

UP-LiNK



W2CRA

THE OFFICIAL PUBLICATION OF THE CHERRYVILLE REPEATER ASSOCIATION II, INC.

“Community Service Through Communication”



December 2000

BOARD MEETING December 6 8:00 PM

CLUB PARTY December 8 7:00 PM

LEFT COAST CONTESTING

de N5RA

Greetings Cherryville. I hope you all had a nice Thanksgiving, and are ready for the CRA Banquet. (And winter! Tho we had one light frost a week ago, it was in the 70s over the Thanksgiving weekend.)

Since Pete, NO2R, has my beam at the moment (he borrowed it for the J8 / St Vincent DXpedition for CQWW phone in October) and also because we are in a temporary rental location, I put up my R7 vertical for the CQWW CW contest. I knew that with the vertical I would not be setting any records or anything, but I was feeling at a loss for not doing any DX or contesting lately. I also have a nice hill in my backyard to my southeast (about 250 feet higher than the house) and a mountain ridge just a few miles to the east almost 1500 feet.

Contesting, and Dxing, from California is very different from New Jersey and the Northeast US for many reasons. First, most of the hams and contesters in the world outside the US and Japan are in Europe. That is a very easy shot from the Northeast. Here, we are almost twice as far from all those nice EU countries and multipliers. England is over 5000 miles and Russia 6000, with the path being very close to the pole. So that brings in Aurora flutter much more than in the eastern US. And the same goes for the Caribbean, which is 3 to 4 times as far as from New Jersey.

On the flip side, we have the Pacific on our doorstep. Hams from here have worked Hawaii on 2 meters! Have you ever fought and fought for a KH6 or KL7 contact in a pile-up? No problem here; one call does it (even with a vertical.) And the same for HC8, I remember how long it took me to get my first Galapagos contact! I worked HC8N on every band I heard him this weekend. And China BY, Malaysia 9M6, Thailand HS0, South Korea HL1, Singapore 9V; the list of new Asian countries I worked this weekend goes on. And most on more than 1 band.

We are in the process of buying a house in Los Osos, a small community on the coast. I work there also, in a company that makes power supplies for the military and commercial aviation industries. I wish you all have a great holiday season.

PUBLIC SERVICE

de WB2NQV

Public service is the motto of our club, “Community service through communications” In that light this past year, 35 Cherryville members spent a total of 585 hours, actually more but that’s what ‘s counted officially, operating at various events.

Our public service operators are as varied as the overall membership. We have one that broke the 50-hour mark (K2YSY) and a few who came close. We also have the “one eventers”, those who have their favorite event and show up faithfully every time, without even being asked. And let’s not forget the event coordinators who spend many unaccounted hours meeting with the event officials, checking out the venues, lining up the operators and of course the eventual paperwork.

The proposed events next year are the Klondike Derby in January, the March of Dimes Walk in April, the Lebanon July 4th Parade, Skylands Triathlon in September, Battle of the Bands and Jamboree on the Air in October, Blackwells Mills horse event in November and 4 horse events at the Bucks County horse park from May to November.

As soon as we have confirmed dates for these events they will be posted on the web site and in UPLiNK.

Happy Holidays to everyone.

RACES

Bound Brook Storm Report

de K2PA

At our November 10, meeting, Harry Shepherd, the Hunterdon County Emergency Management Coordinator, delivered an annotated slide presentation that detailed the many Problems that were encountered in Bound Brook, NJ in the wake of Hurricane Floyd.

A surprisingly large number of unexpected consequences were faced by the Bound Brook and Somerset County Emerg. Mgmt. Services, which proved to be largely inadequate due to the vast extent of the flooding.

The real message for us, as Ham Radio operators, is that too few of our members (41 out of more than 120) are enrolled as RACES members. RACES (the Radio Amateur Civil Emergency Service) is the only emergency communication service authorized and supported by our Federal and State governments. Each member is issued a photo-ID card, and is protected by a FEMA insurance policy when operating in an official capacity.

The unanswered question posed at the end of Harry Shepherd's presentation was: **Why is every member of CRAII not a RACES member?** When emergencies occur, every Ham in the area wants to help. However, those who are not RACES members cannot be called upon to perform more than the simplest tasks, due to the insurance risks that may be involved.

Come on folks!! Let's all live up to our club motto: **Community Service Through Communications.**

Club members interested in becoming RACES members can contact Roberto Matos at 908-788-8253 or Mike Varas at 908-806-3998.

CRA PROGRAM SCHEDULE

de Denis KA2YYB

JAN 12 "What's Happening at the ARRL"

Frank Fallon N2FF,
ARRL Hudson Division Director

FEB 9 "The Future of Amateur Radio"

Steve Mendelsohn, W2MF

MAR 12 "HAMFEST 2001"

HAMFEST CALENDAR

January 10

Phil-Mont Mobile Radio Club
Contact: Russ Stafford, W3CH
Box 88
Abington, PA 19001
Phone: 610-631-3401 (#4)
Email: russ@hdj.com
<http://www.phil-mont.org>

January 21

Great South Bay ARC (NLI Section Convention)
Contact: Phil Lewis, N2MUN
22 Belle Terre Road West
Lindenhurst, NY 11757
Phone: 631-226-0698
Email: n2mun@optonline.net
<http://www.arrlHUDSON.org/nli/hru2001.htm>

Metro 70cm Network
Contact: Otto Supliski, WB2SLQ
53 Hayward Street
Yonkers, NY 10704
Phone: 914-969-1053
Email: wb2slq@juno.com

March 17

CHERRYVILLE!

CONTEST LOG

DATE	CONTEST
12/9-12/10	ARRL 10 Meter Contest
12/31-1/1	Straight Key Night
1/6-1/7	ARRL RTTY Roundup
1/20-1/22	ARRL VHF Sweepstakes
2/3	Del Val Simplex Contest
2/17-2/18	ARRL DX Contest (CW)
3/3-3/4	ARRL DX Contest (phone)

DELAWARE VALLEY 2 METER FM SIMPLEX CONTEST ANNOUNCED!

de W2CG

(Philadelphia, PA) The Holmesburg Amateur Radio Club of Philadelphia is pleased to announce the first Delaware Valley 2 Meter Simplex Contest to be held February 3, 2001. The contest is open to all radio amateurs. Stations within a 60 mile radius of Philadelphia's City Hall will exchange their zip code

CONTEST ANTENNA

de WA2EPY

and contact number. Stations outside of the 60 mile radius will exchange their state and contact number. Stations from New York to Maryland will be able to participate in this evening event. According to HARC President Bob Josuweit, WA3PZO, the contest is designed for hams to have fun over a 4 hour period from 7-11 PM on a Saturday night. The contest allows hams to meet their neighbors on the air as well as give them the opportunity to experience something else besides repeater contacts. The 60 mile radius reaches just about all of the county boundaries surrounding Philadelphia. This also opens up an opportunity for approximately 60 clubs to participate in the event. The contest gives individuals as well as clubs a chance to participate in the event. Bonus points are being allowed for contacting club stations/callsigns. "We realize that everyone will not be able to contact WM3PEN so we're giving clubs a chance to put their club callsign on the air." This could be from a club station or an individual's home. "We don't know what the weather will be in February, but this gives everyone the chance to operate from home." Clubs wishing to enter a club callsign as a bonus point contact station in the event are asked to send a note to WM3PEN@HARCNET.ORG by December 16, 2000. A complete list of all bonus stations will be published by December 22, 2000. Contacts can be made on any 2 meter FM voice frequency provided there is no interference to repeater, digital, satellite, or other activities taking place in the two meter band. Contacts on 146.52 will not be permitted. HARC members are excited about the event. Here's a contest where they can spend a few hours on the radio, participate in a contest, and not be tied up for an entire day or weekend. Awards will be issued to individual top scores in a high and low power category. Club station awards will also be issued in the high and low power category. There is also an opportunity for Clubs to sponsor awards for their members in a high and low power categories. An award will also be issued for the highest mobile score. For further information contact WM3PEN@harcnet.org or WA3PZO@harcnet.org.

SAMPLE CONTACT EXCHANGE

1. If you live in the 60 mile radius of William Penn (Philadelphia City Hall) KB3AKK de WA3PZO Pse copy Nr.1 zip 19136
2. If you live outside of the 60 mile radius WA3PZO de N3EFN Pse copy Nr. 1 PA.
3. If you work HARC's club call WM3PEN exchange your information and make a note that it is the sponsoring club call and worth 3 points. Other club calls will be worth 2 points. All other contacts count as 1 point. Final score will be the number of contacts X the number of zip codes/states in high (10W or more) and low power (less than 10W) categories. Individual, club station, and mobile awards will be issued. Clubs can issue their own membership awards. See the contest antenna article in this newsletter.

Introduction

Here is a simple, easily constructed, cheap, small four element directive array you can build in one evening or less. Why not try it in the upcoming two meter simplex contest on February third?

This antenna is loosely based on dimensions established for typical Yagi-Uda parasitic arrays. The antenna has a theoretical 2:1 SWR bandwidth of about 4% allowing coverage of the entire two meter band. The elements have been shortened slightly to account for the loading effect of the plastic coating on the 300 ohm twin lead. The driven element is an end-fed half wavelength using a J-feed arrangement. This is taken directly from the emergency twin lead J-pole designs common in amateur literature. An RF choke is incorporated in the feedline to reduce stray currents on the coax shield due to the asymmetric feed arrangement.

Materials

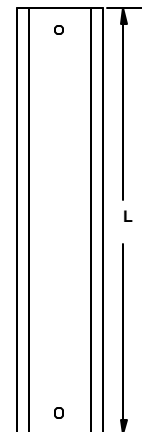
You will need about 15 feet of 300 ohm flat twin lead for the elements, a four foot insulator for the boom (it can be a dowel, wooden folding ruler, PVC pipe etc.), some push pins to attach the elements, a coax feed line with connector to attach to your rig, solder and electrical tape.

Tools

Tools needed for construction include a ruler, sharp knife, soldering iron, wire cutters (optional) and wire strippers (optional).

Construction

The parasitic elements are easy so we'll start with them.



PARASITIC ELEMENT
FIGURE 1

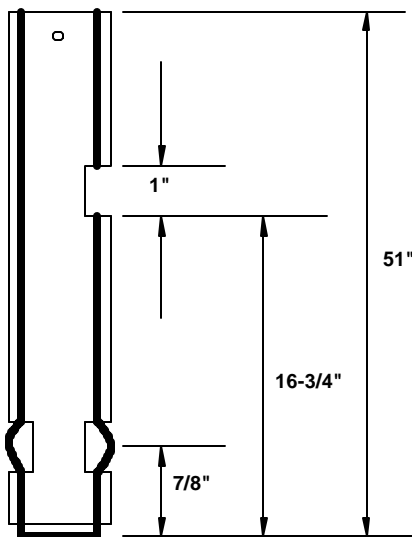
Table 1 lists the elements and their lengths as described in figure 1. Simply cut them to the required length. The ends are not soldered together.

ELEMENT	LENGTH (L)
Reflector (R)	35-5/8"
Director 1 (D1)	32-1/8"
Director 2 (D2)	31-5/8"

Table 1

Cutting within one half inch of the suggested length should cause no measurable change in performance. I drilled each end with a 1/16" diameter hole to facilitate mounting but this is optional.

The driven element (DE) requires a little more work. Start with a piece of twin lead about 52" long. Cut and strip insulation from one half inch of both wires at one end. Join them and solder. Now measure 51" from the shorted end and cut to final length. Refer to figure 2. Measure 16-3/4" from the shorted end and cut one wire of the twin lead. Measure another one inch along the element (17-3/4" from the shorted end) and cut the same wire. Remove the 1" section of wire by trimming with an xacto knife or similar tool. Now measure 7/8" from the shorted end and mark both wires.



DRIVEN ELEMENT
FIGURE 2

Measure one quarter inch above and below the first marks and mark again. The one half inch length of insulation surrounding the wires between the two outer marks must be removed to attach the feedline. I find it easiest to remove this (leaving the central portion of insulation intact) with an x-acto knife or razor blade. First clamp the twin lead with an edge facing you. Slit it lengthwise between the two outermost marks made previously. Then lay the twin lead flat and slit the plastic lengthwise just inside the wires. Carefully cut the insulation circumferentially around each wire at the outermost marks and peel away the insulation.

To facilitate mounting the element I drilled a one sixteenth inch diameter hole at the open end of the element.

I hold the elements to the boom with push pins. Figure three shows the element spacing and figure four shows a close-up of the element mounting.

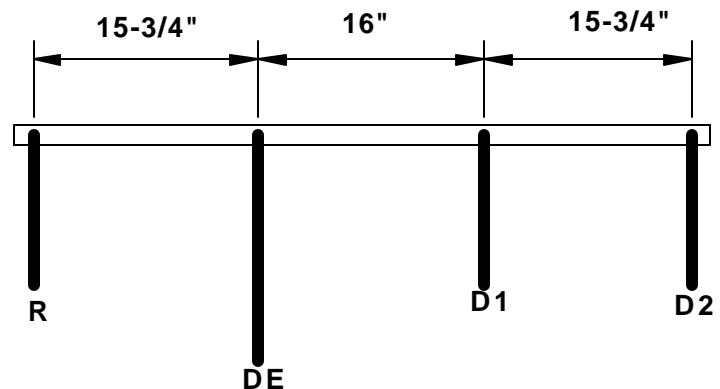
Check out and operation

The SWR of this antenna is sensitive to feedpoint location. If you construct the antenna using the dimensions shown here, you should be able to get away with attaching the coax as shown without performing an SWR check. Be advised however, if the feedpoint is changed as little as 3/8", the SWR will change from 1:1 to nearly 4:1. Table 2 lists the SWR obtained on my antenna fed at 7/8" from the shorted end.

FREQUENCY (MHz)	SWR
144	1.9:1
145	1.6:1
146	1.2:1
147	1.05:1
148	1.4:1

Table 2

I found the best feedpoint location by soldering straight pins to the center conductor and shield of the coax. The pins were pushed through the twin lead and moved up and down until the best match was found. The pins were then removed and the coax soldered in place. NOTE: The coax shield goes to the 16-3/4" side of the antenna and the center conductor goes to the 51" side. The attachment points should be equidistant from the shorted end of the element. An RF choke is wound using the coax immediately below the feedpoint by coiling five turns about two inches inside diameter. The detail is shown in figure 5. This coil yields about 200 ohms of reactance at 146 MHz effectively attenuating the stray currents. Currents can be further attenuated by winding a second choke one quarter wavelength further down the feed line (about 14").



ELEMENT SPACING
Figure 3



ELEMENT MOUNTING DETAIL

Figure 4

Additional notes

Rudimentary measurements with a relative field strength meter and a very non-ideal antenna test range show a forward gain of somewhere around 68 dBi (referenced to a quarter wavelength groundplane). Front to back ratio seems to be around 10 to 15 dB and front to side is better than 20 dB.

This antenna has not been optimized. It was designed, built and tested in less than an evening using a few “back of the envelope” calculations. No modeling was done. No adjustments to element lengths or spacing were made to try to improve performance. Shorting the ends of the parasitic elements was not tried. Quantifiable performance tests were not made. What is described here is the first cut attempt at a cheap, portable, easily built gain antenna. Perhaps someone can take this idea and offer significant improvements. Any takers?



FEEDPOINT DETAIL

Figure 5

"The world cannot continue to wage war like physical giants and seek peace like intellectual pygmies." Basil O'Connor

CRA II CLUB INFORMATION

The Cherryville Repeater Association II, Inc. is a non-profit New Jersey Corporation dedicated to Community Service Through Communication. **Meetings** are held on the second Friday of each month at **7:30 PM** at the **Flemington Baptist Church** unless otherwise announced. Visitors are always welcome! Also, everyone is welcome on the Thursday Night Traffic Net, at 8 PM every Thursday, followed at 9:30 by the Swap-Net, and the ARES-RACES net at 8:30 PM on the first Thursday each month (immediately following the traffic net), all on the 147.375 repeater.

UPLiNK

A CRA II Publication

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Many thanks to all those who have contributed articles or information for this publication, including: The ARRL, ARRL Letter, QST, CQ on-line, N5RA, KA2YYB, K2PA, WB2NQV, W2CG, and all not mentioned for their help. This newsletter is an open forum for the Cherryville Repeater Association, II Inc. and its members, of general interest Club and ham radio related interest items. The opinions contained herein are those of the authors who have contributed their work. The officers and members of the CRA II Inc. are not liable for its contents.

Articles and information are always welcome, and may sometimes be edited for content, punctuation, grammar, and newsletter space.

Deadline for submission for all issues is two weeks prior to the Board meetings.

HAPPY HOLIDAYS TO ALL

THE CHERRYVILLE REPEATER ASSOCIATION II

CLUB INFO:

Club Info Line	Website	Packet
(908) 788-4080	www.qsl.net/w2cra	W2CRA 145.51

EXECUTIVE BOARD:

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VE Testing	W2CG	(908) 788-2644	mjgrozi@postoffice.ptd.net
Field Day	N3QDC	(215) 766-8066	n2qdc@worldnet.att.net
Holiday Party	KB2RWY	(908) 253-8783	
Merchandise	N2VWL	(908) 475-4716	n2vwl@juno.com
Traffic net	N2MIF	(908) 638-6172	
Programs	KA2YYB	(908) 537-2501	ka2yyb@arrl.net
Refreshment	KB2YJX	(908) 725-0478	
Roster	W2CG	(908) 788-2644	mjgrozi@postoffice.ptd.net
Scholarship	N2ZVY	(908) 479-6346	kc2boh@worldnet.att.net
SkyWarn	N2VWL	(908) 475-4716	n2vwl@juno.com

NET SCHEDULE:

Hunterdon County Traffic and Emergency Net	Thursday, 8:00 PM	147.375
Races Net	1st Thursday, 8:30 PM	147.375
SkyWarn Net	Thursday 9:00 PM	147.015
Swap Net	Thursday, 9:30 PM	147.375
Complex Repeater Net	Sunday, 7:30 PM	147.015

MAJOR EVENTS:

W2CRA Hamfest	March 17, 2001	Talk-in 147.375
W2CRA Field Day	June 23, 2001	147.375

UP-LINK
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