

## Potpourri

- ☞ Saturday, November 11, 1995, is Cary Bandday. As many of you know, CARC has supported this event for the past 15 years by providing communications for the parade officials, parade marshals, and medical teams. In the morning, we assist them with the check-in and staging of the parade units. We also need several bicycle mobiles. Call Glynn, K4RKI at 467-8416 to sign up and help.
- ☞ If you lost a jacket at last month's meeting call KM4LB at 469-5129.
- ☞ For those of you who took pages of the ARES roster last month to update, please complete your edits and bring them to the meeting this month.
- ☞ I am looking for a PC to use as a LINUX platform. Minimum requirements are 386 and 8 mb of memory. Keyboard, monitor, and mouse are optional. KM4LB 469-5129.
- ☞ For Sale: Drake 2B Shortwave receiver and matching external speaker. Very good condition. \$100 or BO. Tripp, KC4QOJ, 467-1032.
- ☞ For Sale: Kenwood TS-520 SE HF rig. Includes crystals and filters, remote vfo and external speaker. \$450 or BO. Tripp, KC4QOJ, 467-1032.
- ☞ I need 4mb or more of SIP memory chips to upgrade a pc. These are the 30 pin variety, 80 ns. KM4LB, 469 5129.

## CARC Minutes

September 28, 1995

Meeting called to order at 7:33 p.m., by Pres., Bob, KB9MS. Introductions.

Treasurer's Report - Will, K4IWW

Savings: \$2,839.96  
 Checking: \$2,249.18  
 Total: \$5,089.14

Dues still being received (\$9/yr.). CARC caps still available.

**Piedmont-Coastal Repeater Network (PCRN)** - Ed, AB4S. The Trenton repeater is down. Danny, KM4OX, and Mike, WB4TQD, trying to get over to take a look at it.

**Amateur Radio Emergency Service (ARES)** - Tom, KM4LB, SET, Simulated Emergency Test is October 21. Tune in and turn out!

**Wake Digital Communications Group (WDCG)** - Lee, N4AJF. WDCG is about ready to get 9600 up and running on 440 MHz. Some tech help will be needed.

### Old Business

Motion to buy Lou Metz's (SK) Drake TR4CW/RV4C/PS. Agreed!

Officer Nomination - The Nominating Committee requested a delay of one month to resolve a problem. Granted.

### New Business

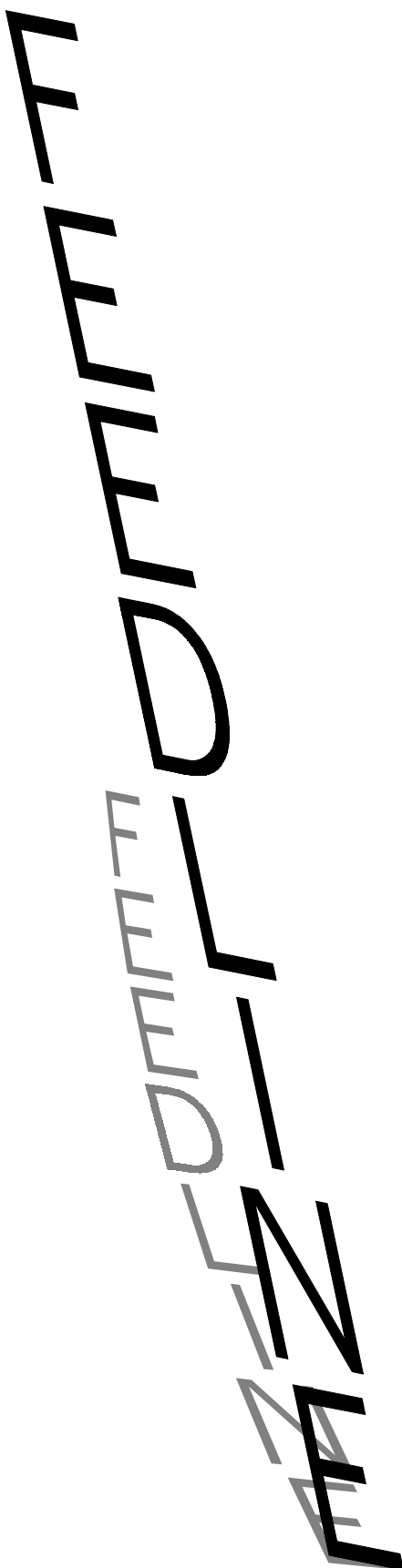
Band Day (Nov. 4). Glynn, K4RKI, to handle. Christmas Dinner. Tom, KM4LB, to handle. Christmas Project, Cary Towne Center. Yes. On CW. Herb, N4UE, to handle.

George Lemons of the National Weather Service presented Weather Spotter Training. Many CARC members and guests upgraded and became certified Weather Spotters.

n4ue

**Note:**

**This is the last Feedline for 1995.  
Start working on your 1996 contributions now!**



# Condo Communicator - Volume VI

## *More tips on operating from restricted locations.*

### SOAPBOX

You would think that the challenge in operating from restricted space would be in the HF part of the spectrum. After all, the antennas are large and you have to run a lot of power to be heard, right? Evidently, not so.

From what we've seen in the first six issues of the newsletter, putting up an HF antenna in restricted space may involve some athletic ability, such as crawling around attics, but once there the antennas seem to radiate well enough. Even when running low power (under 50 watts) to minimize RF coupling into power lines or overpowering appliances, covert operators have been making themselves heard. Of course, these stories might have turned out differently if we hadn't been enjoying the benefits of the great solar cycle 22 as it peaked during 1990 through 1992.

As Lew McCoy, W1ICP, is fond of saying, just get as much wire as possible as high and clear as possible to radiate a signal. But as we cruise deeper into a stagnant Sargasso Sea of solar inactivity, we may find that our modest crafts no longer will do the job for us (talk about stretching for a metaphor...whew).

This is when covert ops either move someplace where they can erect larger antennas or they do as the radio pioneers did and relay their messages. Back then, they sent their messages in 30 to 100 mile hops by spark gap or CW. Nowadays, the covert operator can put up a tiny two-meter antenna and use an HT and a computer to connect to local, but well-equipped, packet gateways between the VHF and HF worlds. Some communities are lucky enough to have satellite gateways, like NONBH in Denver, CO, where hams can use low-end packet stations to communicate with satellite bulletin board stations.

I think the most technical challenge facing the apartment or condo dweller isn't HF or even VHF communications: it's UHF.

That 30-meter loop strung around the bedroom ceiling will radiate through plaster and wood. But wet shingles will seriously attenuate 70 cm or shorter wavelengths if you're shooting for a satellite.

Besides, unwieldy, high-gain UHF antennas are much more difficult to install and operate in cramped quarters than a length of wire tacked up on walls. A typical OSCAR array looks like an anti-aircraft battery as it is rotated and tilted to track its targets: who has an attic big enough for that?

So, we condo dwellers could rely on two meters for our connections to better equipped stations, which can then in turn allow us to connect to other stations. Or, perhaps we will use the microwave spectrum, connecting to better equipped stations with small dishes that can be mounted temporarily on the outside of our buildings or on portable masts we can quickly set up in other locations.

Hopefully, people who do operate the UHF spectrum from portable or restricted quarters will contribute notes this coming year to the newsletter, as well as folks who have discovered various gateways in their communities. During the coming years, as the ionosphere becomes a poorer reflector of signals, it will be interesting to see what ingenious strategies covert operators come up with.

### STATION DESCRIPTIONS

Doug Heacock, AA0MS, of Lawrence, KS:

Until recently, I lived in a townhouse and couldn't put up a "real" antenna. I started with a random wire, strung from my basement operating position, up the basement stairs and around the corner and diagonally across my living room ceiling. I tuned it with an MFJ 949 tuner, and did okay with it for a while.

Later I ran coax from the basement through a couple of closets (where the holes in the

floors/ceilings would be hidden) and connected it to a 40-meter dipole wrapped around the ceiling perimeter of a second-floor bedroom. This worked quite well for me for a long time. I seldom ran more than 50 watts from my Drake TR3, and usually it was more like 10-35 watts. Never had any problems with RFI, though I mostly operated very late at night.

Alan Brubaker, K6XO, of Draper, UT has a couple of interesting descriptions.

### *The Condo Loop Antenna*

A few years ago we lived in a condo in California. The usual situation - no antennas allowed. Fortunately, each condo had a small backyard with which you could do more or less what you wished. I decided to try a loop antenna in the small backyard. One corner of the loop was hung at the roofline of the two story building, and the corners of the loop were attached to the 6 foot fence on either side of the backyard. I cut the loop for 20 meters (about 68 feet), and it just fit - it was roughly triangular, and sloped away from the building at about a 45 degree angle. I fed the loop directly with RG-8 coax with no balun. We had cable so no TVI problem. The antenna tuner in my TS930 could tune this arrangement 40 through 10 meters, and I was able to make contacts on all of those bands, but of course it worked best on 20. I used #24 speaker wire which was nearly invisible. Never had any complaints from the neighbors either, but they probably did not know that I was even on the air.

### *The Fishing Pole Portable Antenna*

About 30 years ago, a friend of mine, K6RU (sk), then W6HJT, made frequent trips to Hawaii. While he was there, he stayed at the Surfrider Hotel on Waikiki Beach, and he always got a suite on the top floor. He ran a KWM2 and a 30L1 amplifier to a "Fishing Pole" antenna. He had a deep sea fishing rig, and wound on the reel was bare copper stranded wire with a 2 pound lead fishing weight tied on the end. He hung the fishing pole out the window and reeled out the appropriate amount of wire for the band that he wanted to operate on. (He had measured

(Continued from page 2)

the wire before the trip and marked it with tape for 80 through 10 meters). He clipped the center conductor of the coaxial feedline near the reel, and he clipped the shield to a pre-cut counterpoise which was run along the baseboard of the room. The wire fishing line and the counterpoise thus formed a kind of dipole antenna which worked surprisingly well.

The combination of being 150 feet above the beach and the 600 watts was enough to overcome the deficiencies of the antenna system and he got out quite well. This approach could also work from a high-rise apartment building, if you are not on the ground floor, that is. Alan reminds us that it's pretty easy to be heard, even with low power and a less-than-ideal antenna setup, given a clear frequency and good propagation. He says to continue experimenting.

Alan continues:

I have talked to countless operators, mostly on 10 meters, who are using all sorts of indoor and clandestine antennas. I even talked to a fellow in Florida one day who was using a ground mounted DDRR and he had a surprisingly good signal. AEA and MFJ have come up with their compact loop antennas which are also useful in restricted situations.

Walt Spector, KK6NR, of Sunnyvale, California operates most of the ham bands from his condo. At the time of his first installation, he was on the board of his homeowners' association and had helped reduce some TVI from the community's hot water heater by putting some ferrite around its power line. I first installed a 120' long wire and used a tuner. It was invisible, but living on the second floor I could not get a good ground. Thus, it generated a lot of RFI and I did not use it. My second antenna was a Cushcraft Ringo half wave for 10 meters. This was cheap (\$40) and I figured it would test the waters for a more extensive system. I ran the coax off the roof and into my upstairs window. Almost no one noticed.

Buoyed by this success, I bought a Cushcraft R7. Again no one noticed any

major difference. First QSO on 40 meters was a local, second QSO was in Italy. I was now on 7 bands! I then happened to need 80 meters. I built a 130' dipole and fed it with twin lead, running the twin lead into the same window as the coax. Things were starting to get visible, but no one said anything. This antenna also seemed to work ok on 160 meters. (First QSO was Los Angeles, 500 miles.) All 9 HF bands - great! Then our complex needed a new roof. The president of the Homeowners Association asked me to take down my stuff to get it out of the roofers' way. (The timing was perfect because we needed the R-7 for Field Day.) When I went to put it all back up, I was stopped. By this time I was no longer serving on the board. There was an objection to my coax going off the end of the roof, and also my walking on this brand new and very expensive shake roof. So I proceeded to enlist the support of the two board members (of 3) who did not object to the antennas.

I wrote a letter to the board explaining how I needed the antenna for my volunteer participation in the local ARES/RACES organization (which is true - our nets are on 10 meters). I also got the president of the local organization to write a letter confirming this. The letter asked for 'temporary authorization' so as not to conflict too badly with the covenants.

The board finally approved the antenna with the provision that I run the coax through the attic and a vent pipe. (The roofer and I had discussed installing a vent pipe at a certain strategic spot...) Since I live upstairs, I could run the coax into the closet from the attic. So the R-7 is back up and I am fairly happy. But I am sans 80 and 160. My next project would be to use a remote coax switch and up something simple on 2 meters and 440, except that I will be moving soon. The house we are closing on was contingent upon lack of antenna restrictions in the covenants. Moral of the story? There are several:

- Get on the board of the Homeowners Association so that you can be a decision maker - not a complainer.
- Get active with local ARES/RACES so you have a legitimate need for the antenna.
- Be sure that appearance is kept neat. In

my case, the major complaint was about the \*coax\*, not the antenna itself.

- Use non-obtrusive wire and vertical antennas. Save the multi-element yagis and dishes for your mid-life crisis.
- Be very helpful about RFI and tell everyone how great cable TV is.
- A condo can actually be an advantage if you play your cards right. My antenna is 50 feet high with no tower.
- If you are buying a property, make your offer contingent upon the examination of the covenants for antenna restrictions.

## BIBLIOGRAPHY

Cleary, Jack, WN2Q. "Another Attic Antenna," The QRP Quarterly, July 1993, pp. 21-22

Jack describes an attic-mounted delta loop for low-angle radiation, one of the eight loops described by Doug DeMaw in his W1FB's Antenna Notebook. Jack's loop is calculated for 14.060 Mhz with the loop formula: Length = 1005/F (Mhz). Jack had a real adventure installing the antenna in the attic of his small, one-story bungalow, including a surprise descent into a closet, much to the consternation of his XYL. Fun to read and great info.

Belrose, Jack, VE2CV. "An Update on Compact Transmitting Loops," QST, November 1993, pp. 37-40.

A great article that sums up the theoretical underpinnings of small transmitting loops and which also compares the performance of different types of loops. Some of the commercially available loops mentioned are the AMA series (a German brand: Abstimmbare Magnetische Antennen), the AEA IsoLoop, and the MFJ Super High-Q.

Loops, while not comparing favorably with dipoles on 75 and 40 meters, do compare well with mobile whips, for example. Generally, the larger the diameter of the loop and the diameter of the loop conductor, as well as the greater its height above ground, the better the low-angle radiation pattern given a horizontal orientation. How about from the balcony of a 20-story building?

The article doesn't say.

(continued on page 4)

### Cary Amateur Radio Club

The Cary Amateur Radio Club meets on the fourth Thursday of the month, 7:30 p.m. in the lower level of the Christian Life Center of White Plains United Methodist Church. The June, November, and December meetings are held off-site. Call for location of those meetings. **Next Meeting: October 26, 1995.**

#### 1995 Officers

|        |                 |          |                |
|--------|-----------------|----------|----------------|
| KB9MS  | Bob Lukaszewski | 833-0199 | President      |
| KB4LFH | Mike Crowder    | 319-9556 | Vice-President |
| K4IWW  | Will Harper     | 467-0224 | Treasurer      |
| N4UE   | Herb Lacey      | 467-9608 | Secretary      |

### TECHNICAL NOTES

The ARRL has a pretty nifty electromagnetic interference pamphlet that they will send to ARRL members. It's a reprint from the February and March 1992 issues of QST "Lab Notes" and was written by Ed Hare, KA1CV, Senior Laboratory Engineer.

In addition to troubleshooting techniques (always proceed from the easiest solutions to the most difficult), hints on diplomatic dealings with neighbors, and some good theory (like distinguishing between differential and common-mode interference), Ed includes a long, long list of sources for filters and components. This looks like the EMI package to get and keep close at hand, especially if you're using indoor antennas.

EMI/RFI Package Updated: January 19, 1993 File: rfigen.txt Reprinted from February and March 1992 QST "Lab Notes" Copyright 1992 American Radio Relay League, Inc. All rights reserved. Prepared as a membership service by: The American Radio Relay League, Inc. (ARRL) Technical Information Service 225 Main St Newington, CT 06111 203-666-1541 FAX: 203-665-7531 BBS: 203-666-0578 MCI: 215-5052 Internet: tis@arrl.org antenna.

### Feedline

Feedline is a member-supported publication of the Cary Amateur Radio Club and is published monthly. Deadline for submissions is the second Thursday of the month.

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Cary, North Carolina 27511

# Feedline



Cary Amateur Radio Club  
Post Office Box 53  
Cary, North Carolina 27512

Next meeting - October 26 at 7:30 p.m.

Elections! All no-shows will be the first ones nominated!