

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.

Presidents Column

Greetings,

The first thing I want to do is personally thank everyone who came out and helped to make Field Day weekend a success. Whether you provided equipment, helped erect antennas, set up operating stations, helped making contacts, or just provided moral support by just showing up and visiting, I want you all to know it was greatly appreciated. Also, special thanks to Chuck Ingle, AB9KA, for stepping in and providing food, even (midnight pancakes) for those present. Thanks Chuck, you did a fine job and everyone really appreciated your efforts to help support the cause. Also, I do not want to forget to thank Don, W9DRR for his chili, which he made and donated. I felt all who attended had a great time. Even though it was hot and rainy, and I am looking forward to next year already.

Moving on with other business, there are two events coming up that we need chairpersons for. We need a chairperson for the election committee. The terms for the current officers are coming and we need someone to chair the proceedings for new elections.

Secondly, the RARA awards banquet, which is held in January, needs a chairperson to handle the arrangements. If you are interested in either event, be assured that help will be available for you. Please contact me or any board member for further information.

Finally we have to discuss the upcoming On The Waterfront event. Again this year we have a booth selling tickets for food and rides at the event. This is our only club fundraiser for the year. Without this income the club would not be able to put on any of our events such as the "Breakfast in the Park", the "Annual RARA Picnic", or the other RARA sponsored events. The funds are also used to help keep the repeater's operating, and the ability to help bring in good speakers from outside our area for club meetings. Soon you as members will be receiving phone calls to see if you are available to commit time to work at this event to help the club. We need all of you to help make this a viable event for the club. Please don't forget to ask your relatives and or friend to help. They will receive a button to the event good for all three days for their 4-hour commitment. Currently we have sixteen positions open along with four supervisor positions. If you have any questions about what is involved, or wish to volunteer, please contact either myself, Gordon Seaman, KC9NEX, or Al Fischer, KD9CA, at the numbers listed in the Ham Rag. Al and I have the master lists as to what days and times are available. If you may feel more comfortable contacting a member you know please do so. Either Al or I will then contact you with the possible spots open and arrange to get your buttons to you. Hope to see you at the August meeting.

73,
Gordon Seaman, KC9NEX
2010 RARA President



August 2010

INSIDE THIS ISSUE

Presidents Log -	page 1
VP Comments -	page 2
Secretary's Rpt. -	page 3
RARA Family Picnic -	page 4
VHF Contesting -	page 5 & 6
Radiofest 2010 -	page 7
Reading Directions? -	page 8
Licensing Info. -	page 9

NEXT MEETING

FRIDAY

August 13, 2010

7:00 pm

Presentation:

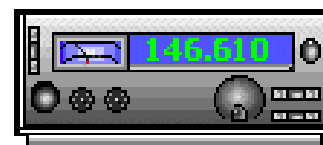
"ARES Information"

By:

**Steve Twigg
W9SWT**

Location:

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



Latest news and events on our web page: <http://www.w9axd.org>

From the Vice President

August 2010 VP Comments

It is now August, and the summer / good weather are half gone, have you gotten to your antenna work yet? If you are like me, you have not started yet. I have a GAP Titan with a broken connection to the 15M element that needs to be fixed. I did not get to it last year, but hopefully will get it done before the cold weather sets in. One of my favorite bands is 15M and the predictions are that the 15M band may be opening up.

Last month I asked a question about club participation. I received three responses and would like to thank those that responded with comments. Between the written replies and verbal comments in summary, it is a sign of the times that other things are taking peoples interest or Friday is a bad night for a meeting. Currently, amateur radio does have a lot of competition, especially with all of the neat/compact electronic gadgets available today. As for a Friday evening meeting, I remember discussions about alternate days and times for the past 20+ years. No matter what day and time is chosen, there are always other things going on. (The Friday morning breakfast group is an example where the attendance will vary from 10 to 30 people on any given Friday morning.)

There are some good meeting programs remaining this year, the topics are repeaters how they work and etiquette, HF radio features and how to use them, updates on ARES & MARS and a couple of videos on DXpeditions. The intent of this year's programs was to give an overview of the many aspects of amateur radio.

As a club, we need a few more people to raise their hand to help. The family picnic is in August, our only fund raiser is "On the Waterfront", Labor Day weekend (contact Gordy, KC9NEX, if you can help), election of officers/board is in October, nomination of Ham of the Year in December.

73,
Gene, KA9BOD
2010 RARA VP

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

Gin pole parts – tower clamp, 2 pulleys (1 3/8" pipe) and assorted clamps & toggles. \$50 for all or best offer.

Cushcraft 15 element 2M boomer antenna It comes in 3 sections and when put together it is 28 feet long. It is similar to a Cushcraft 17B2 and 13B2. It is in good mechanical shape. Make an offer.

Contact Gene, ka9bod at 815-226-1806 for both items. Email: ka9bod@arrl.net

UPCOMING RARA EVENTS

August 13 - General RARA Meeting 7:00 pm at OSF
"ARES Information" by Steve Twigg, W9SWT

August 22 - RARA Family Picnic 11:30 am to 1:30 pm

August 31 - RARA Board Meeting 7:00 pm at OSF

September 3,4,&5th - "On the Waterfront" Fundraiser

September 10 - General RARA Meeting 7:00 pm at OSF
"HF Radio Features" by Jack Hudson, W9MU

Secretary's Report



RARA Club Meeting July 9, 2010

The meeting was called to order by President Gordon Seaman, KC9NEX, at 7:07 pm. There were 21 members in attendance. Each member introduced themselves and spoke of any ham radio endeavors they were currently involved in.

Secretary's Report: Al, KD9CA, stated that the minutes were published in the June Ham Rag and copies were available for anyone who needed one. John, W9JGO, made a motion to accept the minutes as published and Kurt, KE9N, seconded the motion. The motion carried.

Treasurer's Report: Paul, K9RNR, read the report for the period May 23rd through June 28th 2010.

Income:	\$31.00
Expenses:	\$502.75
Net income/loss:	\$(471.75)
Ending checking balance:	\$1373.01
Ending repeater checking balance:	\$64.03
Ending savings balance:	\$3214.02
Ending total cash on hand	\$4651.06

Chuck, K9SAN, made a motion to accept the report as read and John, W9JGO, seconded the motion. The motion carried.

Old Business:

Gordy, KC9NEX, did not have anything new to report on the repeaters.

Gordy said he had received the contract from *On the Waterfront*. He reminded all that volunteers were needed to man this event and stated that this was the Clubs only money making event.

New Business:

Gene, KA9BOD, reported to the membership that equipment was donated to the Club and was in the back of the room. He read the prices that the Club would like for these pieces and stated all monies would go into the Club treasury.

Gene also said there was a 2 meter 15 element beam available that was for sale. Anyone interested should see him.

Gene, KA9BOD, expressed his disappointment that in attendance and membership. He spoke of our improved presentations and yet our attendance has not increased. Gene placed a suggestion box in the rear of the room and asked for feedback.

Gordy, KC9NEX, asked for a chairperson for the nomination of officers for next year.

Gene, KA9BOD, volunteered to take care of the Ham of the Year Award.

Gordy, KC9NEX, asked for a motion to close the meeting. Kurt, KE9N, made a motion to adjourn the meeting at 9:13 pm and John, W9JGO, seconded the motion. The motion carried.

Bob Larson, KC9ICH, then gave an informative presentation on using the digital eQSL method of exchanging QSL cards.

Submitted by,
Al, KD9CA
RARA Secretary

RARA Family Picnic

Remember, mark your calendar and put aside Sunday, August 22nd for the RARA annual Family Picnic.

It will be held at Alpine Park, Shelter #1. Time 11:30 am until 1:30 pm. Bring your own place settings and a dish to pass. Chicken will be the main entrée. We will also supply pop and coffee. Each member will be contacted to find out if you will attend and how many in your party will attend. This will help the Club to more accurately plan for the event.



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 you 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.

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

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



VHF Contesting School: What Bands and Frequencies by KC9BQA, edited by KE9N

The bread and butter band of any VHF/UHF contest is 2 meters. A very close 2nd is 6 meters. With 2 and 6 meters being most popular, that's why I'm so gung-ho about getting new folks involved. So you can contest, even without any experience. Don't worry about someone who has 3, or 4 or more bands and big antennas. Everyone has to start somewhere.

First off, this is important: No contesting on repeaters. Also, no contesting on the national 2 meter simplex calling channel of 146.520. You also avoid 146.505 and 146.535, to give room for 146.520. Now you know where NOT to contest. You also don't use FM mode in the SSB/CW portion of the bands, and vice versa. Remember that SSB uses horizontally polarized antennas, and FM vertical. It is OK to answer someone using the opposite polarity. If you can hear 'em, work 'em.

Here's info on each band:

** 2 meters: ** SSB call freq. is 144.200. Tune between roughly 144.150-144.250 for contest activity. Don't hog 144.200, but certainly feel free to use or monitor it. Especially in a contest, it's good amateur practice to keep contacts short on the call freq. Don't use FM on 144.

On FM, lots of hams use 146.550 simplex to call. 146.580 is the 2nd choice. Again, if it seems busy, don't be afraid to spread out. In more sparsely populated areas, you're probably best off having everyone meet on 146.550, and 146.580 can be used if you need elbow room. If those get too crowded, also go to 146.490, down to as low as 146.400. Use only FM on 146 or 147 simplex. Simplex frequencies are only between 146.400-146.580 and 147.420-147.570. Stay within these limits. Don't want to hit any repeater inputs, and remember to leave 146.520 alone.

** 6 meters: ** SSB call freq. is 50.125. On 6, you can only go up from 50.125. Don't do domestic contesting between 50.110 and 50.125. It's reserved for the DX window. If, for some reason, you hear a Mexican, Puerto Rican or Caribbean station there, go right ahead and work them. And then congratulate yourself on stumbling into your first DX on 6 meters!

You may hear some guys contest in the DX window anyway. Don't hassle anyone about it — just know that you work USA only on 50.125 and above. Up to about 50.170-50.200.

Action can spread out above 50.200 if it truly gets hectic with a good band opening. Use only SSB or CW from 50.100-50.300. There are beacons below 50.080, and you may hear them. Don't op in that area from 50.000-50.080, leave it alone for the beacons. 6 meter FM call freq. is 52.525. I've never done much here, but I know some do. If you've got a 6 meter rig that is FM only, then put this in play for the contest, same as you would with 146.55 FM.

If 6 meters opens up with sporadic E skip, then you're going to have some REAL FUN. Stations may suddenly come in from Florida, Texas, New York, anywhere. Then you need to spread out because in a big E skip opening during a contest, activity can go up to 50.300. While this is rare during winter, it is common during summer, and it's a ball! I know guys also enjoy sporadic Es on 52 MHz FM; I've just always been an SSB guys on 6. It's all good.

I always keep a rig tuned in the background to 6 meters during any contest. 50.125 is probably best if you're just monitoring. Once 50.125 comes alive with skip, you want to spread out, up the band, and find a place to call CQ. Or do search and pounce, if that's your style.

E skip can happen "THAT" suddenly. In 6 years of contesting I've had many times where 6 was open for hours on end during the summer. You can work 70, 80, 100 grid squares and 20, 30 states in an afternoon and evening. That alone is a good reason to start VHF contesting. If you've never given 6 a chance, you're missing out. Even marginal antennas work lots of DX in strong E skip openings. Talking single loops, dipoles, sometimes even mobile whips. You'd be amazed.

(continued on next page)

VHF Contesting School: What Bands and Frequencies by KC9BQA, edited by KE9N

** 70 centimeters.** I call this band 432 (SSB) or 440 (FM). Because gear for 432 SSB is commercially available (it's often included on the newer HF rigs, along with 6 and 2) this band is more popular than 222 in contests.

On 70cm SSB 432.100 is the call frequency. You may bump into activity between 432.070 and 432.130 with SSB. You may also hear some activity on or near the 446.00 FM Simplex call frequency. My 446.000 FM is poor, but I do know a few contest Q's get made there. 70cm is really a nice band. One advantage is it's often a good predictor of enhanced conditions. I'm not a propagation expert, but my understanding is that when the band is improving like it often does in the evening or early morning, the higher bands like 1296, 900 or 432 MHz will improve before the lower bands do. The trick (as always — sigh) is finding someone to work.

I know I've gabbed a few times with guys 100-200 miles away on 432, and in the course of a half hour or so, their signals can go from S1-S2, up to S9 or higher, as the band improves. It's not as dramatic as Eskip on 6, but it is a lot of fun when you can tell it's happening. So definitely use 432 or 440 in a contest, and by all means, try to promote more activity on it during day-to-day use.

I would say 100% of testers have 2 meters, 80-90% also have 6, about 20-30% have 222 or 223, and about 30-50% have 432. Yagis for higher bands have smaller footprints, and sharper beamwidths. Accurate pointing becomes very important. I've heard guys who wondered if their 432 was broken, when all of a sudden someone pointed their way. For what it's worth, there isn't much day-to-day activity on 432 at all. It comes alive during contests, and band openings, mostly.

There are some 432 nets scattered across the USA. The northeast, undoubtedly. I know North Carolina just celebrated a 30th anniversary. Google W4DEX for that one. Rocky Mountain VHF out of Denver area has 432.100 activity every Wed. night. In a large area of the Midwest, you want to listen for N4PZ out of EN52gb, just west of Rockford, IL, at 8pm central on Monday nights. Very big 432 station, and he usually stirs up 8-15 guys.

Some guys are attracted to almost exclusively the higher or microwave bands, and if you are leaning this way, let me know and I can steer you in the right direction. Talking about bands above 432 MHz is beyond the beginner level.

For beginners, these are the 3 bands you need to concern yourself with for any VHF/UHF contest. Even if you have only 2 meters, go right ahead and contest! Spread the word with your buddies. It's no fun unless it's active.

The next article is going to give some valuable tips on how to put this info to practical use. In other words, how actual testers do things in a contest.

The Bands "Heat Up" for the 2010 ARRL UHF Contest

VHF/UHF weak-signal operators across North America are making the final tests on their stations in preparation for the [ARRL UHF Contest](#), coming up the weekend of August 7-8. Most VHF+ weak-signal operation takes place on the two lowest bands of the VHF spectrum -- 6 and 2 meters; however, there is a lot of activity that takes place above 144 MHz in the UHF portion of the radio spectrum and beyond. This contest focuses on 220 MHz and above; there will be lots of activity, and hopefully lots of propagation, too! So where should you operate from? Certainly your home is the obvious choice, but because antennas are so small and portable -- as are many of the rigs -- operating from a hilltop is very easy.

The [ARRL August UHF Contest](#) runs from 1800 UTC Saturday, August 7 through 1759 UTC Sunday, August 8. Find the [complete rules](#) on the ARRL Web site.



Radiofest 2010

August 5-7

Thursday – Friday – Saturday



Willowbrook Holiday Inn

7800 South Kingery Hwy (Rte 83 & I-55)
Willowbrook, IL 60527 (1-630-325-6400)

CELEBRATING 30 YEARS OF COLLECTING!!

Special Invitation For Clubs:

Bring your banners & marketing materials. Set up a booth at ARCI's 30th Anniversary!

THURSDAY

- Setup Day (**NO SALES**)
- Main Auction 6:30pm
Followed By Free Pizza Party (ARCI Members)
- Pre-Registration Packets Available After 5pm

FRIDAY

- Radiofest Opens
- 7am Registration
- Flea Market All Day
- Educational Programs
- Ham Radio Ops All Day
- Hospitality Tent All Day
- Hotel Food Service

ANNIVERSARY DISPLAYS

- Atwater Kent Museum
- Edison Medal Display
- Motorola Radio Display

EQUIPMENT CONTEST

- Made in Illinois
- Made in Wisconsin
- Made in Indiana
- Rare Plastics/Catalins
- Art Deco Radios
- Radios Pre-1930
- Radios 1930-WWII (1945)
- Radios Post-WWII (>1945)
- Transistors/Novelty
- Speakers
- Open Category

LADIES LUNCHEON

FRIDAY NIGHT BANQUET & 30th ANNIVERSARY AWARDS

Tribute to the 1960s



MISSISSIPPI FLANNIGAN

SATURDAY

- Free Sellers' Raffle 9:15am
- Donation Auction 9:30am
- Flea Market Until Noon

FRIDAY PROGRAMS

Jack Binns And The First SOS – Virginia Utermohlen-Lovelace; Author; Book Signing

Superheterodynes Of The 1920's – Dan Clark; Author, Presenter

Motorola Home & Auto Radios – Olin Shuler; Focus on Quincy, IL Plant Production.

Ham Radio Forum – Bill Ross (W9WR); Show & Tell, Win Prize

Museum Hour - Felicia Kreuzer & Geoffrey Bourne; New AWA Museum & Huntington Museum

Radio Restoration – Ed Huether & John Stone; Using Oscilloscopes, Repair Tips, Shop Safety

IMPORTANT INFORMATION

ARCI Registration Form and Planner: <http://www.antique-radios.org>.

Hotel Reservations: Front Desk 1-630-325-6400. Ask for ARCI room rate of \$95.00 per night.

Seller Fees: First space \$45.00, \$25.00 additional, Saturday Only \$30.00. Banquet tickets \$25.00 per person, \$45 per couple. NEW 8' TABLE RENTALS (Pre-registration only) \$15 each. No charge for general admission. Membership required for program attendance

Questions? Call 630-739-1060. See www.antique-radios.org.

When All Understanding Fails, Read The Directions

Recently, I decided to increase the radiation resistance of my 20 M vertical monopole. I added aluminum tubing until the height was approximately 0.30λ . At that height the impedance of the antenna measures $68.6 + j7.66 \Omega$. This height increase also improved the theoretical efficiency of the antenna from 78% to 87%, assuming 10Ω for ground losses.

The matching frequency chosen was 14.175 MHz. My transmission line is 305 feet of 50Ω Times LMR-600. This distance is 5.0524λ .

At $68.6 - j7.66 \Omega$ the antenna should not be fed directly with 50Ω coax, so I made a High-Pass Tee Network (C-L-C) at the base of the antenna. I adjusted the tuner so it is $50 + j0 \Omega$ at its input (coax side), with a resulting $68.6 - j7.66 \Omega$ on the antenna side (a conjugate match), resulting in $68.6 - j0 \Omega$ at the antenna.

In the shack I expected to measure a VSWR of approximately 1:1. (Remember, I had a 50Ω coax connected to a 50Ω network input.) Instead, I measured 1.3:1. ??? Maybe I was careless, and I adjusted the matching network two more times with the same results. I began to blame my SWR meter, but several meters gave the same measurement of 1.3:1. I also measured impedance at the shack end of the coax at $51 - j13 \Omega$.

I scanned the ARRL *Antenna Book*, looking for a solution. No help! The solution came from the ARRL program *TLW*. After I input this data into *TLW*, I asked that program to **Draw Tuner** for a High-Pass Tee Network. The drawing showed a tuner load at $51 - j13 \Omega$, which was consistent with my measurement. The drawing is not explained, and it is only when you read the Help notes you understand this load number is the impedance the network expects to match. A High-Pass Tee Network in the shack would expect to match the 50Ω transmitter to the combined load of $51 - j13 \Omega$ (the transmission line, tuner at the base of the antenna, and antenna).

My failure to model this situation as a multiple-tuner/network problem, to provide for the transmission line transformer effect, and to provide the shack tuner, resulted in the unexpected VSWR of 1.3:1 in the shack. It was only when I read the directions

The next time you use *TLW* to draw a network, you will know the output shown is the expected load at the network terminals.

Anyway, at a 1.3:1 VSWR (or less), providing a shack tuner is optional!

Jim, N9VJ

ARRL Illinois Section Manager

Thomas T. Ciciora, KA9QPN

I'm happy to be able to serve as your Illinois Section Manager. I've been interested in radio since a child. I was first licensed in 1983, and have devoted my operating time to repeater ownership and maintenance, UHF/VHF weak signal work, FSTV, and public service communications. I currently hold a General Class license.

Our Service is at a crossroads. We can either take the path of serving ourselves and watch our numbers and usefulness diminish, or we can take the high road by becoming the premier emergency communicators of our nation. I firmly believe that only by making ourselves indispensable to our communities can we preserve this great Service. We need to work to make Amateur Radio a part of every public entity's emergency operations plan. We need to become versed in the needs of our Served Agencies by studying the ARECC courses and NIMS practices. The days of waiting for the Served Agencies to come to us are past. We need to train to produce a viable EmComm product and offer that aggressively to our communities, without getting caught up in the 'pseudo public safety wannabee' trap that others have fallen into. I know that you are all up for the challenge, as we've made a lot of progress already.

AMATEUR RADIO EXAM NOTICE

July 17th there were 4 applicants resulting in 3 upgrades

Upgrades

Thomas Hawko Jr, KC9RXI, Extra

Ronald Langley, W9PNP, Extra

Northern Illinois Volunteer Examiners will be holding the next Amateur Radio exam session in Rockford, IL on Saturday, August 21, 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

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		W9ATN
	output 421.25 Mhz	
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

Editors Note

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

Cut-off for the September 2010 Hamrag will be Saturday, August 28, 2010

Kurt - KE9N, Editor



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

August 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