

HAM RAG



Visit our website for more club and area ham information
In the Rockford area at <http://www.w9axd.org>



RARA Mission Statement

A member association with common interest of public service to the community through the use of amateur radio.

President's Log

Greetings All,

Here it is the first of April already and I don't know about you but I'm getting the itch to get outside and start enjoying some warmer weather. Along with these warmer days come events where we can use our radios to help in community events and hone our skills from the long winter months inside. I myself enjoy these events and encourage all of you to look into adding a helping hand. If you need a list of the upcoming events please contact Steve Twigg (W9SWT) at 815-289-7431. Do not forget that this also introduces members of the community to the amateur radio hobby, and the benefits and resources we bring to events as radio operators. For those of you who had the opportunity to attend the March membership meeting, we were given a great presentation by Duane Ingram, N9ZKR, on "The Quiet Sun". It was very interesting and explained things in a way that everyone could understand. If you ever get a chance to hear him speak on this topic at another venue, I would recommend you take the time and go, you will enjoy it. Your board and I have been working on the events for this year, so please stay tuned for more information as it becomes available. I will say 73 for now and hope to hear you all on the air.

Gordon Seaman, KC9NEX
2010 RARA President



April Program Highlights

The program on EZNEC antenna analysis is an introduction to computer modeling of a dipole antenna using EZNEC. The effects of changes in antenna length, and height, will be explored. Emphasis will be on initial familiarity and ease of use, and not on technically sophisticated uses of the program. Audience participation will be encouraged.

James W. Elkins, N9VJ, will lead the discussion, making use of portions of the ARRL Antenna Modeling Course. Jim studied electrical engineering at Speed Scientific School, then took subsequent degrees in astrophysics and law at Vanderbilt University, Nashville, Tennessee. He is now retired and living in India.

April 2010

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NEXT MEETING

**FRIDAY
April 9, 2010
7:00 pm**

**Presentation:
EZNEC
Program Analysis**

**By:
Jim Elkins, N9VJ**

**Location:
St. Anthony
Medical Center
Foundation Room
5666 E. State Street
Rockford, IL**



From the Vice President

I want to thank Dr. Duane Ingram, N9ZKR for his excellent presentation on “The Quiet Sun”. He had some excellent graphics and there were a lot of questions from the floor.

We have a last minute change in topic for the April meeting. Jim Elkins, N9VJ will give a presentation on “EZNEC analysis of a dipole” and talk about “STUBS”.

Kermit Carlson, W9XA, Central Division Vice Director for the ARRL, had a conflict and will be rescheduled for the June meeting. He will talk about happenings at the ARRL and changes at the FCC.

Our May meeting topic will be a presentation on GEOCACHING. It is sort of like fox hunting except for this you use a GPS unit.

Field Day scheduled for the last weekend in June, June 26 & 27 is fast approaching. I would like to encourage everyone to come out to this event, especially the new hams. Field Day weekend is a great opportunity to be exposed to several aspects of our hobby, operating, setting up a station, socializing and learning some “tricks of the trade”. No matter what your class of license, at field day you get to operate with the privileges of the highest class license in the area.

Again this year, we will present a “first contact award on the low bands” for anyone who makes their first contact at field day.

In the past, the RARA training team has scheduled training classes through Rock Valley College with limited results in that not enough students enrolled so the classes were cancelled. With this in mind, the RARA board made arrangements to get a meeting room to hold the classes. **A TECH class is scheduled for May 1 & May 8, 2010 held at St. Anthony Medical Center in Rockford.** (*This will be the last class with the current question pool as the Tech question pool will change as of July 1, 2010.*)

Don’t forget to check into the Monday night RARA Information Net at 8 PM on the 146.610 pl 114.8 repeater and check out the club website at WWW.W9AXD.ORG which has links to all of the latest happenings in Amateur Radio.

73,
Gene, KA9BOD
2010 RARA VP

UPCOMING RARA EVENTS

April 9th - General RARA Meeting 7:00 pm at OSF
EZNEC Program Analysis by Jim Elkins, N9VJ

April 27th - RARA Board Meeting 7:00 pm at OSF

May 14th - General RARA Meeting 7:00 at OSF
“Geocaching” by Dave Yanke, N9SSG, from Sycamore, IL

May 25th - RARA Board Meeting 7:00 pm at OSF

Secretary's Report



RARA Club Meeting March 12, 2010

The meeting was called to order by President Gordon Seaman, KC9NEX, at 7:03PM. There were 24 Hams in attendance.

Secretary's Report:

The minutes were published in the February *Ham Rag*. Al, KD9CA, said that there were printed copies available for anyone who wanted one. John, N9OTC, made a motion to accept the minutes as published and Tom, N9VJU, seconded the motion. The motion carried.

Treasurer's Report:

Paul, K9RNR, read the report for the period of January 25th through February 21st, 2010.

Income:	\$126.00
Expenses:	\$123.93
Net Income/Loss:	\$2.07
Ending Checking Balance:	\$1931.31
Ending Repeater Checking Balance:	\$382.95
Ending Savings Balance:	\$3214.02
Ending Total Cash on Hand:	\$5528.28

Paul said that this year's budget was \$2625.00.

Chuck, AB9KA, made a motion to accept the report as read and Jim, N9VJ, seconded the motion. The motion carried.

Old Business:

Gordy reminded all that dues are due.

Gene, KA9BOD, asked for an update from Herb, WR9H, as Club Historian. Herb responded by saying next week he would interview Gene, W9GD. Herb asked for help from members for the period 1945 to present, saying that any information would be helpful and it need not be provided as a finished document.

Gordy, KC9NEX, said that a chairman was needed for *Breakfast in the Park* and another needed for *On the Waterfront*.

Don, W9DRR, reported that we now have UHF control of the Repeater and Gordy, KC9NEX, asked Paul, K9RNR, to have the phone service cancelled since we no longer need the phone to control the repeater.

New Business:

Gordy, KC9NEX, asked how many present used the 220 repeater on a regular basis when it was functioning. No one present appeared to have used the 220 repeater on a regular basis.

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Secretary's Report (continued)

John, KA9SOG, reported on the ATV repeater adding he needed someone to help or advise him on how to repair their Duplexer. Tom, N9VJU, told him that Herb, K9AMJ, could possibly help with this and Tom gave him Herb's phone number. Al, KD9CA, mentioned that Dick, WF9J, has asked on our Monday night net on a few occasions for someone to contact him regarding Amateur television.

Gordy, KC9NEX, said "The Amateur Radio Emergency Communications Enhancement Act of 2009 - has unanimously passed the US Senate and has been sent to the US House of Representatives for consideration. The ARRL is asking its membership to contact their members of the US House of Representatives with a request to support S 1755, which is waiting action in the House Committee on Energy and Commerce. S 1755 accomplishes the same things as HR 2160. Since S 1755 has already been approved by the Senate, moving it forward in the House will simplify the process."

Steve, W9SWT, said on Saturday March 14th there will be an ARES meeting from 9am to approximately 5pm. SKYWARN net operations will be discussed and this will be a necessary seminar for anyone wishing to participate in a SKYWARN net. He said there will also be a guest speaker from WIFR TV. He mentioned there will be a \$10.00 dollar charge to cover the cost of lunch and supplies.

Gordy said there will be a Tech. class given on May 1st and May 8th.

After a short break Duane Ingram PhD, N9ZKR, was introduced and he gave an excellent presentation on *The Quiet Sun*.

After the presentation a motion to adjourn was made by Art, N9NQD, and seconded by Carl, W9TQ.

Submitted by,
Al KD9CA
RARA Secretary

RARA Information Net

The purpose of the net is to disseminate RARA related information as well as other Amateur Radio related information. As a club sponsored activity, please check in with Net Control and help make this net a success. The Net Control is rotated between the club members, with all amateur radio operators encouraged to check in. (RARA members as well as non-members)

Let any of the officers and board know your thoughts and ideas. If you wish to be a net control operator, let any of the officers know. All are encouraged and welcome to participate.

146.610 (pl 114.8) repeater at 8:00 pm, every Monday, except on holidays.

RESONATE FIRST, MATCH SECOND (OR NOT AT ALL)

By Eric Nichols, KL7AJ, WD2XSH/27 (Edited by Kurt, KE9N)

Whenever a newcomer comes to me with an antenna problem, the first thing I ask is "Where is it resonant?" More often than not, it's also the LAST question I need to ask. As we will demonstrate, not only is the reactance of any antenna FAR more dependent on frequency than is the radiation resistance, but that the SWR on a transmission line is FAR more dependent on reactance than it is on resistive mismatching. Although it's nice that affordable antenna analyzers abound nowadays, in the wrong hands they can lead to more confusion than enlightenment. A far more useful instrument for ANY new ham...at least until he has some transmission line theory under his belt...is a grid dip oscillator (GDO). Now, if you happen to have all three instruments: a GDO, an Antenna Analyzer, and an SWR meter, you can have even more confirmation of some important principles I'll describe. The input terminals of an antenna present an impedance in two parts, a reactance (preferably zero), and a real part, which ideally consists of mostly RADIATION RESISTANCE. For nearly any practical antenna, the CHANGE in feedpoint resistance from one end of a ham band to the other, is insignificant. Reactance is a whole `nother story, though. In fact, for all practical purposes, it is the change in REACTANCE alone which accounts for the change in SWR as you move from one end of a ham band to another. We actually have a "double whammy" working against us in this. REACTANCE changes quickly with frequency for most antennas, and SWR changes rapidly with REACTANCE. The latter factor is easily demonstrated with the Smith Chart, but if that is too daunting for you, any transmission line analysis program like TLA and others, confirms this as well. But, just in case you have a healthy suspicion of computer programs, you might want to test this out for yourself. GREAT! Let's go! String up a 40 meter dipole at a height where you can reach the feedpoint with a stepladder. Create a SMALL coupling loop at the feedpoint of the antenna. Just a couple of turns of wire, an inch or so in diameter, clipped across the input gap, should do the job. Now insert your GDO pickup coil into the coupling loop you just made, and sweep the oscillator for a dip. It should be very well defined. Note this frequency. (A GDO won't tell you anything about the RESISTIVE part of the impedance, but with some experience, you can get a crude estimate). Now log this resonant frequency. If you have an antenna analyzer, use it to confirm this resonant frequency. You should get $x=0$ very close to the frequency you measured with the GDO. If your antenna analyzer has a built-in SWR function, great...let's do another check. First, look at the RESISTIVE part of the impedance. An antenna at about 1/10 wavelength altitude, over average ground, will have a radiation resistance of about 70 ohms...pretty close to that of free space, oddly enough. Let's call it 70 ohms. The SWR indicated by your analyzer should be 1.4:1. The SWR should always read the ratio of measured resistance to 50 ohms, whichever is larger. Note! This ONLY works at the precise resonant frequency!

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Now, hopefully your resonant frequency is somewhere in the 40 meter band. Now, scoot the frequency up by 100 KHz and take another reading. Your radiation resistance probably went up a couple of ohms. But what about the reactance? You probably have about 20 ohms of reactance now, right? It's changed at least TEN TIMES as fast as the resistance. Now, let's move up 500 kc from the resonant frequency. Take another reading. Well, now the radiation resistance has gone up by 12 ohms or so. But look at that reactance. It's about 105 ohms, plus or minus some spare change! Your SWR is up to around 4.65:1. Let's insert a small series capacitor at the feedpoint, just enough to get rid of the reactance. We still have a radiation resistance of 82 ohms, but the reactance is now zero. But our SWR is now down to 1.64:1, which is good in just about anyone's book! How good is "good" when it comes to SWR? Let's use our 40 meter dipole on 80 meters! Scoot your antenna analyzer down to 3.5 MHZ. Take another reading. The R is 27.9 ohms...not great, but not too horrendous. But look at that reactance! -931 ohms! This gives us a whopping SWR of 627:1! Just how bad is an SWR of 627:1? Let's say you're using 100 feet of garden variety RG-8 coax. Calculation with TLA shows us that we have 13.898 dB line loss, or 95.9% line loss! So, if you're pumping 100 watts into your coax, about 4.1 watts actually reaches the antenna. (These figures can be confirmed by using your trusty SWR/POWER meter to measure the power at the INPUT of the line and then at the OUTPUT of the line.) But here's the good news. Let's add a pair of decent loading coils right at the feedpoint, changing nothing else. This isn't even the best place to put them; we can get even better improvement by placing them farther out. Guess what? By the mere addition of the loading coils (assuming they're the proper value to precisely achieve resonance, our SWR goes down to 1.79:1! The line loss is down to 9.2%! Just by the mere addition of a proper loading coil! Even better news yet...you don't need an expensive antenna analyzer to determine this proper value...all you need is your trusty old GDO to get a 90% improvement in antenna performance!

Are we saying that resistance has no role in antenna performance? Certainly not. But amateur radio performance is about majoring on the majors and minoring on the minors. That means fixing what you can fix, and not wringing your hands over what you can't! You can't do much to improve the radiation resistance of an antenna...other than making it bigger. Sometimes making an antenna bigger is not an option, and even if it is, the improvements are usually incremental. But you can make VAST improvements by fixing the reactance...and it's a lot cheaper, too!

I would like to conclude by reiterating that there is ABSOLUTELY NOTHING SACRED ABOUT A SELF-RESONANT ANTENNA. This statement in no way contradicts any of the above discussion. Any method of resonating an antenna will make it resonant (duh!)...either by linear (cutting to length) or lumped elements (coils and capacitors). Remember a 5/8 wave antenna is NOT self-resonant...but it's a better antenna than a wave dipole...with the proper loading. However, if you're using a lossy transmission line, it's crucial that you obtain resonance at the LOAD end of the transmission line.



**SIXTEENTH ANNUAL
AES
SUPERFEST**
APRIL 9th & 10th • 2010



ARRL Sanctioned
Hamfest
Special Guest
Carl
Luetzelschwab,
K9LA



All inside at AES

5710 W. Good Hope Road • Milwaukee, WI

Friday, April 9th. (2:00 P.M. – 6:00 P.M.) • Saturday, April 10th. (8:30 A.M. – 3:00 P.M.)

**FREE Parking & Admission • Manufacturer Representatives • Clubs & Organizations • Forums
V.E. Testing • Gordon West • QSL Card Checking • Fox Hunt • Talk-in • Hot Food & Drink (for purchase)**

Special Guest, K9LA – well informed on many topics of interest to Hams: *Propagation, the Ionosphere, Solar Cycles, Aurora, HF & VHF, Contesting, DX* and much more. Visit Carl's Propagation website (mysite.verizon.net/k9la)

MANUFACTURERS

ALINCO
ARRL/QST Magazine
Ameritron
Badger State Smoke Signals
CableXperts
Comet Antennas
Creative Services Software
Cushcraft Antennas
Daiwa
Engraved Memories
GRE America, Inc.
Gold Medal Ideas
Gordon West Radio School
Heil Sound Ltd.
Harger Lightning/ Grounding
HyGain
ICOM
KENWOOD
Larsen Antennas
Lido Mounts
MFJ Enterprises
Maldol
Mirage
NCG
Pryme
Polyphaser
QLS USA Engraving
RT Systems
RadioWavz Antennas
SGC
Times Microwave Systems
Timewave Technology, Inc.
Unified Microsystems
Vectronics
W5YI Group
YAESU

CLUBS & ORGANIZATIONS

ARES Communications Van
Badger Contesters
Chicago Marathon Ham Group
Fond du Lac Amateur Radio Club
Fox River Digital Operator Group
Greater Milwaukee DX Association
Handi-Hams
Kenosha ARES
LEFROG
Lakeshore Repeater Association
Milwaukee Area Amateur Society (MAARS)
Milwaukee Digital Operators Group (MADOG)
Milwaukee School of Engineering
Milwaukee Area Amateur Radio Society
Milwaukee Fox Hunters
Milwaukee Power Squadron
Milwaukee Radio Amateurs' Club (MRAC)
Milwaukee Repeater Club (MRC)
Milwaukee/Waukesha ARES
Air Force MARS
Navy-Marine MARS
North Shore Radio Club
Official Observers (Meeting)
OZARES
Ozaukee Radio Club
QCWA Chapters #55, 162 & 219
Peoria-Area Amateur Radio Club
Racine County ARES/RACES
Racine Megacycle Club
Racine R.A.T.S.
Red Cross Emergency Response Vehicle
SEWFARS
Salvation Army Team Radio Network (SATERN)
South Milwaukee Amateur Radio Club
Sullivan Weather Amateur Radio Association
United States Power Squadrons
Young Amateur Contest Team (YACHT)
West Allis Radio Amateur Club
Wisconsin Amateur Radio Club
Wisconsin Council of REACT Teams

There will be a special **D-STAR INFORMATION BOOTH** with operational D-STAR equipment and staffed by the Milwaukee Digital Operators Group (MADOG) and others. Have your questions about D-STAR answered and sign-up for a *Special Drawing* for an ICOM ID-880H (D-STAR Ready) transceiver.

Due to our catalog deadline, the participants and information may not complete. Please check <http://aesham.com/superfest.shtml> for the latest updates.

where you'll find many informative and practical articles from his monthly *WorldRadio Propagation* column, along with articles contributed to other Amateur Radio publications. Attend his two Superfest forums, and during the show you can talk to Carl and his XYL Vickie, AE9YL at the ARRL booth.

Superfest Streaming Video
<http://www.ustream.tv/channel/superfest>

FRIDAY, April 9th

2:00 P.M. – 6:00 P.M. SUPERFEST OPEN 5:00 P.M. – 6:00 P.M. FORUM: D-STAR DEMYSTIFIED (Speaker(s) TBA)

SATURDAY, April 10th

8:30 A.M. – 11:15 A.M.

V.E. TESTING – Bring a form of ID (driver's license O.K.), the Original & Photocopy of your Ham license (if applicable) and any CSCE. (**Last exam at 11:00 A.M.**)

8:30 A.M. NOON

QSL CARD CHECKING (DXCC, WAS, WAC & VUCC)

At the ARRL Booth. Courtesy of Ron Gorski, N9AU (Greater Milwaukee DX Association) with assists from Carl Luetzelschwab, K9LA and XYL Vickie, AE9YL. **9:30 A.M.**

10:30 A.M.

2 METER FOX HUNT CHALLENGE

Bring your HT or favorite tracker. There will be multiple transmitters hidden around the AES property that can be easily tracked on foot. It starts at the Fox Hunter's booth.

8:45 a.m. – 9:30 a.m. SATURDAY FORUMS

CONTESTING: Making The Next Step – Gary Sutcliffe, W9XT (*Unified Microsystems and Columnist for the ARRL's National Contest Journal*) – Techniques for helping contestants improve their scores and move up to the next level.

9:40 a.m. – 10:25 a.m.

AN UPDATE ON CYCLE 24: How's it Doing? What to Expect!

Carl Luetzelschwab, K9LA

The current cycle has started a bit sluggish but is now showing signs of increasing activity. Is this cycle just behind schedule? Are the numbers going to skyrocket or will they be lower than anticipated? Find out from Carl!

10:35 a.m. – 11:20 a.m.

GROUNDING TECHNIQUES for Improved Station Performance & Safety

Emmett Hohensee, WØQH (Chief Engineer, Radiowavz Antennas, Inc.)

No matter what the antenna, with proper grounding your signals will be stronger and you'll be safer. First hand experiences and info on creating effective ground systems.

11:30 a.m. – 12:15 p.m.

PROPAGATION PLANNING for DXpeditions

Carl Luetzelschwab, K9LA

Expanding on this cycle 24 update and information on his own personal DX efforts and ham radio experiences. Looking ahead and planning for a productive portable operation or DXpedition – the locations, bands and hours of operation for best results, MUF issues, Geomagnetic Field Activity issues, and Low Band issues.

12:25 p.m. – 1:25 p.m.

GORDON WEST SHOW

Gordon West, WB6NOA (Gordon West Radio School)

Vintage Gordo with lots of funny and informative stuff.

1:35 p.m. – 2:35 p.m.

WEATHER

Michael Fish (Meteorologist, WTMJ-TV Milwaukee)

Back by popular demand with more on weather, storm spotting and safety. A video tour of WTMJ-TV's Weather Department with Mike preparing a forecast using computers, radar, weather data, etc. "On-the Air" – the weather set and Mike at work.

Talk-in: N9LKH (145.130/144.530, PL 127.3 Hz) and KC9LKZ (MADOG) UHF D -Star, 442.46875 +

Parking: If the AES lot is full please use the Elks' Lodge lot just across the street and to the East • **Food:** provided by BSA, Troop 205

Prizes: Drawings each 1/2-hour; Grand Prize drawing Saturday 2:45 P.M. (Must be present for 1/2-hour drawings, but not for Grand Prize)

ARRL Contest Update

I get so much from this free ARRL email publication that I want to make others aware of its existence. It's the ARRL Contest Update. Don't "turn off" because it says "contest", those of you that know me, know I don't do contests. There is so much more than contesting info in each issue. For instance, The toroid question I posed recently on the Monday night RARA Information Net was, for the most part, answered by the following reference found in the current Contest Update. Here's the URL... <http://toroids.info/XXX-XX.php> The contest Update keeps me "clicking", following interesting web based info. ARRL members may subscribe to the ARRL Contest Update newsletter at the following URL: <http://www.arrl.org/contests/update/>.
Enjoy!
73,
John Olson, W9JGO



AMATEUR RADIO EXAM NOTICE

March 20th there were 4 applicants resulting in 2 new license and 1 upgrade

New License

Jason Halbrader, Technician
Joseph Wnstrom, Technician

Upgrades

Arthur Naud, N9NQD, General

Northern Illinois Volunteer Examiners will be holding the next Amateur Radio exam session in Rockford, IL on Saturday, April 17, 2010.

Location:

St. Anthony Hospital
5666 E. State Street
Rockford, IL

Exams will be held in the St Francis Room (just right of the front entrance after you enter).

Check-in is from 9:00 AM til 10:30 AM.

What You Need To Bring To A W5YI-VEC Session

1. Your original Amateur License (unexpired or within the 2 year grace period) and a copy to attach to the paperwork.
2. Any valid CSCE that you are using for credit. Again the VE's have to see the original and have a copy to attach to the paperwork.
3. Two forms of Identification with your signature on them. One must be a picture ID (drivers license, passport, school ID, library card, credit card, etc.)
4. Test Fee \$14.00 cash or check. (please make checks payable to W5YI-VEC)

Contact Information
Randy Scott, W9HL
W9HL@arrl.net
815-877-4328

Editors Note

If you would like to have something published , please call me or email me at ke9n@arrl.net.

Cut-off for the May 2010 Hamrag will be Wednesday, April 28, 2010

Kurt - KE9N, Editor

FRIDAY MORNING BREAKFAST

Meets every Friday morning from 8 am until about 9:30 am. An informal gathering of ham folks, no affiliations necessary, good food and good company.

Everyone is welcome to attend.



"The Stockholm Inn"
2420 Charles Street
Rockford, IL 61108



UPCOMING CONTESTS

Japan International DX Contest, CW, 0700Z April 10 to 1300Z April 11
International Vintage Contest, CW/SSB, 0800Z to 1200Z and 1400Z to 1800Z April 11
PSK 31 Flavors Contest, 12:00-18:00 LOCAL TIME, April 14
CQ WW WPX Contest, CW, 0000Z May 29 to 2359 May 30

Note: Source for this column include the NG3K website. Information submitted by Kurt - KE9N

\$\$\$ Items for Sale \$\$\$

SELLING ROHN 25G TOWER with (1) 9 foot Top Section and (2) 10 foot Straight Sections
All in good USED condition. Price: \$200 or Best Offer

Reply to me at w9ss@hotmail.com or leave me a message on my telephone, 1-815-877-6768. I have taken several JPG photos of the three unattached sections; if you would like to see them, please give me your email address and I will email the JPGs to you. Thanks! 73, Dennis G. Eksten, W9SS

AREA Repeaters

146.610 -	ENC/DEC pl 114.8	W9AXD
147.000 +	ENC/DEC pl 114.8	W9AXD
223.880 -	ENC/DEC pl 118.8	W9AXD
ATV	input 1250 Mhz/ 434 Mhz output 421.25 Mhz	W9ATN
146.805 -	ENC/DEC pl 114.8	K9AMJ
224.440 -	ENC/DEC pl 118.8	K9AMJ
147.255 +	ENC/DEC pl 114.8	WX9MCS
444.725 +	ENC/DEC pl 107.2	WX9MCS
		Linked to FISHFAR

2010 RARA Officers and Board

Officers:
President - Gordon Seaman, KC9NEX, 815-234-5034
Vice President - Gene Stankiewicz, KA9BOD, 815-226-1806
Secretary - Al Fischer, KD9CA, 815-885-3926
Treasurer - Paul Franklin, K9RNR, 815-298-2251

Directors:
Shari Harlan, N9SH, 815-398-2683
John Lawrence, N9OTC, 815-397-4624
Tom Shouler, N9VJU, 815-877-9129
Steve Thorne, K9LLI, 815-399-9161
Web Master - Robert Larson, KC9ICH, 815-226-1875
Ham Rag Editor - Kurt Eversole, KE9N, 815-389-2784
Repeater Chairman - Chuck Ingle, AB9KA, 815-979-1049

RARA BOARD MEETING MEETS ON THE LAST TUESDAY OF THE MONTH AT 7 PM
St. Anthony Medical Center 5666 E. State St. Rockford, IL



P.O. Box 8465, Rockford, IL 61126

Website: www.w9axd.org

E-mail: ke9n@arrl.net

Nets

Monday 8 PM RARA Info. 146.610 - 114.8
Thursday 7 PM ARES 147.195 + 114.8
Thursday 8 PM SATERN 146.610 - 114.8

place address label here

April 2010

ROCKFORD AMATEUR RADIO ASSOCIATION MEMBERSHIP APPLICATION

Single Adult: \$25.00 Adult w/Family: \$30.00
Single Senior: \$15.00 Senior w/Family: \$20
Student: \$15.00

Above rate includes the RARA monthly newsletter, Ham Rag, via email.

Ham Rag Via U.S. Postal Service: \$12.00 extra

Name _____ Call Sign _____

Address _____

City _____ State _____ Zip _____

Home Phone _____

Work Phone _____

Email _____

Renewal _____ New _____ Retired _____

Radio Interests _____

Other Interests _____

Suggestions: _____

RETURN COMPLETED FORM TO:

ROCKFORD AMATEUR RADIO ASSOCIATION
P.O. BOX 8465
ROCKFORD, ILLINOIS 61126