PCARA Update

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Times they are a changing… - KB2CQE

If you've been following the news, you've noticed that the ARRL will be petitioning the FCC to create a new entry-level license class that would permit HF phone privileges without the Element 1 Morse Code requirement of 5 WPM. The Element 1 requirement would be retained for the highest class of the proposed three class system. These changes are in response to changes made in Article 25 of the International Radio Regulations at WRC-03. The League also hopes that the reorganization would promote growth in the Amateur Service. For more detailed information on the proposal visit the ARRL website at http://www.arrl.org/news/stories/2004/01/19/1/.

We have some planning for the year ahead that we need to accomplish. Please come out and give us your thoughts and ideas! I hope to see each of you at the February 1st meeting at Hudson Valley Hospital Center.

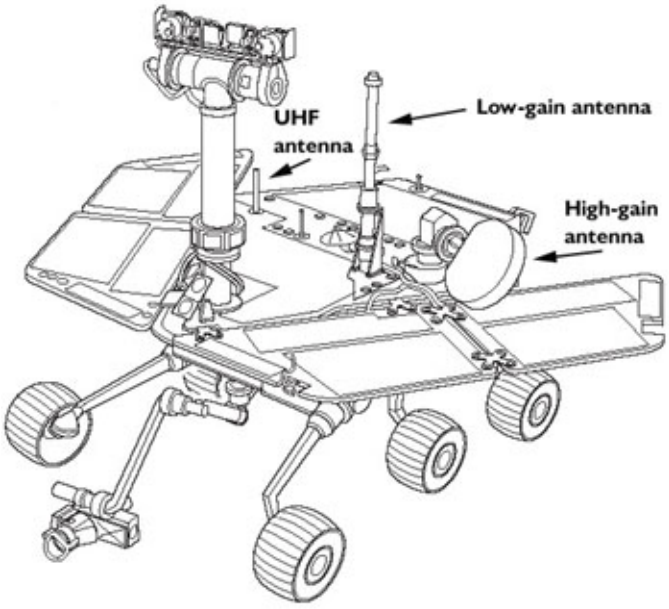
– 73 de Greg, KB2CQE

Rover's repeaters

Perhaps you have been admiring the pictures of Mars being returned by the Mars Exploration Rovers — at least until Spirit's "wake up" problems that began on January 21. At press time the second rover "Opportunity" had just landed safely. Getting those pictures and other data back to Earth depends on antennas mounted on the rover itself, on spacecraft orbiting Mars and on NASA's Deep Space Network.

The Deep Space Network has three antenna sites at Goldstone CA in the Mohave Desert; near Madrid in Spain and near Canberra, Australia. Each site has a 230 foot dish and several 112 foot dishes. They all communicate with NASA's Jet Propulsion Laboratory in Pasadena, California.

Each of the Rovers is equipped with a UHF antenna that can communicate once or twice per Mars day with the Mars Global Surveyor and Mars Odyssey orbiters as they pass overhead. The UHF link is capable of 128 kbps, and about half the total data will be relayed via these orbiters. Remaining data will be transmitted direct from rover to Earth using the rover's omnidirectional low-gain antenna or the high-gain antenna. For more information see: http://marsrovers.nasa.gov/mission/communications.html.



Antennas on NASA's Mars Exploration Rover. The UHF antenna is for 'local' communication via Mars orbiters as they pass overhead. The high gain antenna can be used for direct X-band communication with Earth at 11 kbps. [Information from NASA.]

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Antigua trip - W2CH

About a week before our recent vacation — "holiday" as the British say — to Antigua, I remember having worked V26B, "Team Antigua", during the CQ SSB Zone Contest on 10 meters. So I thought of contacting a team member about operating ham radio there. Looking up V26B on QRZ.com, I saw that there is an email address for Mike, KA2AEV, who lives nearby on Staten Island. I sent him an email, asking about licensing and operating in Antigua. He replied and told me about operating there, including some of the hams on the island and how to go about obtaining a reciprocal license. Mike also put me in touch with an Antigua ham, Alan Scholl, V21BF, whose brother, Leslie Scholl, is the Evening Manager at the Sandals Resort, where we would be spending our vacation. This seemed helpful for obtaining permission to operate and with setting up antennas.

Antigua is located in the middle of the Leeward Islands, in the Eastern Caribbean. The islands of Antigua and Barbuda make up an independent state within the British Commonwealth.

Mike and Alan gave me information about the Telecommunications Officer in Antigua, who I would need to see about obtaining my Antigua license. I did send an email to the T.O., Mr Eustace Phillip. He replied that I could see him at his office after 10 AM, on Monday. Actually we arrived in Antigua Friday afternoon, January 9, 2004, however, it was too late to go to his office then and we waited until Monday. (One could apply for the license before going to Antigua, but I did not have time to do that.) So Monday morning we went to his office, after finding our way in St. John's, the capital of Antigua. He only requested a copy of my U.S. ham license, and issued me the call, V25CH. (The V25 and V26 call letter series seem to be for non-residents. The Antiguans use V21—). But first we had to go over to the "Inland Revenue Office", a few blocks away, to pay my license fee of $25.00 East Caribbean, which is $9.40 U.S. I handed in a letter from Mr Phillip, authorizing me to an Antiguan Amateur Radio License. I paid my fee and returned to Mr. Phillip's office for my license certificate.

As it turned out I did not require any help setting my station up on the balcony of our room. There were power outlets and room on the balcony for my dipole antennas. Nobody objected to my operating there, and I received no complaints about being on the air. The photographs show me on the air and what the balcony looks like. I was mostly on 10, 15 and 17 meters, operating a few hours or so each day from Monday until Friday, the day before we returned home from Antigua.

Ray W2CH, operating as V25CH from Antigua.

For a rig I used my FT-897, including the Yaesu tuner and power supply. I had no problems with the equipment. Sometimes I had to move the dipoles around for the best tuning. When I was on the air for while, I usually was posted on the DX Packet Cluster, and there was a small "pile-up" on me. It was nice to be on the "receiving-end" this time. Probably it would have been busier on the weekend or during a contest. I did manage to make 186 contacts while operating there. I mostly worked US stations, 37 states and some with Canada. I did get a call from the Azores and worked one Slovaka. I received a call from a station on the Big Island of Hawaii. I also worked Cuba, Mexico, Brazil, and Venezuela. I had heard a ZS on 15 and a ZL on 10 meters when I first listened over the weekend before I obtained my license.

Yaesu FT-897 transceiver

One of Ray's dipole antennas hanging from the veranda at the Sandals Resort in Antigua. [Pictures by Ray & Marylyn]

When I listened in the morning hours, after sunrise, I did not hear much activity. The same could be said for after it got dark. The propagation on the bands was changing from time to time, and I switched bands as necessary. Many stations said my signal was quite strong for using dipole antennas. The audio reports were good too. I did work several stations more than once on different bands. For example, I worked Lou, W2BIE, on Long Island, on 10, 15 and 17 meters, on different days. I did speak to Alan Scholl, V21BF, on the phone about Amateur Radio activity in Antigua. He said there are about 30 hams there, and The Antigua & Barbuda Radio Club meets every Tuesday night at 7:30PM at the Antigua State College. Alan told me that most Antiguan hams do not have radio equipment, but they are working on a grant from the government, to buy equipment. This is why Antigua is probably not heard from too often. There are visitors in Antigua now using calls V25A and V25YL, at another hotel. Alan said they have an IRLP simplex set-up, on 147.555 Mhz with a CTCSS of 103.5, whose node number is 7200, with a call sign of V21ARC. They plan to have a repeater on 146.940 MHz. I did not hear the IRLP frequency while I was there.

Since we have returned from Antigua, I already have received QSLs from some of the stations worked from there. I am presently looking for a QSL card to send to them in reply.

Now looking back on this "mini-DXpedition", it was fun, even when my baggage was charged extra on the way back. The ham equipment weighed about 30 pounds! I probably did bring more items than were necessary, but that's playing it safe. Needless to say the weather was sunny and warm! It was an enjoyable experience.

— 73 de Ray, W2CH/V25CH

Building the KX1 - N2HTT

I have actually built quite a few kit transceivers, when I think about it. In the late 80's I built a Heathkit HW-9, with all the WARC bands. That one didn't work at first – I had cracked the slugs in the tuned coils during the alignment. I recall getting new parts from Heath, replacing the bad ones, and getting the rig going. That rig had a bad end, but I'll leave that story for another article.

A decade later, I built a Wilderness Sierra and two band packs from a kit. This is a delightful radio that is still in service today. One of a group of QRP rig kits that were current around the late 90's, the Sierra featured very low current drain, low weight, a relatively compact form factor, and lots of cool add-ons like a noise blanker and memory keyer. This kit was pretty straightforward to build, and the Sierra went on the air right after being built.

I recently had a brief fling with re-packaging a 40m RockMite built by someone else, and adding a surface-mount audio filter board to it. The surface mount work was challenging and new to me, but most of the project was mechanical, fitting the RockMite to the new enclosure.

Elecraft

The kits produced by Elecraft have always appealed to me: world class design and finish in a kit-built radio, QRP or QRO take your choice. Their K1 transceiver shares a lot of radio DNA with my Sierra, but has a lot more "user interface" — neat, but aside from more bands, not different enough from the Sierra to justify the expense. When I think about replacing my main bench rig (a venerable Icom 735 with a tendency to crowbar off if the SWR goes much above 2:1), the Elecraft K2 with the 100w option seems very appealing – but that's about $1000 worth of radio and a month or so of labor, and the 735 is still running...

Elecraft KX1 multiband CW transceiver.

But when I saw an ad in *QST* in October 2003 for the Elecraft KX1, it was a case of instant and irresistible radio lust. I simply had to have one. Luckily, Christmas was just around the corner. My family is long resigned to giving me radio stuff they don't understand for Christmas. Without even waiting to consult with the

Christmas elves, I placed a pre-order with Elecraft immediately. No telling how stock would hold out on a radio this cute and I figured I could always negotiate forgiveness later.

My KX1 shipped the week after Pacificon, the big West-coast QRP convention where the kit was introduced. I got it a few days later, and after opening the box to verify that it was filled with anti-static bags crammed with parts, put it away for the agonizing wait until Christmas. I ordered my KX1 with two of the three options offered by Elecraft: an add-on board that adds 30m capability, and a *built-in automatic antenna tuner*. (More on jamming all this capability into a teeny-tiny metal box later...) I did not order the matching paddle kit at that time, but eventually succumbed after building the KX1.

The Workspace

As the holidays approached, I spent the time re-evaluating my electronic bench – time well spent as it turns out. Building the KX1 demands two critical capabilities of the builder:

- Working with lots of teeny-tiny parts in a teeny-tiny physical layout.
- Being able to not fry expensive ESD-sensitive parts with static electricity. (ESD = electrostatic discharge –*Ed.*)

As a result of pre-reading the assembly manual, I went out and bought:

- a good, temperature controlled soldering station with 1/32" tip
  (Weller WES51, ESD safe, a pleasure to work with.)
- Kester #44 solder, 0.020" diameter.
- Flush cutting pliers. The more flush, the better. (Excellite makes a reasonable pair).
- Cool attachment for my Panavise that holds circuit boards by the edge.
- ESD safety ground mat.
- ESD safety wrist strap.

I already had an assortment of tiny needle nosed pliers and tweezers in my tool box. My made-over workbench now looks like this:

...and I am now equipped to work on critical subassemblies for the next Space Shuttle. I shouldn't complain though, everything fit in the teeny-tiny case, and nothing got fried.

The Assembly

My agonizing wait did not end until the second week in January, when all holiday travel was completed and time became available to work on the KX1. Construction is straightforward, but you must be ever-mindful of the tight fit of the parts in the teeny-tiny case. This aspect of construction had me constantly worried, checking and rechecking heights of components above the boards and trimmed lead length. You don't find out if it will all fit until you are nearly done, and the suspense was killing me.

I have heard the KX1 described as not a beginner's kit, and I would agree based on the physical precision necessary. You also need to know how to solder well, and this would not be the kit to learn on. Having said that though, the part count is relatively low and the assembly instructions rival the old Heathkit standard — superb. Elecraft suggests a build time of 8 hours for the basic radio — my time was about double that but I'm a fanatic for checking each solder joint as I go, and I work slowly as a result.

The kit goes together in three separate sections, with an alignment and checkout between each section: first the microcontroller, then the receiver and finally the transmitter. This is a nice approach as you can have confidence that each section is working before proceeding.

For me, the most difficult part of the assembly was installing the battery cases in the teeny-tiny case. This involved snaking wires behind plastic battery holders held on loosely by easy-to-strip tiny screws – quite a mechanical challenge.

I didn't need any of Elecraft's renowned technical support during building, as everything worked as expected, but I did send an email with some questions about using the ATU and got a very nice response back in about 3 hours — suggesting that their excellent reputation for tech support is well deserved.

The Payoff

When you are done, with all options installed you get:

- Between 3 and 4 watts out on 20, 30 and 40 meters with a 13.5V supply.
- Between 20 – 30 *hours* of operation with lithium AA cells (contained in the case!) Output is 1 – 2 watts with the batteries.
- Extended receive on SWL bands, includes USB, LSB and AM (one sideband anyway).
- Computer controlled interface, CW announcements if

you like.
- Three memories per band.
- Built in memory keyer, with two 48 character messages.
- Built-in ATU capable of directly matching random wire antennas — no feedline!
- Built-in robust paddle, for right or left handed use.
- An LED desk light. I'm not kidding...

Actually, all you have to add is an antenna — everything else is in the teeny-tiny case. The case, by the way, is only slightly larger than six AA batteries laid side by side, and about an inch thick.

I packaged up my KX1 for travel in a nice Pelican case, model 1060. The foam holds the radio, the matching key, a BNC-to-SO239 adapter, and a BNC-to-binding post adapter (for use with wire antennas). There's room for earbuds, antenna wire and even some quick reference cards on top. Here are some pictures:

Mike's Pelican case, all packed up.

Case open to show the Elecraft KX1 and contents.

Copy of Mike's license is visible through the case back. [Pictures by N2HTT]

Since this particular model of Pelican case is clear plastic, I was able to put a copy of my license under the foam liner, visible through the plastic – very handy in travel situations.

Time will tell as to how my KX1 works out for me, but my initial reactions are: terrific! This little radio is very, very portable, and very very competent – pretty much HF anywhere, anytime you like. CUL OM.

— 73 de Mike, N2HTT

The more things change...

Perhaps you've already had a look at the ARRL Board's proposals for restructuring amateur radio, as mentioned by Greg on page 1.

The first thing to remember is that these are only *proposals* and that the FCC might not accept all of them. ARRL sought feedback before arriving at its position, including an email survey carried out by our own Hudson Division Director, Frank Fallon N2FF.

Following the changes to the *Radio Regulations* made at the World Radiocommunication Conference 2003, several countries including Britain, Switzerland, Belgium, Germany and Australia have already dropped the morse code requirement for operation on the HF bands. The FCC tends to proceed at a slower pace, and it might take one to two years before a similar change occurs in the U.S.A.

One interesting aspect of ARRL's proposal is the change in emphasis for the entry-level license. The current no-code Technician license equips newcomers for VHF/UHF operation, but not much else. With ARRL's proposal, new no-code "Novice" licensees would immediately have limited access to **four** HF bands with *phone and CW/data* privileges, as well as four VHF/UHF bands. This sounds like much more fun for newcomers — especially if they live in an area with limited repeater opportunities. — Malcolm, NM9J

Peekskill / Cortlandt Amateur Radio Association

Mail: PCARA, PO Box 146, Crompond, NY 10517
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 (IRLP node: **4214)**
N2CBH:	448.725MHz -5.0, PL 107.2Hz

PCARA Calendar

Sunday Feb 1: February meeting, HVHC, 3:00 P.M.

Hamfests

Sun Feb 29: LIMARC Long Island Hamfair, Levittown Hall, 201 Levittown Pkwy, Hicksville, NY. 9:00 am.
Sat Mar 6: Splitrock ARA Hamfest, Parsippany PAL Building, Smith Field, Rt 46 at Baldwin Rd, Parsippany NJ. 8:00 a.m.
Sat Mar 13: Cherryville Repeater Assn Hamfest, North Hunterdon Regional High School, Rt 31, Clinton NJ. 8:00 a.m.
Sun Mar 14: Orange County ARC Hamfest, New Windsor, NY.

VE Test Sessions

Jan 30: Orange County ARC, Munger Cottage, Riverlight Pk, Hudson St., next to Municipal Ballpark, Cornwall, NY 12518. 6:00 p.m. Contact Ronald Torpey, (845)783-1692.
Feb 1 Yonkers ARC, Yonkers Police Dept., 1st Precinct, E Grassy Sprain Rd, 8:30 A.M. Contact: D. Calabrese, 914 667-0587.
Feb 9: Split Rock ARA, Hopatcong High School, Rm C-1, Hopatcong NJ. 7:00 p.m. Contact Sid Markowitz, 973 724-2378.
Feb 12: WECA, Fire Training Center, 2 Dana Rd., off Rt 9A, Valhalla NY 10595. 7:00 p.m. Preregister with Sanford Fried, (914)273-2741.
Feb 16: Columbia Univ ARC, Watson Labs, 612 W 115th St. New York, NY, 6:30 p.m. Contact Alan Crosswell, 212 854-3754.
Feb 20: Bergen ARA, Westwood Regional HS, 701 Ridgewood Rd, Washington Township NJ. 7:00 P.M. Contact Donald Younger 201 265-6583.
Mar 6: Split Rock ARA Hamfest, Parsippany PAL Building, Smith Field, US Rt 46 at Baldwin Rd, Parsippany NJ. 9:00 a.m. Contact Sid Markowitz, 973 724-2378.

Peekskill / Cortlandt Amateur Radio Association Inc.
PO Box 146
Crompond, NY 10517