Arc Over

January, 2011

Fox River Radio League
PO Box 673
Batavia, IL
60510-0673

President's Traffic

By John Spasojevich AG9D

Welcome to the next decade of the 21st Century! It's hard to believe that it is 2011; it seems like yesterday it was 2000 and we worried about Y2K. I hope all of you enjoyed the Holidays. It can be a tough time of year and if it was a high stress time for you, I hope things are getting back to normal. January is actually a wrap-up month for the FRRL. Our new Board of Directors will take office officially at the banquet at the end of the month with the first meeting of the new group in February. Thank you to all of the candidates for stepping up to the opportunity to give back to the Club and to the Nominating Committee for their hard work. Thanks also to Larry, W9OKI for his many years of elected service to the Club. Larry will be "retiring" from the Board after the January meeting.

The 2011 FRRL Board of Directors:

President – John, AG9D
Vice President – Harry, K9DXA
Treasurer – Dean, KC9EOQ
Secretary – Ron, KC9SNI
Director – Larry, K9ARZ
Director – Chris, KC9IEQ
Director – Dick, AH6EZ
Director – Dawn, KC9LQS
Past President – Mike, K9FE

Congratulations to our two new members Ron and Dawn I think they'll make an excellent contribution.

We will be looking to our usual cycle of activities this year and we'll see what else comes along. One point of interest is that we were approached in October by Carol Rhetmeyer, Executive Director of SciTech the hands on science museum in Aurora. In a nutshell they would like for us to install an amateur radio station in the museum. This is a large project and is in the very early stages of discussion. Our interests in doing this are several. Obviously, exposing 50,000 6th through 8th graders to the hobby is good. SciTech has a partnership with Northern Illinois University which may provide an opportunity to work with older students. AMSAT is currently assisting some universities with cube sat projects; perhaps we will be able to provide a similar opportunity locally. SciTech also holds Teacher Institutes with STEM topics. Science-Technology-Engineering-Math (STEM) is the hot topic in education today. We can show the local teachers how amateur radio can be used in the classroom. All of this spells a great opportunity, one which we should not pass up. Will it be successful? We don't know unless we try. We are confident it can be done without expending club funds which makes it even better. The station would be available for members to use so it would serve as sort of a club station. The museum has activities and events which should allow time for just about anyone to get there and have some fun. Better yet, you don't have to be a teacher; the station will have enough automated displays to explain what you are doing. It's ambitious and the best chance to plant the seeds of the future. A committee will be formed to figure out the details, if you care to serve, let me know.

Planning will begin in earnest for our major events: MS Walk, Field Day, Hamfest, Canoe Race and what-

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Minutes of the Regular Meeting of the *General Membership* of the Fox River Radio League (FRRL) an Illinois not-for-profit Corporation Held at St. Rita of Cascia, Aurora, IL

Meeting Minutes December 14, 2010.
Meeting called to order at 8:06 PM by John Spasojevich – President with 65 members present.

- John AG9D welcomed all to the December meeting.
- John AG9D gave several old certificates of appreciation to Kent W9NDW
- **Secretary Report:** Bill W9WRS– meeting minutes available on Web and Arc Over. Motion to accept by Ken N9WCX, 2nd by Denny W9HI.
- **Treasurers Report**: Dean KC9EOQ. We have money.
- **Announcements –** John AG9D
  - Renew your membership by the end of January to be included in the printed roster.
  - Committee and event chairmen need to compile lists of people for certificates by January 21.

Committee Reports

Program: AH6EZ – January program will be on Circular polarization and HF propagation.
Repeaters: Dick AH6EZ – We have a new uhf antenna to replace the one on Kermit's tower.
VE Session: Doug W9RD –Next session 3rd Tuesday of January at St. Rita.
Membership: Chris KC9BKS – 198 total members for 2010, 112 members still have not renewed for 2011.
Net Control: Dawn KC9LQS – Nets averaging about 20 check-ins per week. She needs a few more net control operators.
Education: Eric AB9OS – The General and Extra level classes have been completed and several upgrades have occurred from them.
Newsletter – Tobi K9TCD – Deadline for article is the 20th of the month. Needs articles for the Arc Over.
Yahoo Group – Bill N9FD – has 85 to 87 members. Join if you have not done so.

Member Announcements

Jack K9JE – Turn in your QSL cards for the DX Bureau. Sort by country and include a copy of your QST label.

K9FE – Banquet tickets are available at the General meeting tonight. It will be held at the Omega restaurant, Rt. 59 and I-88, on 1/22/2011. Tickets will be 28.00 per person.

AG9D - There will be a class on satellite radio given on Saturday, February 19, 2011.

AG9D – There will be a build a dual band antenna class on Saturday, March 19, 2011.

AH6EZ - We have 3 radios that will be raffled at the December meeting that were donated by Kirt Shore W9KNS.

K9DXA – the next SDR SIG will be Saturday, December 18, 2010 at Rasmussen College.

AH6EZ – He has his Flex radio working on Windows7 now.

New Business

Voting was held for the positions to be filled this year after short speeches by all candidates and the results were as follows:
John AG9D – President for 2011
Harry K9DXA – Vice-President for 2011
Dean KC9EOQ – Treasurer for 2011
Ron (not sure of his call) – Secretary for 2011
Dick AH6EZ – Director
Dawn KC9LQS - Director

The January 4, 2011 board meeting will be at St. Rita of Cascia in Aurora, IL.
The January 9, 2011 General meeting will be at St. Rita of Cascia in Aurora, IL.

The February 1, 2011 board meeting will be at St. Rita of Cascia in Aurora, IL.
The February 8, 2011 General meeting will be at St. Rita of Cascia in Aurora, IL.

Motion to adjourn by Randolph W9HE, 2nd by Mart N9NTM
General meeting adjourned at 8:30 PM.

Respectfully Submitted:

Bill Stamps W9WRS
FRRL Secretary

January Program Notes

The January program will be a presentation about Elliptical polarization and myths of HF propagation. AH6EZ will share the preparation of phasing lines, shorted quarter wave transmission lines, impedance matching with 35 ohm coax, and the reception results of his 20 meter inverted vee antennas designed by EZ-NEC software and HF propagation by W6EL software.

President's Traffic (Continued from page 1)

ever else comes our way. Some of the surprises are some of our best events, like the Scout O Rama last spring. Don't forget the Chicago Marathon; we learned that it's a pretty darn good event. It's not until October, but you may want to check your calendars now!

Many of you have said you would like to try satellite operations but don't know where to begin. If that's where you are please consider coming to Rasmussen College Saturday February 19th from 9:30AM to Noon. Jeff, N9JZN and I will present a beginners discussion on how to get started. We'll cover mainly FM LEO operation and give tips on radios, antennas and software. If we have time we'll touch on SSB/CW ops. For those interested, on March 19th we'll have an antenna building session also at Rasmussen from 9AM to 1PM; we'll focus on a dual band hand held yagi. Hope to see you there.

That's it for now, Happy New Year!

Running a Ground

By Ron Jahr, KC9SNI

My 2m/70cm vertical antenna is on the roof…finally. But while I'm patting myself on the back, I recall the invested time and effort. Speaking of investment, have you priced copper wire or low-loss coax lately? Yikes! Then there's the effort. How much hacksawing is necessary until a tripod stands perfectly perpendicular on a sloped roof? More than I had imagined.

Besides all the work of installing the antenna, tripod, and coax, two other important issues had to be dealt with—grounding and transient (dare I also say "lightning"?) protection. Now "running a ground" seemed simple. That was until–pardon me–I dug into the details.

While there are as many recommendations for grounding and transient protection as there are ideas for reducing the federal deficit, several organizations have published widely recognized standards and practices[1,2]. These also cover the subjects of building power distribution protection and telecommunication (CATV, telephone, etc.) service protection. The ARRL[3] and eham.net[4] have articles specifically addressing amateur radio installations, and some equipment manufacturers provide suggestions.

What constitutes a good earth grounding system is well-defined. The more buried metal the better whether utilizing multiple, widely-spaced ground rods and/or a building perimeter ground conductor. As might be expected, however, there is no universal prescription to completely vanquish the twin threats of electrostatic discharge (ESD) and induced transients. No technique guarantees absolute protection from capricious Mother Nature. It boils down to a tradeoff between the cost and effort expended versus the incremental improvements in protection that additional steps achieve.

Even if desirable, it was infeasible (at least for me) to consider the most comprehensive schemes described in the references. I tried instead to install the essential elements that hopefully achieved my goals–a decent

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ground system and ESD/transient protection at a less-than-outrageous cost. My approach included four primary components: a ground rod array, a station equipment ground conductor, an antenna mast ground conductor, and a coaxial transmission line transient protector.

For my ground-rod array, I employed the technique described by Yaesu[5]. For base station earth grounding, they suggest driving three copper-clad ground rods in a "V" pattern with the rods bonded together at the apex of the "V" nearest the station. In my case, the place nearest both the coax feed-line entrance and my basement station was the northwest corner of the house where the electric, telephone, and cable-TV services also enter. This location also facilitated bonding the single-point ground (the rod at the "V" apex) to the adjacent house electric service ground. I used three, eight-foot rods spaced sixteen-plus feet apart. These are bonded together with #4 uninsulated stranded copper wire buried several inches below the ground.

From the single-point ground, I also ran another #4 insulated wire the short distance into my station area. Ultimately, I plan to terminate this conductor on some type of copper buss-bar, which will be used to ground all of my station equipment.

Now to the antenna, support, and feed-line. My vertical antenna is attached to a short mast in a tripod mounted on the roof [6]. Ground clamps on the mast and tripod are bonded to the single-point ground rod via #4 stranded copper wire. The coaxial transmission line from the antenna runs down the side of my two-story house into a weather-resistant metal enclosure [7]. There it connects to a gas surge protector mounted on a large copper plate, which is also bonded to the single-point ground rod. The output of the surge protector connects to another coax, which passes through the house siding and completes the transmission line to my station equipment.

Over the past few days, I have been enjoying the enhanced coverage from raising my antenna some twenty-five feet. I can now hit repeaters that had been just out of range and, of course, simplex coverage is much improved. Down the road, I think that I should upgrade the station ground conductor to flat copper strip to exploit the skin effect and provide a better R.F. ground. I will also implement the planned grounding buss-bar. I hope you find the references informative, and I welcome your comments, criticisms, or suggestions.

References

"NFPA 780 Standard for the Installation of Lightning Protection Systems 2004 Edition"
http://www.atmo.arizona.edu/students/courselinks/spring07/atmo589/articles/NFPA_780_2004.pdf

"How To Protect Your House And Its Contents from Lightning," IEEE Press
http://www.lightningsafety.com/nlsi_lhm/IEEE_Guide.pdf

"Lightning Protection for the Amateur Radio Station," by Block, W. Ronald, KB2UYT, Part 2, QST, July, 2002, pp. 48-50. Part 3, QST, August, 2002, pp. 53-55.
(These can be found as PDF documents by searching the QST Archives at www.arrl.org)

Lightning Protection post by Alan Jones (W4LGH) on July 24, 2007 and comments.
http://www.eham.net/articles/17168

"Yaesu HF/VHF/UHF All Mode Transceiver FT-897D Operating Manual," pg. 7, Copyright 2004, Vertex Standard Co., Ltd.

Antenna Photos at FRRL Yahoo Group:
Photos > Miscellaneous > Sloped roof-mounted Diamond X50

1. Weather-resistant enclosure details at FRRL Yahoo Group:
   Files > Misc > Transient Protector Enclosure.pdf

About the FRRL

The Fox River Radio League, Inc., is a general interest amateur radio club serving the central Fox River Valley area. Records indicate the club has been in existence since at least 1924, and has functioned continuously ever since. We are an ARRL Special Service Club, an Illinois not-for-profit corporation, and a 501(c)(3) tax exempt organization as specified in IRS Statutes.

We sponsor training classes for new hams, license examination sessions, an annual hamfest, and participate in various public service events. If you have a specialized amateur radio interest, chances are you can share it with one or more of our club members.

The Fox River Radio League meets on the 2nd Tuesday of every month at St. Rita of Cascia Church in Aurora. The meeting begins at 7:30 PM and includes social time, a business portion and a program of interest.

All persons interested in amateur radio are invited to attend. Families are welcome.

We hope to see you there!

License Exams

The Fox River Radio League, Inc., in conjunction with the ARRL VEC, conducts amateur examinations on the 3rd Tuesday of January, March, May, September and November at St. Rita of Cascia Church in Aurora at 7:30 PM. A special session is held at the club's hamfest, usually in July each year. No advance registration is required, but please be sure to bring your license (if you have one) and a photocopy of it, some form of photo identification and the fee of $15.00. (The FRRL receives no portion of this fee.)

The next exam session is scheduled for January 18, 2011 at St. Rita of Cascia church. Please see the frrl.org website for details.

FRRL Dues

Annual dues are payable no later than the January Club Meeting each year. New members joining during the year will have their first year's dues prorated to the nearest yearly quarter.

Regular dues are $20.00 a year, Senior Citizen dues are $12.00. Family dues are $30.00. Members can help support the FRRL Repeaters by making an annual $10.00 donation.

Check with the Treasurer for details and additional dues rates.

Nets

Net Name	Freq.	Day	Time
FRRL	147.210	Tuesday	7:30 PM Local
10-10 CW	28.150	Monday	8:00 PM Local
10-10 SSB	28.720	Monday	8:30 PM Local

Fox River Radio League
Founded 1924

Mailing Address:
Box 673
Batavia, Illinois
60510-0673

Email:
info@frrl.org

Web Site:
http://www.frrl.org

President
John Spasojevich AG9D

Vice President
Harry Jones, K9DXA

Secretary
Bill Stamps, W9WRS

Treasurer
Dean Holste, KC9EOQ

Directors:
Chris Farley, KC9IEQ

Dick Illman, AH6EZ

Larry Shaw, W9OKI

Larry Stark, K9ARZ

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FRRL CLUB MEETINGS ARE HELD AT ST. RITA OF CASCIA IN AURORA, IL, BUT LOCATION IS SUBJECT TO CHANGE. PLEASE CHECK THE FRRL WEB SITE FOR THE ADDRESS AND A MAP TO THE MEETING LOCATION.
http://www.frrl.org

Send Address Corrections to:
Fox River Radio League, Inc.
3023 Scenicwood Lane.
Woodridge, IL 60517

FRRL Event Calendar

January, 2011

FRRL Board Meeting 4
FRRL Meeting 11
SDR SIG 15
VE Session 18
FRRL Banquet 22

February, 2011

FRRL Board Meeting 1
FRRL Meeting 8

ArcOver FRRL Newsletter

The ArcOver is published monthly by the Fox River Radio League, Inc. Articles and letters are always welcome. The normal deadline for material is the 20th day of each month for the next month's newsletter. Articles can be sent by email to arcover@frrl.org or via U.S. Mail. Contact the Editor for details and submission guidelines.

Local Area Repeaters/Nets

W9CEQ—147.210 Mhz.
+600 KHz, 103.5 access tone
Owned by FRRL

W9CEQ—444.300 Mhz. **IRLP Node # 4850**
+5 Mhz, 114.8 access tone
Owned by FRRL

W9CEQ__B D-Star—442.10625 Mhz (+ 5.0 Mhz offset)
W9CEQ__C D-Star—147.225 Mhz (-6.0 Mhz offset)
FRRL Digital Voice/Data Repeaters
Contact W9XA for information

KC9OEM—145.470 Mhz. -600 KHz, 103.5 access tone
KC9OEM—444.525 Mhz + 5 Mhz, 114.8 access tone
(2 meter is primary Kane Co. SKYWARN /ARES freq)
Owned by Kane County OEM

W9DWP—Kane Co. Amateur Public Svc. Rptrs.
145.270 -600 KHz, 107.2 access tone
443.025 +5 Mhz 114.8 access tone

W9ZGP—NIARC
147.060 +600 KHz, 103.5 access tone

- Weekly ARES/Skywarn Net—Wed. Eve. at 6:30 pm local time on the KC9OEM 2 meter repeater
- Weekly FRRL Net—Tues. Eve. at 7:30 pm local time on the FRRL 2 Meter repeater.
- Monthly Simplex Net—4th Tues following weekly FRRL Net on the FRRL 2 Meter repeater.
- Illinois DStar Net - Wed. Eve. at 8:00 pm local time on the DStar 440 repeater.