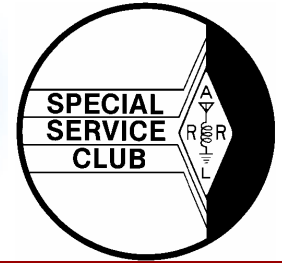




FOX CITIES AMATEUR RADIO CLUB, INC.

QSO'ER



P.O. Box 5233 Appleton, Wisconsin 54912

www.fcarc.us

• **CQ CQ CQ**

Volume 20, Issue 4
April 2007

Communications Events

Get your HT's and mobile radios ready for a busy month!

May is going to be a busy month and we need your help with communications for events! Here are the dates to mark on your calendar.

May 6, 2007 - MS Walk

May 12, 2007 - American Cancer Walk - Sole-Burner

May 19, 2007 - JDRF

For more info on these events please go to www.fcarc.us and click Calendar on the left side of the page.

FCARC Officers

- *President— Brian Long (KB9LRD) 730-8485*
- *Vice-President— Dave Sprangers (ND9DW)*
- *Treasurer— Karen Long (KC9BMH) 730-8485*
- *Secretary— Mike Smith (N9IAT)*
- *Membership Co-ord— Jim Wierzba (WB9OJE)*
- **Members At Large—**
- *Andy Palm (N1KSN)*
- *Rick Kosiorek (W9RIC) 735-9565*
- *Tony Mach (AB9IO)*

FOX CITIES AMATEUR RADIO CLUB (W9ZL)

2007 SWAPFEST - November 4th, 2007

New Location at the WAVE in Grand Chute next to the Wisconsin Timberattlers stadium.

Hamfest Chairman: Tony Mach, AB9IO - 920-722-0482

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Check out the FCARC **6 Meter Net** Thursday nights at 8 pm on 52.570 FM

Fox Cities Amateur Radio Club, Inc.
General Membership meeting
Agenda for March 19th, 2007

Board of Directors FCARC

President: Brian, KB9LRD; Vice-President: Dave, ND9DW; Treasurer: Karen, KC9BMH

Secretary: Mike N9IAT; Membership Coordinator: Jim WB9OJE

Members at Large: Andy N1KSN, Tony AB9IO, Rick W9RIC

“Tony Mach AB9IO is our 2006 “Ham of the Year”

Presiding: President, Brian long KB9LRD

Quorum count: Vice President; Dave Sprangers ND9DW

Call to Order: 7: 00 PM

Introduction of Members, Roll Call!

New Members: John WB9MVQ, Donald KF9JA, Walter WA9YRL, Brent N9BC, Nick KD8BTK, Jessica KC9DNL

Renewed Members: Len K6JDF, Bill K9RFI, Vern N9RQM, Gloria N9SVB, Karen WB9ZNA, Terry N9AOT, Chuck N9OEQ, Debbie N9VVE, Jared N0ZKC, Pat K9IK, Bill N9ZIC, Gary W9HM, Gary KC9DJQ, Tim KC9FSH, Tim AB9NB

Old Business:

Membership update Jim WB9OJE

B.) Dayton bus trip report, Jim WB9OJE

C.) Dave ND9DW web site update.

D.) Rick W9RIC VE testing.

New Business:

A.) Nominations for Executive Board office: President, Secretary, 3 Members at Large

Hal Report: Andy N1KSN

Committee Reports:

Announcements:

MS Walk Dave ND9DW, JDRF Walk Judy W9JK, American Cancer Sole-Burner Brian KB9LRD

Adjourn: (Accepting a motion to adjourn) **WB9OJE** (2nd) **N9YMC** (V: M)

• Membership Renewal Reminders

As a reminder only—following is a list of the membership renewals coming up this month and the following few months. If you have already renewed—thank you. If not, you can renew with Karen (KC9BMH) at the next club meeting.

- 3/1/2007 KC9JPX
- 4/1/2007 N9MSH
- 4/1/2007 KC9GJX
- 5/1/2007 WD9HAE
- 5/1/2007 KC9IZF
- 5/1/2007 N9TNW
- 5/1/2007 KC9DEF
- 5/1/2007 W9OVK
- 5/1/2007 KB9YUB
- 5/1/2007 KC9HLI
- 5/1/2007 N9IAT
- 6/1/2007 KC9ECV
- 6/1/2007 AA9A
- 6/1/2007 KC9HIP
- 6/1/2007 W9FBC

Elmer's Contact List

This is a listing of HAMS who are willing to help other HAMS out in special areas. Feel free to contact these fellow HAMS with any questions:

Call / Name	Specialty Area	Phone #
N1KSN– Andy	CW	720-0617
W9ZC– Bob	Tech. Code	725-7974
N9OEQ– Chuck	HF & VHF Digital Modes	788-5497
N9TNW—Bill	HF & Satellite	739-6827
N9LVS—Dan	FCC Personal Data Changes	205-4899

Have something Ham related to sell? If so, contact Mike (N9IAT) at mike@n9iat.com to arrange for it's insertion in the next issue of this newsletter. We will run it in the newsletter and on-line at www.fcarc.us

•Upcoming Events

VE Testing Dates

Interested in Amateur (HAM) Radio? Need to upgrade your license? The FCARC can help you with both of these.

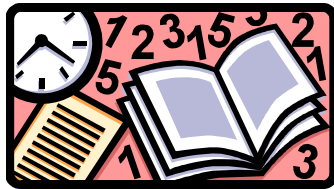
With the exception of the November test date, all testing is done at the Red Cross Building at 1302 E. Wisconsin Ave. in Appleton. Test check in is from 8:00 am until 8:30 am. The cost is \$14.00.

Here are the dates for 2007:

April 14, 2007

June 9, 2007

August 11, 2007



Thursday 6 Meter Net

Day: **Thursday**

Time: **8:00 pm**

Frequency: **52.570 FM**

If you would like to be a net control please contact Frank N9LT

•Upcoming Events

April, 16, 2007	General Membership Meeting
May 6, 2007	MS Walk
May 12, 2007	American Cancer Walk - Sole-Burner
May 17, 2007	Bus leaves for Dayton Ohio
May 19, 2007	JDRF

Wednesday 2 Meter Net

Net Control Operator schedule

April 11	KG8RF
April 18	KC9IZF
April 25	KC9FSH

Fox Cities Amateur Radio Club (W9ZL) invites everyone to tune in on Wednesday evenings at 7:30 PM on 146.76/R 100hz PL to hear the *Newsline* broadcast.

Then stick around to check into the net immediately afterwards. This is an open forum net and anything can be discussed, including; technical questions, equipment review and for swap and for sale items.

Join me in welcoming the following new members to the club!

John WB9MVQ, Donald KF9JA, Walter WA9YRL, Brent N9BC, Nick KD8BTK, Jessica KC9DNL

Renewed Members:

Len K6JDF, Bill K9RFI, Vern N9RQM, Gloria N9SVB, Karen WB9ZNA, Terry N9AOT, Chuck N9OEQ, Debbie N9VVE, Jared N0ZKC, Pat K9IK, Bill N9ZIC. Gary W9HM, Gary KC9DJQ, Tim KC9FSH, Tim AB9NB

Reporting from SUPERFEST 2007

By: Bernie – N9YMC

For us hams, visiting Superfest is always a welcoming sign that spring is just around the corner. Superfest for me is also this time where we kick off the hamfest cycle for the year. This year we had Jim- WB9OJE and I man the club table at Superfest. Of course we had flyers for the FCARC hamfest (Tony- AB9IO sent his regrets as he could not shed the exam that his prof called for that day) at the registration table and at the club table. What made this year different was that we also had DAYTON BUS TRIP flyers at the club table. Jim made sure that we talked it up! We had some interest and we handed out some flyers.

I was able to visit two of the Saturday seminars, and I am glad that I did. Both were packed with standing room only. The first that I took in was a presentation by Greg – W9DHI on the Ham Radio Deluxe program. HRD is a software control program for most radios and it also allows remote operation of your radio. Greg showed us how to connect to a radio in India and subsequently tune around the bands. The HRD also includes a direct look up in QRZ, PSK-31 program, DX propagation, satellite tracking, built-in logging and many other features. Oh, and the best feature is that it is FREEWARE for amateur use. I am using this program with my IC-706, but as it turns out I have only been using 25% of the programs capabilities. For me, this was a useful presentation and it really opened up my eyes to what is out there in software control.

Other club members seen at Superfest included; Rick – W9RIC, Judy- WJ9K, Eric- ND0L, Jon-AB9AH and Mark-W9OP. I am sure that I missed some, as it was a full house.

The second seminar that I attended was on Improving Your Communication Power by Chip-K7JA and Bob- K9EID of Heil Sound Products. This was a great seminar on audio technology. To start the event we saw a short presentation on Bob's career in sound which led to HEIL SOUND being inducted into the Rock and Roll Hall of Fame. The meat of the presentation was on our audio from our microphones and why it is so important to use the correct equipment for ham radio use. Bob went on to demonstrate the various products which his company manufactures for ham use as well as how he uses phasing in microphone and headset products. The main lesson that I came away with "cut the low end" and your signal will punch through the pile up. Hmm... is this why ladies voices get through?

The next hamfest coming up is later this month in Stoughton (near Madison) and I plan to be there. If you get the chance to go to Superfest in 08 or any of the upcoming hamfests and they have a seminar – be sure to check it out. From the road, I am N9YMC saying 73

VHF/UHF Antenna Support Structure

By: Frank Livermore, N9LT

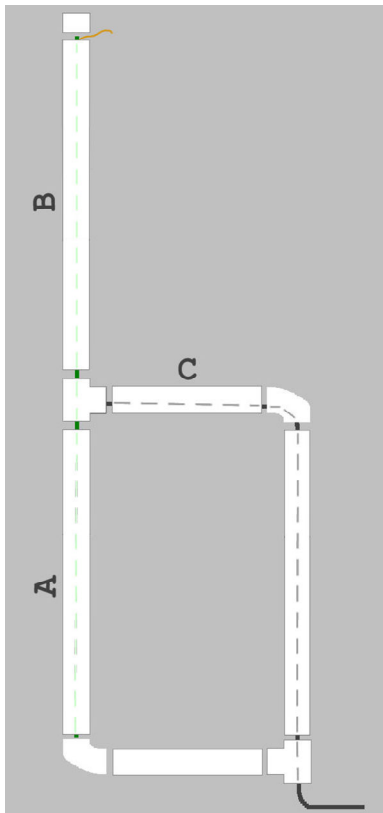


Size of a 2M Version

It's probably an understatement to say that the most common amateur home brewing project is antenna building. VHF and UHF building projects often times include antennas that are center-fed. It's to this accord that I present an all-weather-watertight-inexpensive PVC housing for any center-fed or end-fed antenna project. The enclosure will protect the antenna, antenna ends, and feed point from moisture, corrosion, and rodent damage. It will also provide posture for the feed line and of course keep the antenna positioned properly (vertical or horizontal). The shape allows for easy mounting to nearly anything. It's very durable, lightweight, and inexpensive. Some of these are still in the air after more than 10 years of service.

Background and Experiments

This design was shown to me by Mike, KC8VC (SK) in the mid-90s while we experimented with an antenna design. Many antenna experiments were put into these PVC structures with great success. Typically the largest structures were built for 6M with 10M versions being too difficult to manage due to their size even when using larger PVC diameters.



The length of "A" and "B" are typically equal to each other although a hard core experimenter may have unbalanced designs to try. Our experiments yielded a minimum length of "C" to be around $1/12\lambda$ for the designed frequency. There was little difference in extending the length of "C" beyond $1/12\lambda$. You can determine this distance in inches with the following formula:

$$C_{\text{inches}} = \left(\frac{936}{F_{\text{mhz}}} \right). \text{ See the chart below.}$$

The lengths of "A" and "B" will vary by frequency and design. Half wave dipoles are calculated by $\frac{468}{F_{\text{mhz}}}$. Below is a table of approximate lengths for each piece.

Fmhz	A and B	C
52.525 Mhz	53.5"	18"
146.0 Mhz	19.25"	6"
223.0 Mhz	12.6"	4"
446.0 Mhz	6.3"	2"

Note: No antenna designed for 220 or 440 was ever housed in this structure (to my knowledge). The equation above worked equally for 6M and 2M so there is a chance the physics are the same, or similar, but you may have to experiment more if you are building this for 220 and 440.

Construction

All of the PVC and associated fittings are 1/2 inch or optionally 1 inch if using larger diameter cables. First build the antenna. Then feed the antenna and feed line into the PVC and fittings. Finally, solder the feed line to the antenna. Test it and begin the gluing if all checks out.

The design of this structure makes it extremely durable yet incredibly lightweight. This design completes the shape of a rectangle instead of an unstable "T" shape. This makes it very rugged.

A hacksaw, some PVC primer, glue, and string are about all you need to get things started. Things to remember when building this include:

- Testing the antenna in free-space before gluing it into the PVC structure.
- Dry fit the entire structure before gluing (the PVC gluing process is permanent)
- Tie a good quality string to the top of your antenna (as shown in the picture). This will be “pinched” through the side of the PVC cap that is glued to the top and ensures that the antenna does not sag inside the PVC. Tie it on before placing the antenna into the PVC.
- Optionally route the coax in a drip-loop configuration if needed. Horizontally polarized configurations may need special attention where the coax enters the structure such as an additional elbow perpendicular to the structure.

Often times our SWR improved following the insertion of the antenna into the structure. This was a result of a rigid 90 degree takeoff of the feed line from the antenna. If your SWR is 1.8 or less in free space you may want to place it into the structure, dry fit the parts, then test it to see if it dropped to an acceptable reading. We often times improved by as much as .3 for the reflected measurement.

Bill of Materials

Band	½” PVC Pipe (.12/ft)
50 Mhz	17 ft
144 Mhz	6 ft
220 Mhz	4 ft
440 Mhz	2 ft

All designs require the following:

- 1 - Can PVC Primer
- 1 - Can PVC Glue
- 2 - 90° Elbows (**16 cents** each)
- 2 - “T” Couplers (**19 cents** each)
- 1 – Cap (**28 cents** each)
- Quality String

Cost for a 2M version (2007) is \$1.70. The string is usually free since most people have it, or something like it, around the house. The primer and glue cost were not accounted for since I already had some. The cost is not very high though and PVC primer and glue can go a very long way.

Mounting and Use

The best way to mount this structure is by way of the leg opposite of “A”. This leg only contains a feed line and is far less impacted by surrounding features such as metal objects. You may want to simply make a pigtail’s length of cable and terminate it with your favorite connector type. This would allow it to be portable (especially for 2M and up). Use a coupler to extend the length as needed for other situations such as a semi-permanent QTH antenna.

Most antennas work well in this structure including dipoles, bazookas, and maybe even J-poles with some modification to this design. Another idea is to modify this design to create two rectangles and build a Hentenna (as presented by Rick, W9RIC - Fall 2006). End-fed designs would simply require routing the feed line through the bottom piece of the structure. When Mike, myself and others worked on this we spent a great deal of time building an antenna called a T-Match. This was a center fed antenna constructed completely of RG-58 and resembled a bazooka in construction technique. But that’s another article for another day. Happy building!