QRZ NEWS

A MONTHLY PUBLICATION OF
SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB, INC
PO BOX 1033 - LANCASTER, PA 17608-1033
(Founded June 1960)
AN AFFILIATED SPECIAL SERVICE CLUB OF THE ARRL, INC.
"Public Service through Communication"
Website: www. K3IR.org
Email address: k3ir@arrl.net
Repeaters: 145.230 - 449.975 - Packet 145.030 - ATV 923.250, FN10se

January 2009

Next meeting Wednesday, January 21 at 1900
Rapho Township Municipal Building

HIGHLIGHTS OF THE DECEMBER 2008 MEETING OF THE SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB (SPARC)

Held Wednesday, December 17, 2008, at the Rapho Township Municipal Building

New Members:

We received an application for membership from Douglass Heilman, Sr., WJ3W. The application was accepted unanimously.

Old Business:

- Ted Freedman is still looking for someone to take over as net coordinator.
- George Gadbois is always looking for articles to put in the club newsletter.
- Harry Bauder reported on his experience volunteering as a ride operator at Hersheypark.

New Business:

- Mike Warner reported that he sold an old mic on Ebay for $99. He also sold two other mics for $0.99 each and a scanner for $0.99.
- During a discussion of possible activities for the club, Rick Watson suggested a tour of Ron Frisbie's radio museum in Akron. Mr. Frisbie has been collecting tube-type radios for many years. Those present expressed interest in the idea. Rick will contact Mr. Frisbie and try to arrange a date sometime in April or May.
- A discussion of possible club officers followed. After discussion, the following slate was proposed:
  Harry Bauder – President
  Rick Watson – Vice President
  Dave Sarraf – Secretary
  Ted Freedman – Treasurer
  Mike Warner – Board of Directors
  Jim Silvius – Board of Directors
  Dave Payne – Repeater Trustee

The slate was approved unanimously.

Upcoming Events:

- Wednesday, January 21 – Membership meeting at 7 PM.
- Sunday, April 26, 2009 – Tour de Ephrata Bike Race.

SPARC Recycling Program

The recycling program for paper remains suspended. There is no recovery in the recycled paper market in sight.

Aluminum cans are down in price, but still viable as a source of income. Many people are eager to support recycling so let your friends and coworkers know that you will recycle aluminum cans.

Bring the cans to a club meeting or drop them off at the club site or Dave Payne's mini recycling center at 1373 Malleable Rd, Columbia, Pa. It's the house with the antenna tower in the back yard.

Recycling has been our major source of income for many years. We need replacement income sources immediately.

Editor's Notes

High power analog television broadcasting will cease at 23:59:59 February 17th. The digital TV broadcasting era begins at 00:00:00 on February 18th.

WGAL ran several on the air tests to determine customer readiness for DTV on November 17th and December 17th. I expect additional testing on January 17th. I assume other TV stations are making similar tests, but I have no information on those tests.

You can look up WGAL results at http://www.wgal.com/money/18000464/detail.html.

The government fund for subsidizing converter boxes has run out of cash. Anyone requesting a coupon now goes on a waiting list. Unless Congress appropriates more money, they must wait for unredeemed coupons already issued to expire.

As of January 9th, the waiting list contained 1.1 million requests. Congress will probably approve additional coupons.

Without the coupon, converter boxes cost $50 - $80. I visited Circuit City, and they still have a good inventory of Zenith DTT900 and DTT901 converter boxes.

If you need a converter box, I suggest you purchase one soon. I doubt that retailers will restock this one time item. There is a long lead time to get a production run set up and delivered by an Asian producer, and they want money up front.

Incidentally, while I was at Circuit City, I looked at their HDTV receiver displays and noted that the reproduction of off the air standard analog pictures (an Eagles game) was poor. I heard excuses about the weaknesses of their in store signal distribution system, but they didn't offer to show me a good quality analog picture on an HDTV receiver. Prerecorded HDTV signals looked good, but there was not much action in the demos.

I appreciate all reports on DTV reception. The results are inconsistent. Some better some worse.

It does appear that fringe area viewers who have never really had a high quality picture are probably in trouble. Places like vacation cottages and hunting lodges where snowy pictures have been acceptable may well be left with no TV reception unless they can install a satellite receiver.

A cottage where I have frequently vacationed in Wakefield, NH will probably be reduced to one viewable station in Portland, ME. That is the only relatively clear path to the horizon over a lake. 2m SSB works well up the Maine coast and

as far south as Cape Cod. After that there isn't much.

See the report below by Joe Lockbaum, WA3PTV, for his recent experience in a fringe area. This is consistent with a previous report by Gerald, KB3GNB. We'll only know for sure on February 18th.

Thanks to Jim Keeth, AF9A for supplying the following link to Tech Notes on TV. http://www.tech-notes.tv/Archive/tech_notes_141.pdf

73, George W3FEY

Fringe Area DTV Reception

I have Ch58 signal back again. For about two days, I could not receive ch58 at all here. I don't have any idea why I wasn't getting them?? That was before the big Ice storm here too. I guess this is what we will have to put up with after the transition on some UHF channels?? Especially during bad rainy Icy weather. Also, with all the icing conditions later on last week, I could not get much of any uhf/vhf digital TV, including TV from my separate 18 inch FTA NASA KU band Sat dish.

I was able to continue seeing some of the uhf/vhf analog channels though. Another usually really good digital channel I can get here, is channel 5. Again, I could get the analog channel ok but not the digital sidecars during the Ice storm. They too are now back ok.

I can get Ch4 Analog channel here but is usually weak. Once in a long while, I can see the digital sidecar channels intermittently. Ch11 Analog is one of my good analog channels. Occasionally, I can see the Ch11 digital sidecar channels here too.

I hope after the stations go to more power on their assigned Freq, next month, I will be able to get those digital channels here on a regular basis.

Ch20, WDCA, Washington station is usually weak on Analog. Its digital Signal is really good here. I can't remember if I wasn't getting that channel(20-1 digital) during the Ice storm or not?

I wont be able to tell until the big changeover occurs, what I will be able to get and how well I will get them, until then.

Thanks for the info about Ch58 being on the air during the time I wasn't getting them here.

I just heard that the new digital Channel width will be the same @ 6 mHz
wide as it is with the old Analog channels(can get 4 channels in the same block). I also think that a station transmitter will still need to use a VSB filter as they had to during the Analog days??

73's Joe WA3PTV
Mercersburg, PA

Operating Events

The ARRL January VHF Sweepstakes will be 17 – 19 January. The contest period begins 1900 UTC Saturday, and ends 0359 UTC Monday (**January 17-19, 2009**).

Upcoming Hamfests

Greater Baltimore Hamboree and Computerfest – Sat. Mar.28 and Sun. Mar 29 at the Timonium Fair Grounds. See http://www.gbhc.org/ for details

York Spring Hamfest - SATURDAY APRIL 18, 2009. 8:00 am to 2:00 pm BROOKSIDE PARK, 4054 FOX RUN ROAD DOVER, PA

No web link available at this time.

ARES/RACES

As part of the clubs commitment to emergency communications, the SPARC repeater system is maintained as available for linking with other area repeaters.

Lancaster County VHF Net is held on the first Tuesday of the month at 2030 hours local time. Presently being held on the 145.230 and 147.015 MHz repeaters with minus offset and 118.8 PL.

Pennsylvania RACES HF Nets are held at 3993.5 kHz LSB on all Sundays except holidays.
The statewide net is on the first Sunday of the month at 0800 hours local time.
The Central Area (including Lancaster County) net is at 08:30 local time.

SPARC Nets

SPARC holds nets on the 2nd, 3rd, 4th, and 5th Tuesday (every Tuesday except the first) at 2030 local time on 145.230 MHz minus offset and a PL of 118.8.

Club Officers

President Harry Bauder – WA3FFK
Vice-President: Rick Watson - N3SWJ
Secretary - Dave Sarraf. - N3NDJ
Treasurer - Ted Freedman - K3KSA
Repeater Trustee - Dave Payne - N3LOM
Past President - Mike Warner – N3XPD
Board of Directors - Jim Silvius – KW3E

Correction to EME on 23cm

In the December issue, I erroneously attributed the DL3OCH portable 23cm EME operation photo to K1DS. Here is the photo with corrected caption. See the article below on the K1DS portable EME station.

George, W3FEY

Bodo, DL3OCH portable EME in Monaco

K1DS Portable 23cm EME Station

Attached are a series of pictures of the set-up by which I made 1296 QSO, and the future set-up with the trailer and dish. The trailer now has an erection fixture and a winch so that I can place the dish and its mounting ring and elevation jack atop the short mast that houses the azimuth

rotor. You can see the septum feed and scalar ring in another picture. The trailer will be pulled by my rover van.

I used the WIMO long 1296 Yagi with an az/el setup right on the van when I made the EME WSJT QSO with K2UYH.
Let me know if you need any more info or explanation.

73, Rick, K1DS

(Here are selected photos to show the setup used to work K2UYH on JT65. I'll report progress on the dish implementation in future issues. Ed.)

Wimo antenna deployed for terrestrial operation. The antenna is a 67 element SHF yagi with 21.9dBi gain.

K1DS operating position. You can see the planar reflector of the Wimo antenna in the upper left corner. Here the up angle on the antenna is for EME operation.

QRZ.com Enhanced

QRZ.com recently enhanced their web pages with new features. One of the added features is a map display showing the location of the station that you are looking up. If you are a logged on user, it will also provide the antenna heading and distance to the target station. This display is based on the latitude and longitude data supplied by each of the stations.

Report from QRZ.com

QRZ.com estimates the latitude and longitude values using the following decision tree:

USA Callsigns

1. Use the user input lat/lon, if provided
2. Calculate the lat/long from the postal address using our Geocode database. See Wikipedia for Geocoding
3. If a geocoded solution cannot be found, use a Zip Code database to reach an approximate lat/long pair.
4. As a last resort, we may use a database of US States to indicate the geographic center of the state

DX Callsigns

1. Use the user input lat/lon if provided
2. Use our DXCC database to provide the lat/long of the geographic center of the country.

Grid squares are calculated directly from whatever lat/lon coordinate pair is reached using the above logic. The user never needs to calculate a grid square if the lat/lon is known.

In addition, setting the precise lat/lon is made extremely easy by moving the map pointer to your exact location. A GPS is completely unnecessary, if you can read a map. Once you place the pointer at your location, your lat/lon and grid square data is instantly updated. For users who wish anonymity, the map pointer may be moved to a fictitious location (such as a lake, etc).

We try to NOT indicate a grid square on our maps when either a zip code or country center is the coordinate source for the callsign.

Our Maps, Geocode and DXCC databases are among the new QRZ features recently added. We did not have these until just recently.

For long distance communications, a rough lat/lon is sufficient for beam heading purposes.

Fred Lloyd, AA7BQ
Publisher, QRZ.COM
flloyd@qrz.com

(Ed note: UHF communications demand the most accurate beam heading possible. A six digit grid square is the minimum starting point.

Typical operating practice is to start on a low band such as 23cm and then trim the antenna heading as you QSY up in frequency.)

All operators should register with QRZ.com to enable the beam heading display. A GPS unit is a quick method for deriving your exact latitude and longitude. Most GPS units can be configured to display the six digit grid square instead of latitude and longitude.

See the October issue of QRZ News for a discussion of how to deal with the grid square if you happen to have a grid boundary running through your station.

There is a free download program available from W3KM, http://www.qsl.net/w3km/ , which you can use to calculate your six digit grid square. The Squares program is downloaded with the free VHF contest logger. For detailed information on grid squares, see the ARRL web site.

Wavelengths Turn Upside Down

Here is a report on the northeast 23cm net of 23 December 2008 when the wavelengths turned upside down.

Monday night at 2130 local time is 23cm net time in this area. The Pack Rats net on 1296.100 MHz has been reported previously. K3TUF, Ephrata, PA is net control.

There is also a northeast net at the same time on 1296.110 MHz with WA2LTM, Cranbury, NJ as net control. 23 December 2008 was a good night for the northeast net with 8 stations in New Jersey, New York, and Connecticut checking in. One of the net activities during that session was when Doug, WA2LTM, coordinated **160m** QSOs between W3VIR, Holland, PA; and WB2SIH, Armonk, NY and N2GHR, Centereach, NY. N2GHR is about half way out on Long Island.

Coordinating 160m from 23cm? That's not the way it's supposed to happen.

Report by Doug, WA2LTM

DL3OCH Portable EME Operation

Well, for beginners I strongly recommend to keep the system as simple as possible. All I am using is just the single yagi, about 5m coax cable and the transverter. The advantage of using a transverter instead of a 23cm radio should be clear. It is much more sensitive and does not require an additional preamp (as long as the coax to the antenna remains short).

The advantage of the single yagi beats several disadvantages. Of course I lose 3dB due to polarization loss since most other stations are circular polarization. But look at this; I do not have any coax relay. I can never choose the wrong polarization. Everybody will hear me and I hear everybody. I do not need any kind of sequencer.

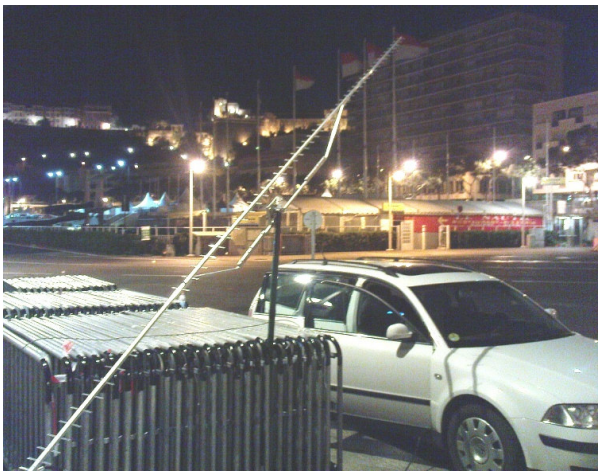
The yagi is assembled in just 10 minutes. I need 20 minutes to put my station on the air (including starting laptop etc.). Since the cable is short, I do not need an additional pre amp. All these are things that can fail and can lead to an unsuccessful Dxpedition. As soon as I connect the transverter to the antenna and point the antenna at the moon, it works. The yagi has 21.9dBi gain, which is just 2dB less than a 1.8m dish. My yagi fits easily into my luggage that I can check in at the airport.

To handle one yagi is very simple. I point it visually at the moon. Adjusting every 10 to 15 minutes is enough since the 3dB beam width angle is about 14 degrees. I sometimes do not see the moon at all. In these cases, I simply use a compass to adjust the direction.

Using two or more yogis has another disadvantage. It brings practically 2 to 2.5dB more gain (due to additional losses on coupler and coax). This increase in gain creates more and bigger side lobes which leads to higher noise level on 23cm. So, in the TX path you have the 2 to 2.5dB more gain but in the RX case you have only about 1.5 to 2dB more effective gain because of the higher noise. It gets even worse with four or more yogis. So, one long yagi (about 5m) seems to be the optimum regarding weight, portability, costs and results.

The activity has increased a lot especially on 23cm. The smallest station ever worked with this setup was RW3BP who used a 2.4m offset dish and 300W. If you take a look at people's equipment you will see, that most of them would be capable of working a single yagi station if they are using JT65. You can always turn off the deep search decoder, which simply needs a little more time until the QSO is done.

Vy 73 de Bodo, DU9/DL3OCH



DL3OCH in 3A, Monaco

Bodo, HB9EHJ in T7, San Marino

TF/DL3OCH activity. I forgot my mast in OY so I had to find something else. ...something that is not really easy in TF.

On Line Publications

The publisher of World Radio magazine has decided it is time to retire and sold the publication rights to CQ Magazine. Subscribers to World Radio will have their print subscriptions filled by CQ Magazine subscriptions. World Radio will continue to be available as a free on line publication.

World Radio Sign Up

WorldRadio Online E-mail Notification List Established

(Hicksville, NY) January 8, 2009 -- A new e-mail list has been established to notify readers of the availability of each new issue of *WorldRadio* magazine, which is converting to a free online-only publication (titled *WorldRadio Online*) as of its February, 2009 issue.

WorldRadio subscribers and any other interested people may sign up for the list at < http://mailman.sunserver.com/mailman/listinfo/WorldRadio-L>. Direct links to this signup page will be posted on both the CQ magazine website at < www.cq-amateur-radio.com> and the old *WorldRadio* website at <www.wr6wr.com >.

Monthly e-mail alerts will include highlights of each new issue, along with instructions and hotlinks for connecting with the online issue. The e-mail addresses will be used only by CQ Communications, Inc., and will not be rented or sold.

Each issue of *WorldRadio Online* will be posted in PDF format, permitting readers the choice of browsing articles online or downloading the issue to their own computers to read at their convenience or even to print out in part or in whole. Access to *WorldRadio Online* will be free of charge.

Most of *WorldRadio*'s columnists will continue to write for the new online edition. In November, 2008, CQ Communications, Inc. purchased *WorldRadio* upon the decision of founding publisher Armond Noble, N6WR, to retire and sell the magazine.

John B. Johnston--
W3BE

Read THE RULES SAY ... in WorldRadio Online at <http://www.cq-amateur-radio.com/>
Question about the amateur service rules? BE Informed!
http://w3be.home.att.net/
john@johnston.net
Read our rules - Heed our rules
www.gpoaccess.gov/ecfr/ [title 47] then [Part 97]
http://wireless.fcc.gov/ [amateur] or [ULS]

Enforcement reports are at:
www.fcc.gov/eb/AmateurActions/
Report rule violations to fccham@fcc.gov

Ham Mag Sign Up

Ham Mag formerly available only in French is now available in an English version. This magazine is published by Vincent, F5SLD.

Go to http://ham.france.free.fr/crbst_17.html to download the magazine or sign up for a subscription.

THE ELECTROMAGNETIC SPECTRUM

By Max Peters, KI6NJ

PART 1

Introduction

This vignette is being published as an information item. This issue, Part 1, includes:

- **A brief history of the events and scientists that contributed to the discovery of the *electromagnetic spectrum*.**
- **A table depicting the overall organization and scope of the *spectrum*.**

Part 2, which will be published latter, will discuss the scope of the *spectrum* in more detail and the ITU designated radio and microwave frequencies i.e. region of the primary interest to us and our craft.

A Brief History of Events.

Like many great discoveries in science, great men as Newton, Huygens, Maxwell, Planck, Einstein, Bohr, and De Broglie spread the trail of the electromagnetic spectrum enlightenment over several centuries.

In the 17th Century, Sir Isaac Newton in his *Treaties on Opticks* gave us the notion that light traveled in straight lines and "had small bodies emitted from shinning substances." Christian Huygens thought that light was a "wave motion." In the 19th Century, James Clerk Maxwell concluded that light and similar waves having an electric field and a magnetic field were all electromagnetic waves. Hence, the electromagnetic wave theory was accepted as the theory until the early 20th Century. Planck, Einstein, and Bohr's research work showed that electromagnetic energy was "quantized." And that these "quanta" were discrete amounts of energy known as *photons*. This duality of wave vs. particle theory was very disquieting to the physics community until about 1924, when a French physicist Louis de Broglie concluded, "waves are particles, and particles are waves."

The Electromagnetic Spectrum.

My candidate for the *electromagnetic spectrum* is shown in Table 1. This table shows the conventional components such as **frequency** and **wavelength** and a column entitled **quantum energy**. In essence the electromagnetic spectrum is a set of frequencies or wavelengths created by oscillating electric charges, *i.e.* spinning electrons. Charges can be of two types, coherent and incoherent.

To be continued.
73 Max KI6NJ

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[1] Much of our basic understanding of the electromagnetic spectrum began with the study of light.
[2] Famous for his curl equations on *electromagnetic radiations.*
[3] This duality issue gave rise to several Nobel awards.
[4]My table is slight modification of Table 1.3 THE ELECTROMAGNETIC SPECTRUM, Grant R. Fowles, Introduction to Modern Optics, 2nd Ed. (DOVER PUBLICATIONS New York)

Table 1 Continued Next Page

The World Above 50 MHz

See February 2009 QST for a detailed review of the implications for Amateur Radio of the DTV conversion by Gene Zimmerman, W3ZZ. Gene includes information and references on which channels will be reallocated.

Channels 2-6 will be less occupied and channel usage will increase on channels 7-13. Note Gene's comments on the use of DTV converter boxes for TV Dxing. Maybe you should have one in the shack even if you don't need one for your TV.

Table 1. THE ELECTROMAGNETIC SPECTRUM

Type of Radiation	*Frequency* Hz		*Wavelemgth* m		*Quantum Energy* eV
"'Wave" Region					
radio waves	30 kHz	300 MHz	10 km	1 m	< 0.000004 eV
microwaves	0.3 GHz	300 GHz	1 m	1 mm	
"Optical" Region					
infrared	1 THz	430 THz	300 um	0.7 um	0.004 eV
visible	439 THz	570 THz	700 nm	400 nm	1.7 eV
ultraviolet	470 THz	10 PHz	400 nm	30 pm	2.3 eV
"Ray" Region					
x-rays	10 PHz	10 EHz	30 pm	30 fm	40 eV
gamma rays	10 EHz	>10 EHz	<30 fm		40 keV

Values are only approximate

SI UNITS

	prefix	exponent (pos)		prefix	exponent (neg)
E	*exe*	18th	*m*	milli	3rd
P	*peta*	15th	*u*	micro	6th
T	*tera*	12th	*n*	nano	9th
G	*giga*	9th	*p*	pico	12th
M	*mega*	6th	*f*	femto	15th
k	kilo	3rd	*a*	atto	18th