



FOX CITIES AMATEUR RADIO CLUB, INC.

**QSO'ER**



P.O. Box 2346 Appleton, Wisconsin 54912

[www.fcarc.us](http://www.fcarc.us)

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Volume 21, Issue 4  
April 2008 issue

## Amateur Radio Classes Complete

Amateur radio classes have concluded with all of the students ready for an April exam. The class was a full-length course with 7 weeks of instructions of 1 1/2 hours for each session. Students were able to see various amateur gear such as radios, antennas, and testing equipment. Read more...

We also demonstrated digital modes with a laptop. Our last night ended with discussion about electrical and RF safety including lightning protection. Special thanks to Andy, N1KSN for his assistance with instruction and the many show and tells he provided.

Be sure to say hello to the new callsigns that we will be hearing soon!

### FCARC Officers

- *President— Frank Livermore (N9LT)*
- *Vice-President— Dave Sprangers (ND9DW)*
- *Treasurer—Karen Long (KC9BMH)*
- *Secretary— Mike Smith (N9IAT)*
- *Membership Co-ord—Dan Vanevenhoven (N9LVS)*
- *Technical Director—Andy Palm (N1KSN)*
- **Members At Large—**
- *Tim Hale (KC9FSH)*
- *Tom Riederer (N9UY)*
- *Tony Mach (AB9IO)*

### Inside this issue:

<i>Meeting Minutes</i>	2
<i>Membership Renewals</i>	3
<i>Upcoming Events</i>	4
<i>Radio Mobile Modeling</i>	5

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 17th, 2008**

**Board of Directors FCARC**

President: Frank N9LT; Vice-President: Dave ND9DW; Treasurer: Karen KC9BMH  
 Secretary: Mike N9IAT; Membership Coordinator: Dan Vanevenhoven; Technical Director: Andy N1KSN  
 Members at Large: Tony AB9IO, Tom N9UY, Tim KC9FSH

**“Dave Sprangers ND9DW is our 2007 “Ham of the Year”**

**Presiding:** President, Frank Livermore N9LT  
**Quorum count:** Vice President, Dave Sprangers ND9DW  
**Call to Order: 7: 00 PM**  
**Introduction of Members, Roll Call!**

**New Members: Richard Kelly KC9MYL, Harry Hartmann N9GDY**

**Renewed Members: Dave Sprangers ND9DW, Jen Sprangers K9JEN, Gary Stemple KC9DJQ, Brian Long KB9LRD, Pat LaTour K9IK, Jon Oldenburg AB9AH**

**Old Business:**

Club apparel to remain with Createch – N9LVS  
 B.) QSL Cards being narrowed – Dave ND9DW and Frank N9LT will further narrow

**New Business:**

- A.) Honorary Membership Vote – Jeff Last KC9ESR (Presenter at this year’s Awards Banquet)
- B.) Motion 03102008-1 Passes: To approve the appointment of N9AOT as a member of the Repeater Committee
- C.) Motion 03102008-2 Passes: To approve reimbursement to N9TNW the amount of \$60 for pavilion rental at Sunset Park on August 3<sup>rd</sup>, 2008
- D.) Motion 03102008-3 Passes: To have the Repeater Committee investigate the cost and time to link the club’s 440 repeater to the N9GDY repeater in Oshkosh and deploy EchoLink on the linked system
- E.) Field Day to be at the Grange Hall in Greenville, WI – already rented
- F.) NWS Tour for the club will be on June 7<sup>th</sup> – Signup sheet available
- G.) Appleton Flag Day Parade – anyone interested in organizing? April 30<sup>th</sup> Deadline, Parade June 14<sup>th</sup>
- H.) Newsletter article contributions can be made to Mike N9IAT

**Committee/Coordinator Reports:**

**WQSO Party Results**

**Hal Report: A potpourri of small ham projects – Andy, N1KSN**

**Announcements: AES Superfest March 28<sup>th</sup>, VE Testing April 12<sup>th</sup>, MS Walk May 4<sup>th</sup>, Soleburner May 10<sup>th</sup>, JDRF May 17<sup>th</sup>, NWS Tour June 7<sup>th</sup>**

**Raffle Winner**

**Adjourn:** (Accepting a motion to adjourn)      (2nd)      (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.

2/1/2008 W9IYZ  
 2/1/2008 AB9NB  
 3/1/2008 KC9JPX  
 3/1/2008 N0ZKC  
 3/1/2008 WA9YRL  
 4/1/2008 KC9HYC  
 4/1/2008 N9OEQ  
 4/1/2008 N9VVB  
 4/1/2008 N9MSH  
 4/1/2008 KD8BTK  
 4/1/2008 WB9MVQ  
 4/1/2008 N9BC  
 4/1/2008 KC9DNL  
 4/1/2008 N9AOT  
 4/1/2008 N9RQM  
 4/1/2008 N9SVB  
 4/1/2008 KF9JA  
 4/1/2008 WB9ZNA  
 5/1/2008 N9IAT  
 5/1/2008 KC9KZN  
 5/1/2008 KC9DEF  
 5/1/2008 N9TNW  
 5/1/2008 W9SBU  
 5/1/2008 K9OFU

### 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

### Nominations beginning on April 21st for the following FCARC positions:

**Vice President** - 2Yr Term - Executive Officer  
**Treasurer** - 2Yr Term - Executive Officer  
**Technical Director** - 2Yr Term - Executive Officer  
**Member At Large** - 1Yr Term - Officer (3 Positions)

Have something Ham related to sell? If so, contact Mike (N9IAT) at [mike@n9iat.com](mailto: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](http://www.fcarc.us)

## •Upcoming Events

# VE Testing Dates

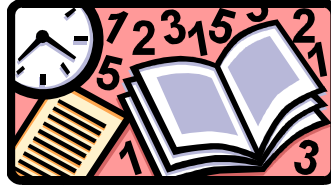
Interested in Amateur (HAM) Radio? Need to upgrade your license? The FCARC can help you with both of these.

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 2008:

**April 12, 2008**

**June 14, 2008**



### 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

### Wednesday 2 Meter Net

#### Net Control Operator schedule

April 9 W9HAN

April 16 N9SGG

April 23 KC9FSH

April 30 N9LT

## •Upcoming Events

April 12, 2008	VE Testing
April 14, 2008	Board of Directors Meeting
April 21, 2008	General Membership Meeting

### **Charge up those batteries and be ready to help in may!!!**

May 4, 2008	MS Walk
May 10, 2008	Sole burner - American Cancer Society walk
May 17, 2008	JDRF Walk

Fox Cities Amateur Radio Club (W9ZL) invites everyone to tune in on Wednesday evenings at 8:00 PM on 146.76/R 100hz PL  
Check into the Wednesday night net. 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!

### Renewed Members:

# Radio Mobile Modeling

## Radio Propagation and Virtual Mapping Freeware by VE2DBE

By Frank Livermore, N9LT

Radio Mobile is a freeware package for modeling ground wave propagation for both horizontal and vertical points of view. The vast number of variables makes Radio Mobile a very customizable solution for small business interests and for amateur radio applications. This software is a must-have for those looking to add some fun to their day by fulfilling their curiosities. The serious-minded would find this to be a valuable tool for WLAN deployment or other wide area services...even repeater/links or digipeater sites!

### Variables assigned to stations

Radio Mobile takes into account an enormous number of variables and can output almost as many other types of information. Below is a short list of some parameters that the software can include as variable conditions of a station(s) you want to model.

• Min and max frequency	• Antenna polarization	• General climate
• Vegetation density	• RF transmit power	• Receiver threshold
• Line and connector loss	• Antenna type and gain	• Height above terrain
• Surface Refractivity	• Ground conductivity	• Ground permittivity

The above considerations can be taken into account across a system-wide network or by individual stations within the network.

### Variable Minimums and Maximums

Min Frequency	<b>20Mhz</b>	RF Power Min	<b>1E-08 W</b>	Min Ant. Hgt.	<b>0.5 Meters</b>
Max Frequency	<b>20Ghz</b>	RF Power Max	<b>1,000,000W</b>	Max Ant. Hgt.	<b>99,999 Meters</b>
Min Ant. Gain	<b>-10dbi</b>	Systems Allowed	<b>25</b>	Map size Min	0.5km <sup>2</sup>
Max Ant. Gain	<b>100dbi</b>	Units Allowed	<b>50</b>	Map size Max	19,900km <sup>2</sup>

The above values were taken from version 7.x

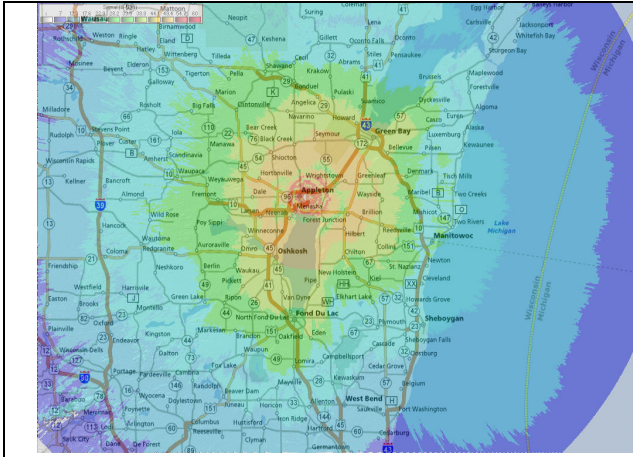
### Simple information that Radio Mobile can output

Following the installation and setup of Radio Mobile you'll enter your latitude and longitude along with the area of coverage you want downloaded (such as 80km<sup>2</sup>). Typically I select SRTM maps because of their accuracy and lack of problems during download. SRTM maps also include vegetation and other ground objects in its elevation making for an all-inclusive measurement of this variable – to some degree. Once you have downloaded the maps you are ready to analyze some simple items.

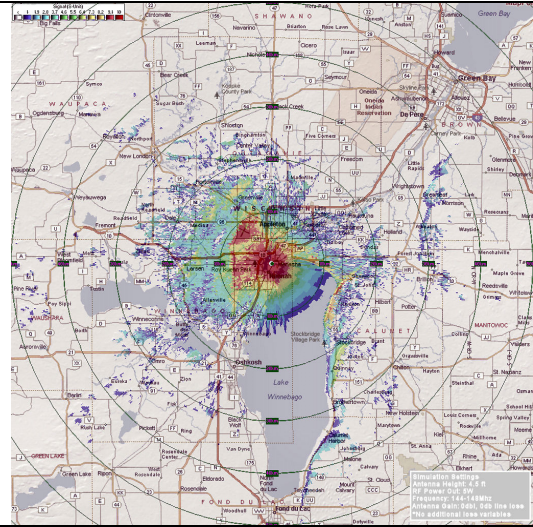
### Basic Modeling Examples

A good first type of analysis to attempt is the generation of a HAAT (Height Above Average Terrain) analysis. This will give you a text-based analysis of how your antenna sits compared to the surrounding area. Although this is useful information it's not exactly "cool". The next, and one of my favorite, is the Single Polar. Single Polar will give you a propagation analysis of your signal based on the parameters and variables you have inserted. Power, antenna height, gain, losses, and many other factors are taken into account to produce an analysis like the one shown below.

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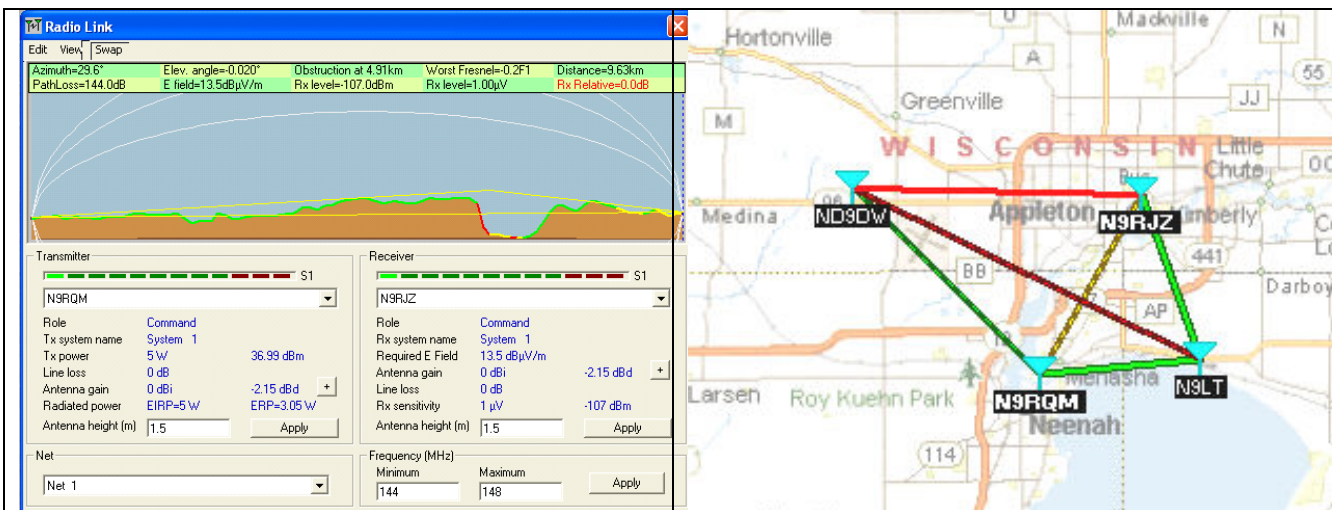
The 145.33 Repeater Coverage – Reliable signal indicated out to the green areas



Best-case coverage analysis for N9RQM in Menasha using a 0dBi gain antenna, 6' high, and 5W output

I could spend months detailing various aspects of the software but I thought it would be better to give you some starting points for your foray into this fun software. Then you can tinker by yourself and hatch your evil plans in the comfort of home ☺

1. Download and install the software per instructions. VB6 runtime is required if you haven't installed this already.
2. Enter your Latitude and Longitude or use a cursor selection to estimate the location of interest. If this happens to be hilly terrain you should try to be more accurate.
3. Edit the Networks Properties for the parameters you want to use.
4. Create at least two Units. The software wants two separate units for a network to be valid. Doing so will allow for Polar, Interference, and Cartesian analysis of a unit.
5. Have fun trying different configurations. And yes, it will do wireless 2.4 and 5.8Ghz networks as well as point to point cross-section (with fresnel zone) and overhead analysis in visual detail. Estimated signal strengths are shown and overhead link analyses are color-coded. See below.



Cross-section view of a link between N9RQM and N9RQJ (in Appleton). Notice the depression caused by the river. This setup ran 5W and the link established an

An overhead view (Link Coverage) between 4 different stations in a network. Green lines are good, yellow OK, and red being poor.