

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.

March 2011

Presidents Log

INSIDE THIS ISSUE

Presidents Log -	page 1
Treasurer's Rpt. -	page 2
Secretary's Rpt. -	page 3
KR7A Solar Rpt -	page 4
KR7A Solar Rpt -	page 5
VEC -	page 6
Bits and Pieces -	page 7
Bits and Pieces -	page 8
Hamfest Info -	page 9

Another month closer to spring. Do you have your antennas tuned up and ready to put up? How many kits were built this winter and are ready to go on the air?

February's meeting was enjoyed by all who came. Lots of good discussion and almost every one got to try a key and see how they worked.

This month's program will be presented by Robert Larson. The subject will be LEO Satellites, how to work them for both beginner and expert.

Hope to see everyone there!

Tom N9VJU

NEXT MEETING

FRIDAY

March 11, 2011

7:00P.M.

Location:

Foundation Room
Saint Anthony OSF
5666 East State Street
Rockford, Illinois

Opportunities

The Monday night RARA Information Net needs a larger roster of Net Control Stations

If you are interested in becoming a Net Control Operator, please contact either one of the Officers or Board members. It's an easy thing to do, and you work from a script. No need to worry what to say. Let's get you on the schedule.

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



From the Treasurer

Amended 19 FEB 2011 to include annual web hosting expense for www.w9axd.org

Treasurer's Report:

For the period 28 DEC 2010 to 23 JAN 2011
submitted to the Ham Rag by John G. Olson 2011 RARA treasurer.

Income :	\$ 577.04
Expenses:	\$ 654.26
Ending Checkbook Balance:	\$3850.25
Ending Repeater checking balance:	\$ 300.00 (per last statement)
Ending Savings Balance	\$3214.02
Ending total cash on hand:	\$7364.27 (net decline \$77.20)

Treasurer's Report: For the period 24 JAN,2011 to 20 FEB 2011
submitted to the Ham Rag by John G. Olson 2011 RARA treasurer.

Income :	\$ 171.00
Expenses:	\$ NONE
Ending Checkbook Balance:	\$4021.25
Ending Repeater checking balance:	\$ 300.00 (per 31 JAN 2011 statement)
Ending Savings Balance	\$3214.02 (no change)
Ending total cash on hand:	\$7535.27 (net gain \$171.00)

REMINDER! 2011 dues are payable now.
Please be kind and fill out the form so I can verify that your information is current....

Secretary's Report



RARA Meeting Minutes January 2011

The February 11, 2011 meeting of the Rockford Amateur Radio Association was called to order at 7:08 PM by President Tom Shouler N9VJU with 16 members and guests present.

Gordy Seaman KC9NEX moved we accept the minutes as printed in the Ham Rag, John Olson W9JGO seconded.

Financial report for January was given by Treasurer John Olson W9JGO;

Cash on hand;	\$7471.65
Income	577.04
Expenses	546.86
Checking acct	3957.63
Repeater acct	300.00
Savings	3214.02

Motion to accept by Dave Bond W9MZ, second Chuck Derwent K9SAN approved

Old Business; Gordy Seaman KC9NEX said we will be raffling off the Afghan which was hand made and donated by John Olson's (W9JGO) wife. Tickets are still available for the drawing to be held later tonight.

New Business; Dan Hunt KC9ATR has some nice 12V 4A gel cell batteries he is donating to RARA to be raffled off starting tonight.

We had a break followed by a great live program on CW keyers presented by Tom Shouler N9VJU. Tom brought several along for demonstration as well.

Motion to adjourn by John Olson W9JGO, seconded by Jim Miller W4JR. Meeting was adjourned at 8:15PM followed by fellowship of those present.

Respectfully submitted
John Lawence N9OTC
Secretary; RARA

The K7RA Solar Update

From Tad Cook, K7RA
Seattle, WA February 25, 2011
To all radio amateurs
ARLP008 Propagation de K7RA

The average solar flux was nearly unchanged this week, up just 0.3 point to 103.8, while the average aily sunspot number was down 4.9 points to 65. Sunspot groups 1161 and 1162 -- which brought so much activity last week -- have now rotated across our Sun's western horizon, but new sunspot group 1163 has now emerged over the eastern limb. For Thursday, February 24, we saw a sunspot number of 23. The solar flux was 88.9, planetary A index was 3 and the mid-latitude A index was 0.

The outlook from NOAA/USAF shows 90, 88 and 88 for February 25-27, then 86 on February 28 through March 4, 95 on March 5, 100 on March 6-8, 105 on March 9 and rising to 110 on March 10-15. The predicted planetary A index for February 25-March 2 is 7, 8, 8, 15, 12 and 8, then 5 on March 3-6, and 7, 8, 8, 7 and 5 on March 7-11. Geophysical Institute Prague expects quiet to unsettled conditions for February 25-26 and quiet conditions on February 27 through March 3.

The predicted geomagnetic storm just prior to last weekend's DX contest did not persist, lasting only half a day through February 18. It was triggered by a flare on February 15. Bob Marston, K6TR, sent a link to a high definition video of the flare, as seen through the Solar Dynamics Observatory. It can be viewed on YouTube at, http://www.youtube.com/watch?v=IJViaJ_kgZ0.

Note that you can select resolution of the image by clicking on the 360p on the lower right and can run it as high as 720p. It takes some time to load, varying dependent on your Internet connection speed. Best to just let it load, then run it again to actually watch it.

Dean Straw, N6BV, observed last Friday that the "latest solar wind sequences show that the Bz field was strongly north-directed (rather than south-directed) from 05 to 10 UTC Feb 18, so we probably dodged the big bullet for this ARRL DX CW weekend." He is referring to an element of the IMF, or interplanetary magnetic field. When Bz points south, our planet is vulnerable to flares and resulting solar wind, but when Bz points north, we tend to be protected.

Carl Luetzelschwab, K9LA, has an interesting and informative column on 10 meter sporadic-E propagation in the current issue of WorldRadio Online. Carl mentions downloading N6BV's presentation on sporadic-E titled, "HF Propagation and Sporadic-E, A Case Study: WRTC 2010."

Bill Collins, KB1MSJ, of Boylston, Massachusetts, is excited about openings on 10 meters. He wrote: "On Friday, February 18, there was a 10 meter band opening here on the East Coast. I was able to talk to Aruba, Brazil and El Salvador, all with only 25 W of power on a homebrew 10 meter antenna. I have been waiting for this to happen for years, as I only have my Tech license (working on General) and have an old 10 meter radio".

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



Elwood Downey, WB0OEW, of Tucson, Arizona, wrote: "Just wanted to mention you seem to have missed the highest actual 10.7 cm flux reported from Penticton for all of last week. On February 13 at 1800, it was 125.7. The value you report for February 13 -- 106.8 -- was reported two hours later at 2000. Normally I wouldn't bother to mention it, but this was higher than any value entire week and is something for the record books."

Yes, I saw that, but only the local noon number is the "official" number for the day. Elwood is talking about the numbers as they are reported directly from Penticton. Note that there are three readings per day, and the local noon number is at 2000. NOAA rounds off the solar flux noon reading to the nearest whole number, and reports it at, <http://www.swpc.noaa.gov/ftpdir/indices/DSD.txt>. I do like to look at the morning and afternoon numbers though to try to spot trends.

Sometimes NOAA will report a lower value for the day than the noon reading at Penticton. This is if the receiver at Penticton was overloaded, and the value is regarded as anomalous. But I don't have any way of knowing when that receiver is overloaded. My only clue is when NOAA reports a lower value.

In Propagation Forecast Bulletin ARLP006 we mentioned Joan Feynman and erroneously reported that she is physicist Richard Feynman's daughter, when in fact she is his sister. Thanks to Walt Knodle, W7VS, Michael A. Gottlieb and Gregory Andracke, W2BEE, for the correction. Greg is a filmmaker and mentioned that he met Richard Feynman while working on a documentary with Bill Moyers on the 45 year anniversary of the atomic bomb. Michael A. Gottlieb (who is not a ham) runs a website devoted to The Feynman Lectures on Physics. He also published the book Feynman's Tips on Physics: A Problem-Solving Supplement to the Feynman Lectures on Physics. He works in the Caltech Physics Department and is editor of two editions of the Feynman Lectures on Physics.

Another correction, this time from last week's bulletin, we mistyped Bob Marston's call sign (K6TR) as K6TW. We got a nice note about this from Tim Goodrich of Torrance, California, the proud owner of new vanity call K6TW, which he has held for just one month.

AMATEUR RADIO EXAM NOTICE

February 19th there were 2 applicants resulting in 2 new licenses.

New

Wayne K Andersen - Technician
Sean M Brooks - Technician

Northern Illinois Volunteer Examiners will be holding the next Amateur Radio exam session in Rockford, IL on Saturday, March 19, 2011.

Location:

St Anthony Hospital
5666 E State St
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)

Rusty Cordell, WB9QYV

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 - Tom Shouler, N9VJU, 815-877-9129
Vice President - OPEN
Secretary - John Lawrence, N9OTC, 815-397-4624
Treasurer - John Olson W9JGO

Directors:

Al Fischer, KD9CA, 815-885-3926
Gordon Seaman, KC9NEX, 815-234-5034
Steve Thorne, K9LLI, 815-399-9161
Web Master - Robert Larson, KC9ICH, 815-226-1875
Ham Rag Editor - Jim Holich, AB9SX, 779-522-8796
Repeater Chairman - Chuck Ingle, AB9KA, 815-979-1049

MUF, LUF, and FOT - The Basics of the Maximum Usable Frequency

There are two definitions for the abbreviation, "MUF." The International Telecommunications Union ITU-R (Recommendation P.373-7 10/1995, in force) recommends two definitions for MUF:

1. Operational MUF (or just MUF) is the highest frequency that would permit acceptable operation of a radio service between given terminals at a given time under specific working conditions (antennas, power, emission type, required S/N ratio, and so forth), and,
2. Basic MUF, being the highest frequency by which a radio wave can propagate between given terminals by ionospheric propagation alone, independent of power.

The difference in frequency between operational MUF and basic MUF is in practice from ten to thirty-five percent. In most prediction software and in amateur radio and shortwave listening references the MUF refers to the first definition. On each day of the month at a given hour, there is a maximum observed frequency (MOF) for a mode. The median of this distribution is called the MUF. In other words, the MUF is the frequency for which ionospheric support is predicted on 50% of the days of the month, i.e. 15 days out of 30 days. So on a given day communications may or may not succeed on the frequency marked as the MUF.

To ensure a good communication link between two locations, the operating frequency is typically chosen below the predicted MUF. A commonly used formula for finding the optimal operating frequency for a given path is to calculate between 80 to 90% of the MUF. Depending on what model you use for determining MUF and OMF, this percentage of usable days may be 50% or 90%. VOACAP uses 50%, for example. Synonyms for the optimal operating frequency are FOT (frequency of optimum traffic), OTF (optimum traffic frequency or optimum transmission frequency), and OMF (optimum working frequency).

So, as an example, if you find that the MUF is 23 MHz on a day with a Smoothed Sunspot Number of 130, over a path between you and some far off point, you would find the OMF as between 18.4 MHz and 20.7 MHz. You might be able to work 15 meters to that distant point. Most likely, you would find better conditions on 17 meters.

There are more factors involved in finding the "right" frequency to use between two points. These include absorption by lower regions (like the D layer), the "take off angle" of the radio signal from the originating antenna, and so forth.

The ionosphere is made up of several regions. The ionosphere is that part of the atmosphere, extending from about 70 to 500 kilometers, in which ions and free electrons exist in sufficient quantities to reflect and/or refract electromagnetic waves. These regions are the F2 region (250 to 400 km above the Earth), the F1 region (160 to 250 km), the E region (95 to 130 km), and the D region (50 to 95 km), under which is the Troposphere and so forth.

When a radio signal (an electromagnetic wave) propagates into the ionosphere, it might be absorbed, attenuated, refracted, or it might shoot right through and out into space. If a signal makes it through the lower regions, a redirection will occur for those signals whose frequencies are at or below a "critical" frequency (that being the frequency just below those that punch through the F regions and out into space). The redirection is a bending by a complex process involving

reflection and refraction. Depending on the angle of the radio wave (or, "angle of incidence") as it enters the region where it is redirected, the signal will be "reflected" back to the Earth at some variably distant point. Think of a flashlight beam that you shine at a mirror. When you shine on the mirror straight on, you have the beam of light coming almost straight back at you, but if you angle the light beam, the reflected light will move further away from you. The amount of radio wave bending depends on the extent of penetration (which is a function of frequency), the angle of incidence, polarization of the wave, and ionospheric conditions, such as the ionization density.

The Lowest Usable Frequency (LUF) is that frequency in the HF band at which the received field intensity is sufficient to provide the required signal-to-noise ratio for a specified time period, e.g., 0100 to 0200 UTC, on 90% of the undisturbed days of the month. The amount of energy absorbed by the lower regions (D region, primarily) directly impacts the LUF. If a signal at 5 MHz is totally absorbed by the D region, but a signal at 6 MHz makes it through without a lot of loss, and the E or F layer refracts the 6 MHz signal, the LUF will be near that 6 MHz part of the spectrum. The MUF might be 12 MHz. The OMF (optimum working frequency) will be somewhere between 6 and 12 MHz, probably around 10 MHz.

Frequency of Optimum Transmission (FOT): In the transmission of radio waves via ionospheric reflection, the FOT is the highest effective frequency (or best working frequency) for a given path that is predicted to be usable for a specified time for a percentage of the days of the month.

(for more information, here are a few references to check out:

[FS-1037](#)
[MOF](#)

[Critical Frequencies](#)

Boy!! Don't we wish for the numbers mentioned in this article.

Things are improving, and I hope this helps to minimize the frustration in making contacts. I'm sure that this is familiar to most of our older members, but it doesn't hurt to review. It could also be a benefit to our newer generals.

Another thing that is interesting is the beacon project. You might be surprised at the propagation paths that may be open to you. Try Google for a lot of information/

Don't forget 6 meters. Summer is not more than a wish away.

Storm Spotter Classes

According to http://www.crh.noaa.gov/lot/?n=spotter_talks A Rockford spotter class will be presented on the 10th of March, 7 PM in the Public Safety Building at the Chicago-Rockford Int'l Airport.

Freeport's spotter classes are also on March 10 at 1:00 PM and 6:30 PM at Highland Comm. College, Building H, Room 201. The street address is 2998 West Pearl City Road in Freeport, IL according to the Quad Cities NWS website <https://apps.weather.gov/outreach/IL.php>

Hamfest Information

AES Superfest

Our 17th Annual ARRL Sanctioned Show!

DATES: Friday, April 1st (2:00 p.m. to 6:00 p.m.) and Saturday April 2nd (8:30 a.m. to 3:00 p.m.)

WHERE: AES Milwaukee, 5710 W. Good Hope Road

WE PROVIDE: A FREE table with electrical in an area where you can interact with other clubs, promote and recruit new members. There is NO Admission; your organization is invited to attend without obligation.

We are again expecting a large participation from major Ham Manufacturers and area clubs/organizations. There will be VE testing, interesting forums, a fox hunt, prizes, the Gordon West show and more!

SET-UP:

Friday (4/1): Access 9:00 a.m., show opens at 2:00 p.m.
Saturday (4/2): Access 8:00 a.m., show opens at 8:30 p.m.

INFORMATION & TABLE RESERVATION:

Have a Club Representative contact Ray Grenier, K9KHW at: 414-881-3528 (cell) or e-mail: rayk9khw@aol.com

Starved Rock Radio Club

June 5th, 2011

Bureau County Fairgrounds

Princeton, Illinois 61356

I-80 to Exit 56 (IL Rte 26) then South 2 onto IL Rte 6 , then West 1/2 mi

Chicago FM Club

Saturday and Sunday September 10th and 11th, 2011

Boone County Fairgrounds

8791 Route 76

Belvidere, Illinois

6 a.m. to 3 p.m. both days

Complete listing at <http://www.chicagofmclub.org/radioexpo2011.html>



P.O. Box 8465, Rockford, IL 61126

Website: www.w9axd.org

E-mail: jholich@comcast.net

Nets

Monday 8 PM	RARA Info.	146.610 - 114.8
Thursday 7 PM	ARES	147.255 + 114.8
Thursday 8 PM	SATERN	146.610 - 114.8

place address label here

March 2011

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