

# Kings Point

## Amateur Radio Club Newsletter

Bringing together all levels of ham operators, both newcomers and veterans, to share in the enjoyment of shortwave radio and emergency communications

Volume 1 Issue 4

Sun City Center, Florida

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### President

Dick Bishop W4NWD  
633-7157

### Vice President

Sam Brandes N2OF  
642-8519

### Secretary

Matt Steer W3DGT  
642-9487

### Treasurer

Dick Marshall K1KTK  
633-3338

The Kings Point Amateur Radio Club meets the first Monday of the month from October through May at 3:00 p.m. in the Main Club House Craft Room

### KPARC DUES NOTICE



It is that time of the year again when it seems every day another notice greets you with the: "Your

dues for next year is due please remit; Thank you.

Our radio club runs on a very low budget. As a result of careful spending we are able to maintain our dues at the very low amount of five dollars. Therefore, the treasurer would really appreciate it if those who have not paid their 2007 dues would attend the December meeting with your five dollars in hand ready to have a "paid" added to your name on the club roster.

### Tampa Bay Hamfest

The annual Tampa Bay Hamfest will be held on December 2 & 3 at the Manatee Civic and Convention Center located at One Haban Blvd & 301/41. Kings Point and Sun City Center Radio Clubs will have tables at the Hamfest to sell some of the extra radio gear and test equipment that is in our inventories.

However, prior to the sale, members can have first crack at purchasing equipment at a very fair price. Those members interested should contact club presidents for details.

Meanwhile, for Hams looking for bargains on all kinds of stuff you are sure to find it at the Manatee Civic Center.

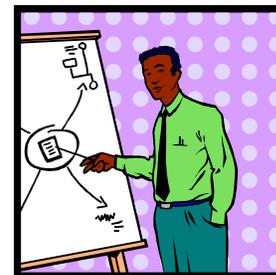


**Happy Holiday  
To All**

### From The President

There is so much going on with KPARC it is hard to know where to start, but here goes.

Last month I announced that WCI is considering a change in our Club Room location. The final decision will be made this week. We had requested the modular conference room as a new club room location, but WCI had a new idea. Since the modular room is committed to other activities, WCI ask if the Computer Club Lab Room on the opposite end of the building could serve our needs. WCI's idea is to build a communication center which will house, The Computer Club, Channel 95 and possible Channel 20 and the Amateur Radio Club. The Communications Center idea came about as part of the formation of a Kings Point Disaster Response Team which is also being formed. The KPARC being a key to the emergency communications during a storm or disaster, became an integral part of the concept. I will send out a note to you as soon as we know the final decision by WCI.



Meanwhile we have received a \$6000 grant from the Kings Point COA to upgrade our club room. This means improving our furnishings and some equipment. In light of the potential relocation we will use the funds as needed in which ever location we are in.

## From The President Continued

The potential move to the other end of the building presents some challenges with antenna mountings and feed lines. The difficulties could be offset by more space, and an outside entrance or emergency access. However, we are looking at a lot of work to effect a change so please be prepared to lend a hand as we move ahead.

We are already planning equipment layouts and furniture changes for either club room locations. We need to be proactive in our wants/needs list because we do not want to be without an operating location for too long. It can take months to get things done if outside contractors are required to install new cabinets and desktops. The same holds true for antenna relocation.

Other activities like the equipment sale in Palmetto on Dec 2, the Holiday party and the change in the January meeting date will be covered in other parts of the newsletter, so I will end my comments with a wish for each of you to have a safe and joyous holiday season,

73's,

Dick B.

## Short Vertical

By Kurt N. Serba,  
World Radio



A reader asks for Krusty Olde Kurt's Komments on the new Diamond Antenna BB7V Multi-band Vertical. This is a telescoping 22-foot vertical with, apparently, a loading coil at the base. It is specified to operate from 2 to 30 MHz, with a tuner, but without radials.

Kurt doesn't like to have people tell you that a short vertical works without radials. Short verticals have to have radials to work. The reason is simple. The maximum RF current is at the base of the antenna. Current flowing at the bottom of the antenna can't just stop there. It has to flow somewhere. If there are no radials then it will flow along the outside of your coax shield. Our coax becomes the one radial.

There are problems with this. If the RF flows on the outside of your coax you will have RF in the shack and likely have "hot" metal panels on your equipment. Worse than that, the RF resistance of a single radial is high, at least 30 ohms, probably more. This means that the efficiency will be low. Especially on the lower frequency bands. For example, on 80 meters the 22-foot vertical will have a radiation resistance of 4 ohms. The efficiency would be  $4/(30+4) = 12\%$ . So out of every 100 watts you put in to the antenna you get only 12 watts out. Actually, less than that because of losses in the loading coil.

But suppose you put in 15 radials, Now the ground loss will be about 15 ohms and the efficiency will be  $4/(15+4) = 21\%$ , still not great but twice as good as before. And the RF current will be in the radials, not on your coax. You can put ferrite beads on your coax right at the feed point to make sure it no longer acts as a radial.

The telescoping feature of this antenna with its collapsed length of only five feet should suit it for portable operation. All you have to do is ignore the instructions and put in a few radials (Kurt suggests twelve. Four will do if you are in a hurry) and it should get out just fine.

## Ladder Line Radiation

N6GK brings our attention to the article on dipoles and doublets in July *CQ*. Kurt is afraid that it will mislead and confuse beginners who read it. To start with, the definitions are wrong. Dipoles and doublets are the same thing, not separate antenna types, as any dictionary will tell you. Each has two wires inline spaced a

bit apart. You feed them in the center with either coax or ladder line.

We are most familiar with the half-wave dipole but a full-wave antenna of the same type is also a dipole, or doublet if you prefer. The length does not matter as long as the two sides are of equal length. Kurt doesn't like to dwell on definitions but just wants to make this clear. For example, the Extended Double Zepp is a dipole.

When you feed the dipole with coax you want it to be a half-wave or other odd multiple of a half-wave so that its impedance will be a close match to the (usually) 50-ohm coax. The exact impedance of the half-wave dipole depends on its height above ground but it will usually give low SWR. If the dipole is an even multiple of a half-wave or is some intermediate length its impedance will be high, maybe several thousand ohms, so the cable SWR will be high. Coax cable has substantial losses under these conditions so normally it is not used that way. That doesn't mean you can't if you are willing to take the losses. There are tables in the Handbook that let you calculate the loss so you'll know what to expect.

As explained in the *CQ* article you need a balun to match the unbalanced coax to the balanced dipole. You also can feed the dipole with ladder line and then you do not need a balun. The article makes the reason for this complicated when, in reality, it is very simple. A balun connects a BALANCED antenna to an UNBALANCED cable. A dipole and the ladder line are both balanced to begin with so there is no need for a balun.

Ladder line has the advantage of very low loss even when the SWR is high. This means that you can use it on any frequency as long as you have a tuner to convert the impedance to 50 ohms for your transmitter. So ladder line normally is used for multi-band dipoles. This makes a simple, low cost and efficient antenna for general use.

The *CQ* article states that "On higher bands (where the antenna is various multiples of the operating frequency) the feedline radiates just like its part of the antenna". This statement is wrong, wrong, wrong. Ladder line does not radiate for the same reason coax does not radiate. The two conductors of the ladder line carry identical currents that flow in opposite directions. Their fields thus cancel one another anywhere outside the line. Thus there is no radiation.

There is a misconception that high SWR on the line causes radiation. It does not. With high SWR on the line there are standing waves of voltage and current on the line. There are places with high current and others with low current. But, at any place along the line the currents in the two wires are identical. Thus their fields cancel and there is no radiation.

There is one problem with ladder line (or open-wire line as we used to call it). To preserve the balance that prevents radiation it must be spaced away from metal objects. This becomes difficult when you try to bring it into the shack. So a common solution is to change to coaxial cable just outside the building. You need a balun that will stand high SWR to do this. Most of the time the impedance at the end of the cable will be high so a 4:1 balun usually is used to get the impedance down for the antenna tuner

## IMPORTANT NOTICE

THE JANUARY KPARC MEETING  
WILL BE MOVED TO  
MONDAY

**JANUARY 8, 2007**

PLEASE MARK YOUR  
CALANDER

**KPARC—SCCARC HOLIDAY PARTY**  
**DECEMBER 2, 2006**  
**FROM 6:00 TO ?**  
**KINGS POINT CLUBHOUSE BANQUET ROOM**  
**BRING YOUR OWN**  
**DINNERWARE, SILVERWARE AND SIDE DISH**