. It also takes precedence over the ham radio operator's license class and privileges.

The Big Finish

When I started to write this month's column, my intention was to talk about digital modes, particularly PSK31. I seem to have been sidetracked with a discussion of band plans – perhaps a little dry, but still an important part of the ham radio hobby. Next month, though, I'll try not to get sidetracked and cover digital modes.

I seem to be mentioning the American Radio Relay League (ARRL) often in my articles. If you are not familiar with this organization, it is the national association of amateur radio operators in the United States. From their web site (http://www.arrl.org) :

"Today ARRL, with approximately 163,000 members, is the largest organization of radio amateurs in the United States. The ARRL is a not-for-profit organization that:

- promotes interest in Amateur Radio communications and experimentation
- represents US radio amateurs in legislative matters, and
- maintains fraternalism and a high standard of conduct among Amateur Radio operators.

I encourage every ham radio operator to join ARRL. Annual membership includes access to a wide range of technical and operating information on their web site and a subscription to the monthly QST journal. If you are not currently a member, I suggest that you contact our secretary-treasurer Joe KR2V (email: kr2v@arrl.net) to join. PCARA receives a "bounty" on all new ARRL memberships – helping to offset our expenses.

As always, I welcome your questions or comments (pro and con). And if there's a topic that you'd like to see covered or a question that you'd like to have answered, let me know – send an e-mail to kc2jdl@arrl.net. Q&A's are always fun and a way to stretch the wrinkles out of the cranium!

(Thanks to Malcolm NM9J for the new photo!)

– 73 de KC2JDL, Bruce

(...and thanks to Bruce and our other *Update* contributors this month for filling the pages – NM9J)

PCARA Officers

President:
Greg Appleyard, KB2CQE kb2cqe@arrl.net
Vice President:
Bob Tarsio, N2CBH n2cbh@arrl.net
Secretary/Treasurer:
Joe Ellman, KR2V kr2v@arrl.net

Special Event Station

On Saturday May 4, PCARA members gathered at the bottom of Perkins Memorial Drive waiting for the gate to open. Ranger Andy came by around 8:30 a.m. and the party proceeded through the gate to the summit of Bear Mountain, ready to commemorate PCARA's second anniversary.

Three Honda CR-Vs (Cortlandt Radio Vehicles) with N2HTT, NM9J and KR2V/KC2IDN ready to ascend Bear Mountain.

Three stations were set up with simple wire antennas suspended from the trees, using the special event callsign **W2Q**. Mike, N2HTT had his battery-powered Yaesu FT-817 feeding an inverted-V dipole on 20 meters, but experienced difficulties with bright sunshine washing out the computer screen for PSK-31.

Mike, N2HTT devised this portable darkroom to see his computer screen in the bright sunlight.

Will, KC2FYY brought along his Icom IC-706MkIIG plus 12 volt battery. This was running into a half-size G5RV antenna on 15 meters and 20 meters.

Mike, N2EAB had his kit-built Elecraft K2 transceiver running on 40 meters into a full-size G5RV antenna. This set-up was shared with Bob, N2CBH, who had brought along a fully home-brew vintage QRP station with crystal controlled CW transmitter and direct conversion receiver (see following article).

Bob, N2CBH and Mike, N2EAB operate the 40 meter QRP station while Bruce, KC2CXY and Monica, KC2IAY look on.

Clint, KB2ZRJ set up a station on 6 meters, while John KA2TMU set up on 2 meters. Joe, KR2V had intended using his FT-817 with a brand new Cushcraft Ringo vertical antenna for 10 meters, but after assembly, the MFJ antenna analyzer showed an intermittent high SWR, so 10 meter operation was postponed.

Clint, KB2ZRJ and Greg, KB2CQE admire the six meter antenna

The operators on 20 and 15 meters concluded that running a 5-watt low power special event station with a low-gain antenna can be tough going — even from the top of Bear Mountain at 1284 feet above sea level.

Nevertheless, plenty of contacts were made, with the best QRP results coming from 40 meters. Thanks to everyone who came out to set-up and operate. For those who contacted the **W2Q** station, certificates are available by sending a large SAE to PCARA, PO Box 32, Crompond, NY 10517.

— NM9J

My First HF Rig — N2CBH

This month I decided to take a break from the rigors of specifications and design to write about a personal experience in ham radio. When I was first licensed back during the last century (1980) I didn't get on HF right away. I came in as a General class licensee but only operated 2 meters for the first couple of months. I decided that I wanted to get on HF but couldn't afford a real factory made rig. I began to thumb through some of my boss's old *QST*s and found a 1967 Doug DeMaw article on how to build a QRP CW transmitter. It was only a transmitter but this was OK because I already had a receiver, a Hallicrafters SX-101. The SX-101was a pretty good receiver for its day.

Hallicrafters SX-101

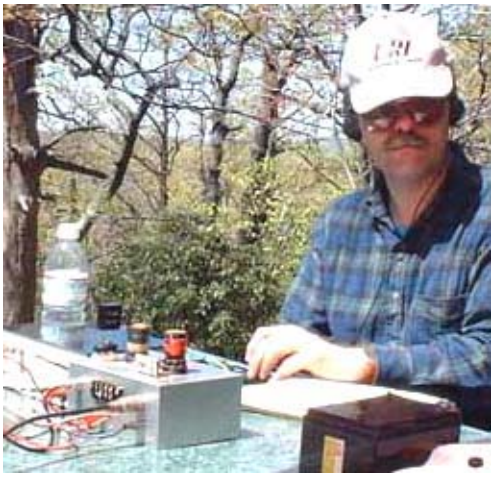
Back to the transmitter, it was a two-transistor crystal controlled design with plug in coils. OK, now I was hooked. I have to build this thing. I had virtually everything I needed on hand as I worked in a place that was pretty well stocked with parts for building stuff. I worked for WLNA/WHUD in those days and my boss; K2HQV was an avid builder of everything electronic. With a little encouragement from him, I was off to a good start. There were a few things I didn't have though. The design called for two plug-in coils with one-inch diameter coil forms. You could wind 80 and 40-meter coils for this project. I opted to wind 40-meter coils as I had only a 40-meter crystal. Anyway, I searched all over the place and couldn't come up with anything to use. Then I began to think, in the old days they used to use oatmeal boxes to wind coils. Well, these are a little big and frankly I like oatmeal but not that much! It got me thinking that some other type of food container might do. One night I began to scan the cupboard at home for a likely candidate. I spied a couple of Herb Ox bouillon cube containers. Bingo! These were made of heavy cardboard and a quick check of their diameter revealed that they were just one inch. I was all set. I wound the coils and mounted them to some old octal tube bases. The rest of the construction was pretty straightforward. I had to fashion a heat sink for the final. I used a couple of pieces of angle bracket with holes cut in just the right places.

Once the unit was wired and checked, the smoke test was next. I connected the unit to a variable supply that we had in the shop and to a dummy load. After some fiddling with the tuning controls and resoldering a misplaced component or two, the little transmitter came to life. OK, I was ready to take on the world! I brought the transmitter home and connected it to a waiting 40-meter dipole and tuned in the receiver and started to pound CQ CQ CQ de N2CBH. Well, I must have called CQ for about three weeks and was about ready to call it quits when I actually heard my call sign come back. Was I imagining this or was it some strange propagation effect? No, someone actually answered my CQ. I worked a station some place in upstate New York and then called CQ again. Another answer, this time from Ohio. Wow! This thing really works! I think I worked another three or four stations that afternoon with absolute confidence that I had constructed the best little transmitter that no money could buy.

"CQ CQ CQ de N2CBH"

Several months later I was able to scrape up about one hundred dollars to buy a used factory made rig. I think this was an all tube National NCX-3. The National rig is a story for another day but I can tell you that I never had the thrill with any other rig such as the one that I built and actually made contacts with. Before the job at the radio station I hadn't really ever built anything. It starts with the first project. Perhaps you will get the chance to build something. Look through some of those old *QST*s or the ARRL Handbook. I'll bet you'll find something you can tackle. You don't have to start with an all band transceiver. You can start with something simple like a small 12-volt power supply or a kit from Ten-Tec or MFJ. Don't forget to ask for help. Many of us in the club have built projects big and small and we will be glad to help you get started.

Here is an update on the little "Herb Ox Special" transmitter. I used it during our QRP Anniversary event a few weeks back along with a more recently constructed home brewed direct conversion receiver. I was able to make about 5 contacts with this 22-year-old classic accompanied by its 10-year-old brother!



Bob, N2CBH, keys his homebrew QRP transmitter at PCARA's 2nd Anniversary Special Event Station.

-73 de N2CBH, Bob

Peekskill / Cortlandt Amateur Radio Association

Information/Fax line: 914 737-0348
E-Mail: w2nyw@arrl.net
Web site: http://www.pcara.org

PCARA Update Editor: Malcolm Pritchard, NM9J
E-mail: NM9J@arrl.net
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
N2CBH:	448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sun June 2: June meeting, 3:00 P.M., HVHC.
Sat June 15: Kid's Day: St. Patrick's School, Moseman Road, Yorktown Heights. Setup starts 12 noon.
Sat-Sun June 22-23: Field Day, Bear Mountain.
Sun June 23: PCARA raffle drawing at FD.

Hamfests

Sat Jun 1: Bergen ARA, 8:00 a.m. Westwood Regional High Sch, 701 Ridgewood Rd., Washington Township NJ.
Sun Jun 2: WECAFest 2002, 8:00 a.m., pool parking lot, Saxon Woods Park, Mamaroneck Ave., White Plains, NY. (Hutchinson Parkway exit 23).
Sun Jun 2: Newington AR League, Newington CT.
Sun Jun 9: LIMARC, 8:30 a.m., Briarcliffe College, Bethpage NY.
Sat Jun 15: Raritan Valley RC, 7:00 a.m., Columbia Park, Dunellen , NJ.
Sun Jun 30: Hall of Science ARC, 9 a.m., Flushing Mdws, Queens, NY.
Sun July 14: Sussex County ARC, Sussex Co Fairgrounds, Augusta NJ.

VE Test Sessions

Jun 1: Candlewood ARA, Saint Paul's Church, Brookfield CT. 11:30 a.m. Contact Frank R Sileo, 203 438-0218.
Jun 1: Bergen ARA, Westwood Reg. HS, 701 Ridgewood Rd., Washington Township NJ. 8:00 a.m. Contact Donald C Younger, 201 265-6583.
Jun 2: Yonkers ARC, Yonkers Police Dept., 1st Precinct, East Grassy Sprain Rd, 9:00 A.M. Contact: Daniel Calabrese, 914 667-0587.
Jun 8: Northern NJ VE Board, Union County College, 1033 Springfield Ave, Cranford NJ, 8:00 a.m. Contact Eldred A . Moore, 732 819-0678.
Jun 13: WECA, Fire Training Center, Dana Rd., Valhalla NY. 7:00 p.m. Contact Sanford Fried, 914 273-2741.
Jun 17: Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, NY 10025, 6:30 PM. Contact Alan Croswell, 212 854-3754.
Jun 21: Bergen ARA & Fair Lawn RC, Fair Lawn Cultural Center, 12-56 River Rd., Fair Lawn, NJ. 7:30 p.m. Contact D C Younger, 201 265-6583.

Peekskill / Cortlandt Amateur Radio Association Inc.
PO Box 32
Crompond, NY 10517