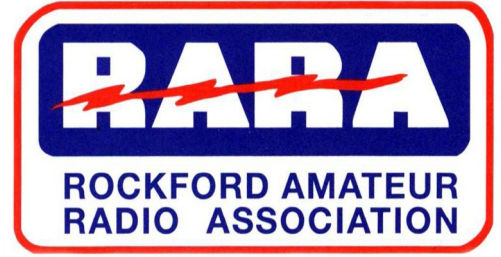


# HAM RAG



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 Message

Happy New Year to everyone!

On behalf of our club, I would like to thank the 2012 officers and board members for their dedication, commitment and service. Also, thank you to everyone that volunteered and helped out with club functions and events throughout the year. It is the volunteers that make RARA a successful club.

We have a great group of officers and board members to lead the club forward in 2013 and I am optimistic that we will have a successful year. Check out the list of officers and board members in this edition of the Hamrag and feel welcome to share your comments and suggestions with them.

RARA members offer a wide range of knowledge that covers almost 60 years of Amateur Radio club experience. We should all be proud to be associated with the Rockford Amateur Radio Association. Please encourage other hams to join our club and ask previous members, in good standing, to consider giving RARA another look.

My goal this year is to keep the business section of our membership meeting short, so we can get on with the real reason we attend; our interests in Amateur Radio. I ask that if you have issues that require board consideration, you attend the next monthly board meeting to bring your issues up at that time.

With the "On the Waterfront" restructuring, the club has a new challenge to replace our major fundraiser for the year. I am confident that with everyone's ideas and suggestions we will find an alternative. Also, as a reminder, dues for 2013 RARA membership are now being accepted, so please contact a club officer to renew your membership.

See you at the next meeting!

73,

Doug Abrahamson – KC9SDO

**2013 Dues** 815-337-4001

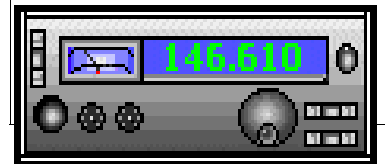
Dues are payable now to the RARA Treasurer.

Just a reminder that membership is reviewed annually according to the RARA constitution.  
You must be a paid member to vote

## January 2013

### INSIDE THIS ISSUE

President's Message	page 1
2012 Year End Rpt	page 2
Secretary's Rpt	page 3
VEC	page 4
KR7RA Solar Rpt	page 5
KR7RA Solar Rpt	page 6
Hamfest Info	page 7



### NEXT MEETING

**FRIDAY**

**January 11, 2013**

**Location:**  
**Foundation Room**

**Saint Anthony OSF**  
**5666 East State Street**  
**Rockford, Illinois**

**Program:**

**Ham Shack on the**  
**Queen Mary**

Latest news and events on our web page: <http://>

## Awards Dinner

The awards dinner has been cancelled because we could not get enough people to make it financially viable. The recipient of the "Ham of the Year Award" will be announced at the January meeting if he is present. The presentation will also take place at the January meeting.

## 2012 Annual Treasurer's Report

### Rockford Amateur Radio Association, Inc. 2012 Annual Report – Treasurer

The following outlines what our income sources and amounts were in 2012, as well as expenses and amounts: Please be aware, I am not a CPA, nor a bookkeeping expert....

#### Income:

2012 Dues -----	\$412.00
50/50 drawing-----	\$17.00
(50/50 drawings were held at only 3 meetings)	
Donations-----	\$13.50

---

Total Income for 2012-----	\$442.50
----------------------------	----------

#### Expenses:

Refund of Ham Rag Postage for 2 yrs – Fred Miner, W9WOQ-----	\$24.00
Donation to OSF St. Anthony-----	\$100.00
Illinois Repeater Association (co-ordination of W9AXD Rptrs)-----	\$12.00
Post Office box annual rental-----	\$48.00
Liability Insurance-----	\$410.00
On The Waterfront tickets for the sales team-----	\$252.00
Secretary of State – Illinois Filing fees-----	\$10.00
Field Day/Picnic – Gordy Seaman, KC9NEX-----	\$218.43
Field Day – Kurt Eversole, KE9N (includes reuseable banner cost)-----	\$460.27
147.000 Repeater/146.610 Antenna – Kwik Kall Communications-----	\$2052.42
Sally Miles Memorial (Steve Miles, KC9WBH)-----	\$25.00

---

Total Expenses for 2012-----	\$3612.12
------------------------------	-----------

A net decline of ----\$3169.62

Respectfully Submitted by John G. Olson, W9JGO 2011/2012 RARA Treasurer

## From the Secretary

### Minutes of October 12th Meeting

President Tom Shouler, N9VJU opened the meeting at 7:10 p.m.

Secretary's Report was read by Jim Holich, AB9SX. A motion to accept the report as read was made by Dick Fleing, KC9BCB and seconded by Jim Curtis, KC9GOL. The motion carried by unanimous vote.

The Treasurers report was then read by John Olson, W9JGO. A motion to accept the report as read was made by Jim Milller, W4JR, and seconded by Doug Abrahamson, KC9SDO. The motion carried by unanimous vote.

Under "Old Business: the awards dinner was discussed. It was subsequently cancelled at the Board meeting because of insufficient numbers to make the dinner financially viable. The regular meeting will be held January 11th, 2013. A motion to approve was made by Doug Abrahamson, KC9SDO and seconded by Jim Miller W4JR.

There was no New Business discussed.

There was a short period of socialization and fellowship before the presentation.

The presentation was made by Doug Abramson KC9SDO of a video called "Amateur Logic TV— 7th Anniversary".

We then had a motion to adjourn by Gordon Seaman, KC9NEX, and seconded by Jim Holich AB9SX. The motion carried by unanimous vote.

The meeting stood adjourned.

Submitted by Jim Holich—AB9SX  
Secretary

## Velocity Factor

### Velocity Factor, What is it?

By Richard Morrow, K5CNF

Many hams do not understand what the term velocity factor means. Abbreviated as VF, it is a way of expressing what the speed of a radio signal is in a transmission line and it is written in a percentage, such as 66%. This means the radio signal is travelling at .66 the speed of light in space. Ok, you say, so how does this affect me?

Well, if you want to build a phased array, in order to get the correct length of the phasing lines, you must figure the VF to get the correct length. This is important to ensure that the driven elements are phased correctly.

If the cable has a VF of .66, then you must take the figure calculated for a half wavelength at the frequency you are going to operate and then multiply it by the VF in this case, .66.

So, for a half wavelength phasing line on 40 meters, by dividing 486/7.00 MHz you will get 66.86 ft. Then multiply 66.86 by .66 and you get 44.13 feet as the correct length for this particular piece of cable. Different cables have different velocity factors but the manufacturers have these figures usually in their catalogs. TV twin lead has a velocity factor of .88 and open ladder line is slightly higher at about .90. For the most part, VF is not important to most hams, but if you intend to phase antennas, it becomes very important, e.g.,

$$468/7.00 \times .66 = 44.13$$

Being aware of velocity factor is very important if you want to build a phased array. Phased arrays can give you more for your money than any other kind of array, if constructed properly.

## AMATEUR RADIO EXAM NOTICE

December 15th there were 4 new licensees and 1 upgrade. Congratulations to:

Upgrade:

David B Stein, Extra

New:

Michael G Blaisdell, Technician

Kevin A Farris, Technician

Edwin L Zahorik, Technician

Thanks to Jim Holich AB9SX, Shari Harlan N9SH and Steve Twigg W9SWT for volunteering their time.

Amateur Radio exams are held the 3<sup>rd</sup> Saturday of every month in Rockford IL. The next session is 9AM January 19, 2013. Walk-ins welcome. Check-in is from 9AM-10:30AM. We require two signature ID's and one photo. If you are a licensed Amateur Radio operator bring your current license and a copy. If you are using a CSCE for an element credit, bring the original and a copy (We need to see the originals & keep a photocopy of each document used for element credit). No copier on site. The test fee is \$14.00. Bring a non-programmable calculator.

Location:

OSF St Anthony Medical Center

5666 E State St (Bus US20)

Rockford IL

Exams will be held in the St Francis Room (Main Entrance then turn right).

Rusty Cordell WB9QYV

[wb9qyv@aol.com](mailto:wb9qyv@aol.com)

### 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
<b>ATV</b> 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	

### 2013 RARA Officers and Board

#### **Officers:**

President - Doug Abrahamson, KC9SDO, 815-979-0329

Vice President - Robert Larson, KC9ICH, 815-540-0309

Secretary - Jim Holich, AB9SX, 779-552-8796

Treasurer - Shannon Larson, KC9QBC, 815-226-1875

#### **Directors:**

Kurt Eversole, KE9N 815-389-2784

Dave Larsen, N9ZXL 815-399-8205

Richard H. Range WB9SFG—815-337-4001

Gordon Seaman, KC9NEX 815-234-5034

Tom Shouler, N9VJU, 815-978-6476

Web Master - Robert Larson, KC9ICH, 815-540-0309

Ham Rag Editor - Jim Holich, AB9SX, 779-552-8796

Repeater Chairman - Chuck Ingle, AB9KA, 815-979-1049

## The K7RA Solar Report

From Tad Cook, K7RA  
Seattle, WA January 4, 2013  
To all radio amateurs

SB PROP ARL ARLP001  
ARLP001 Propagation de K7RA

The New Year brings dreams of solar cycles of old, so distant now, sweetly remembered for their profusion of sunspots. We hear many times from operators who began in the amateur radio service as teenagers at the peak of Cycle 19. With youthful optimism, they naturally assumed that radio propagation would always be like that, when a few watts and a modest radiator on 10 meters spanned the globe during all the days and nights.

If you were age 13 to 17 in 1957 to 1959, the peak of Cycle 19, perhaps you were born between 1941 and 1945, and probably looked forward to the next peak in activity. That may have been a disappointment when Cycle 20 peaked around 1969, as that had a somewhat broader peak but at a far lower level. You can see it graphically at <http://wm7d.net/hamradio/solar/historical.shtml>. These young adults, now 24 to 28 years old in 1969, might be busy starting families and careers, and no doubt fondly recalling simpler times and the tremendous propagation of their younger years.

Cycle 21 peaked around 1980, and the former teenaged ham of Cycle 19 was now 35 to 39 years old. This was quite an improvement over the last cycle, as was Cycle 22, which looked like an echo of Cycle 21. Cycle 22 peaked around 1991-1992, with a more pronounced double-peak. The former teenager was now 47 to 51 years old, solidly into middle-age, and still wondering if sunspot activity would ever roar back to the levels of the late-1950s.

The following cycle, numbers 23, was another double-peak, but significantly lower in 2000 to 2002 than the previous cycle. Perhaps another disappointment for the now 56 to 60 year old ham, which then sees solar activity slide into a long and low minimum over the next decade, impossible to imagine 60 years earlier. The 160 meter operators, quite happy in this situation with a much quieter Sun, have no such longing for the active Sun of yesteryear.

Now the young ham of the late 1950s contemplates the peak of Cycle 24, apparently much lower than any seen in most of the past century, and expected to grow to maximum this year. Now we have many more tools to observe and measure both solar activity and propagation, and we know that activity could still increase significantly. Some foresee decades of lower activity, but of course predicting future solar activity is a very tricky proposition, and anything could happen.

At [http://www.solen.info/solar/images/comparison\\_recent\\_cycles.png](http://www.solen.info/solar/images/comparison_recent_cycles.png) you can see a comparison of recent cycles, from 21 to the current 24.

While we've seen a number of papers and predictions for a series of quieter sunspot cycles, some disagree. For instance, Michael Proctor, professor of Astrophysical Fluid Dynamics at Cambridge University is not convinced. He was quoted this year as saying, "This present cycle is similar to the weak one that ended in 1913, and that was followed by a strong cycle."

Those were Cycles 14 and 15, and Cycle 15 was only strong relative to 14. Cycles 17, 18 and 19 were stronger than 15, and so were 21, 22 and 23.

It is also important to remember there is wild variability in solar activity. To make those graphs of sunspot numbers appear smooth, each point on the graph actually represents an average of a year of data. When averaged, the flurry of solar activity at the end of 2011 and some future activity in 2013 could appear as a broad peak on a graph.

NASA looks frequently at their predictions for the current cycle, and often adjusts them every month. The latest shows a smoothed sunspot number a bit lower than the forecast from several weeks ago. In the December 10 forecast they predicted a smoothed sunspot number of 72 in the late in 2013, but that number is now 69 in the January 2 release. Note these are the lower international sunspot numbers, which are always less than Boulder numbers presented in this bulletin. Read the report at <http://solarscience.msfc.nasa.gov/predict.shtml>.

## The K7RA Solar Report

With the change from 2012 to 2013, now is a good time to review sunspot numbers and trends. Average daily sunspot numbers in 2013 were up substantially from 2012. From 2004 through 2012 the yearly progression was 68.6, 48.9, 26.1, 12.8, 4.7, 5.1, 25.5, 29.9 and 82.3. I took all the daily sunspot numbers for 2012, added them together, and the sum was 30,133. Divide that by 366 (the number of days in 2012, a leap year) and the result is approximately 82.3. In 2011 it was 10,913 divided by 365, yielding 29.9.

The 2012 average was higher than any year after 2003. But at the peak of Cycle 23, the averages from 1998 to 2003 were all higher: 88.7, 136.3, 173, 170.3, 176.7, and 109.2. It seems unlikely that average daily sunspot numbers this year will reach anywhere near the level of 2000-2002.

We observe a moving 3-month average of sunspot numbers, in an attempt to smooth out some of the variations. Unfortunately, the past three months were much lower than the three month period ending one month earlier. The current average of 74.4, centered on November 2012, is lower than any three month period since averages centered on February and March of 2012.

The 3 month period previous to the current one is centered on October 2012, and covers September through November. The average then was 82.3. To recap averages from previous bulletins, the three-month moving averages of daily sunspot numbers centered on July 2011 through November 2012 were 63, 79.6, 98.6, 118.8, 118.6, 110, 83.3, 73.7, 71.2, 87.3, 91.5, 96.5, 91.9, 89.9, 81.2, 82.3, and 74.4.

Looking at the past week, yesterday we saw a sizable gain in solar flux, when the value went from 106.7, 113.6, 117.8, and 119 to 128.8, on December 30 through January 3. NOAA and USAF predict solar flux at 130 on January 4-6, 125 and 120 on January 7-8, 115 on January 9-10, 110 on January 11, 105 on January 12-13, 110 on January 14-17, 115 on January 18-20, and 120 on January 21-23.

Predicted planetary A index is 5 on January 4-12, 10 on January 13, 5 on January 14-25 and 8 on January 26.

F.K. Janda, OK1HH issues a weekly geomagnetic forecast. This week he says geomagnetic conditions will be quiet January 4, quiet to active January 5, mostly quiet January 6, quiet January 7-9, quiet to unsettled January 10-12, active to disturbed January 13, quiet to unsettled January 14-16, quiet January 17-19, mostly quiet January 20-21, and quiet on January 22-26.

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrl.net](mailto:k7ra@arrl.net).

Sunspot numbers for December 27 through January 2 were 78, 54, 49, 37, 87, 99, and 90, with a mean of 70.6. 10.7 cm flux was 106.8, 105.8, 104.3, 106.7, 113.6, 117.8, and 119, with a mean of 110.6.

Estimated planetary A indices were 1, 2, 3, 4, 2, 1, and 3, with a mean of 2.3. Estimated mid-latitude A indices were 0, 2, 3, 4, 1, 1, and 2, with a mean of 1.9.

### **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***



## For Sale or Trade

### Code Practice Oscillator MiniKits

For sale. \$10 each, includes schematic. All boards are assembled and tested.

Circuit will easily drive headphones or a small speaker.

Each board measures approximately 1.25" square and is great for mounting in a small project box or on a wooden board.

See Dennis K9VMY at the next club meeting, or contact via e-mail [k9vmy@arrl.net](mailto:k9vmy@arrl.net). Note: shipping is not included.

## HamFest Information

### WCRA Mid-Winter Hamfest Wheaton Community Radio Amateurs

Sunday January 20, 2013

Kane County Fairgrounds  
525 South Randall Road  
St. Charles, Illinois.  
Kurt Rubin KB9RTO  
585 Gundersen Drive  
Carol Stream, Illinois 60188  
630-604-0157  
[kb9rto@yahoo.com](mailto:kb9rto@yahoo.com)

### Capital City Hamfest Saturday February 9th, 2013 9 a.m. to 1 p.m.

Memorial U.C.C. Fellowship Hall  
5705 Lacy Road  
Fitchburg, WI

Steve Johnson, WD8DAS  
[wd8das@arrl.net](mailto:wd8das@arrl.net)  
[www.w8das.net/hamfest.html](http://www.w8das.net/hamfest.html)

### Mid-Winter Interclub SwapFest Saturday February 16th 2013 Milwaukee Radio Amateurs Club and Milwaukee Area Amateur Radio Society

12560 Townsend Street  
Brookfield Wisconsin 53005  
David Shank, KA9WXN  
5943 Edgerton Ave.  
Greenfield Wisconsin 53200  
414-944-1036  
Talk-in 145.390—PL 127.3  
[ka9wxn@gmail.com](mailto:ka9wxn@gmail.com) 815-337-4001





P.O. Box 8465, Rockford, IL 61126

Website: [www.w9axd.org](http://www.w9axd.org)

E-mail: [jholich@comcast.net](mailto:jholich@comcast.net)

<u>Nets</u>		
Monday 8 PM	RARA Info.	146.610 - 114.8 PL
	RARA	147.000—114.8 PL
Monday 9 PM	10M SSB Net	28.375 +/- USB
Daily 6 PM	Illinois Traffic Net	3.905 LSB

place address label here

## January 2013

### 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.

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