

Club Repeaters:

Erie:

146.610-

PL 127.3 hz

Waterford:

146.82-

PL 186.2 hz

QUARAE



Volume 5, Issue 3

March 2006

CW Reform on Hold at the FCC

If you are waiting for the Morse code to go away, you will have to wait a bit longer. This, according to the ARRL which says that it has no idea when the FCC will act on the Morse code proceeding, in WT Docket 05-235.

The Commission released a Notice of Proposed Rule Making and Order last July. It proposes to eliminate the Element 1, five word per minute Morse code requirement for all license classes. In a February 14th release, the League notes that the Amateur Radio community filed more than 3800 comments on the proceeding, and additional comments continue to show up, even though the formal comment deadline was last fall.

The ARRL says that the next and most-anticipated step is for the Commission is to formally adopt any revisions to its rules and conclude the proceeding with a Report and Order that spells out the changes and specifies their effective date. But an FCC Wireless Telecommunications Bureau staffer told ARRL last week that the agency hopes to release its decision on WT Docket 05-235 sometime this year, but we're not making any predictions at this time. The staffer also indicated there would be no "big announcements" at this years Dayton Hamvention FCC Forum either.



Just a Reminder ... The March RAE Club Meeting is this Thursday!



The Radio Association of Erie March Meeting will be held on **Thursday March 2nd** at 7 pm at the Red Cross Office located at 4961 Pittsburgh Avenue located off of West Grandview Boulevard

Hope to See You There!!

Inside

Calendar of Events	PG. 2
Feb. Mtg Minutes	PG. 3
RAE ListServ	PG. 4
2 Mtr SSTV Net	PG. 4
K3PLV DXpedition	PG. 4
Ripley Hamfest	PG. 5
Weather Prep. Week.	PG. 5
Skywarn Training	PG. 5
Antennas by W2FD	PG. 6
Swap and Shop	PG. 8

Officers and Contacts — 2006

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Upcoming Events

Tuesday March 2nd—

RAE Monthly Meeting - 7 pm

Location: Red Cross 4961 Pittsburgh Ave,
off of West Grandview Blvd.

Thursday March 28th —

Board of Directors Meeting (Tentative) - 7 pm

Location: Red Cross 4961 Pittsburgh Ave, off of West Grandview Blvd.

It's Membership Renewal Time

It's that time of year to renew your membership with the Radio Association of Erie. The new Membership dues for 2006 are lower than in past year.

Full Membership is \$15.00 with Full Voting Privileges

Associate Membership is \$11.50 with all Privileges except Voting

2nd Family Member is 50% off--Immediate Family, No QuaRAE

(Same privileges as Full Family Member)

New Ham membership is First Year No Charge-- All Privileges Except Voting

Life Membership is \$225.00 - Full Privileges

Full Time Student membership is \$8.00 with all Privileges Except Voting

In 2005, the club was able to upgrade the repeater system in addition to funding various activities at the clubhouse. If you can attend the RAE March meeting, please if possible bring in your dues payment for 2006. If your unable to attend, membership dues can be sent to:

Radio Association of Erie

P.O. Box 844

Erie, PA 16512



February 2nd 2006 General Membership Meeting Minutes

Radio Association of Erie
General Membership Meeting Minutes
February 2nd, 2006

The meeting was called to order at 7:05 pm by KE3V.

Board Members present included: KE3V, N3ZNP, N3NKV, WB3DOM, and KB3JSN.

Board Members not present: N3LBI, KD3D, KC2HVX

New Calls: Frank Henry KB3NAT
Guest/New to area: Mike Toney N9XLZ
Silent Keys: None
Hams in Hospital: Bill Yochum KB3IIP
Upgrades: None

Secretary's Report: N3NKV asked for a motion to approve the minutes of the December 2005 meeting as printed in the February QUARAE. The motion to approve the minutes was approved by WB3DOM and seconded by N3ZNP. Motion Carried.

Treasurer's Report: Not Available

Board of Director's Report: N3NKV provided an overview of the board of directors meeting. Topics discussed included triband antenna repair, 2006 goals, 2006 budget, and ways to cut costs. N3NKV mentioned that the list of goals that the board came up with for 2006 was:

Improve East Side Coverage on the repeater; Install back steps on the clubhouse; Reach out to more members; have classes and VE Exams; have a big Field Day; Tail Gate at a Hamfest to bring in members; have a Fox Hunt; Bring Membership Backup to 120+ members

Membership: KE3V reported that we have approximately 90 members.

Repeater: N3SRD mentioned that he is in the process of looking at a new location for the 61

repeater that would improve coverage to downtown and the eastern parts of the Erie. N3SRD mentioned that if the club decides to move the repeater that there may be some costs involved. Also, the 82/61 link audio has been brought up.

Skywarn: N3SRD mentioned that Skywarn training is set for April 12th at Hamot.

RACES: WX3E mentioned that the Emergency Communications Workshop will be held in Edinboro—February 17th-19th. The Severe Weather Preparedness Exercise will be held the week of March 10th.

QUARAE- N3NKV mentioned that he needed more articles for the QUARAE.

Website: N3NKV mentioned that the website has been updated. He made a presentation on the website and some of the new additions. More pictures will be coming soon including digital video.

Old Business: N3SRD asked about the status about the N3RKO memorial. N3NKV mentioned that N3LBI was looking into it.

New Business:

Tri-Bander: WB3DOM mentioned that the A3S be put up on a 30 foot tower instead of a telephone pole.

Sale of 440 SSB Antenna: N3SRD made a motion to sell the 440 SSB beam to N3MLX seconded by WB3DOM. Motion carried.

50/50 winner: Jerry W2FD \$11.00

Motion to Adjourn at 8:25 pm made by NI3Q seconded by WB3DOM

Respectfully Submitted,

John Lis

Radio Association of Erie Secretary

Become a Member of the RAE Listserve Today!

- Anyone can join, you do not need to be a member.
- We discuss Amateur Radio related items, club activities, etc.
- To join, send an e-mail to raerie-subscribe@jilis.com, with the body of your message containing the following: 'subscribe raerie first-name last-name'.
- What **shouldn't** I post? Most of our ListServ subscribers are busy people and are not interested in group debates on issues or causes. Avoid being flamed by being discrete in what information you post. Remember: this is NOT a moderated list.
- Can I be kicked off the list? Let's put it this way: the administrator can add and remove email addresses from the list, if necessary.

2 Meter FM SSTV Net

There is an informal 2 Meter FM SSTV Net on Friday nights at 8:30 PM or before.... on a frequency of 144.500 mhz. Those interfaced and ready to go with SSTV are encouraged to join in the fun. Others may want to just try to copy the pictures that are being send....

All that is needed to copy SSTV is a computer with a SSTV program like MMSSTV which can be found on the internet for FREE at <http://mmhamsoft.ham-radio.ch/mmsstv/index.htm>.

With this program all you need to do to copy SSTV is run audio from your receiver into the line input or mic input of the sound card on your computer. We hope to see more stations try this and other digital modes locally on the VHF bands.

- Terry Hosack WA3LTB



K3PLV DXpedition to Channel Islands

Craig, K3PLV, and Pete, K8PT will be taking what has become their annual DXpedition to the Channel Islands and will be operating from the Island of Jersey (EU-013) on 8-15 March. This year Tom, W8JWN and Jim, N1NK will accompany them, allowing for two stations to operate 24 hours per day with a third station as needed. Operations will cover 6-160 meters (SSB, CW, RTTY & PSK) with an emphasis on the low bands. QSL via home calls. Craig would like to work some of the club members this year. Further information can be found at <http://users.adelphia.net/~crahill/>.

To find where he is operating he suggests going to <http://oh2aq.kolumbus.com/dxs/> or to a telnet site such as [telnet://dx.n3ra.com](http://dx.n3ra.com) and after logging in type `sh/dx mj/`.



Ripley Hamfest

**Bring Your Ham Radio, Computer Gear, and Electronics
leftovers to Ripley and make a few bucks!**

Sunday May 7th, 2006 -- 7:30 am to 11 am

**Ripley Fire Hall , Ripley, NY
3000 feet south of the only traffic light in Ripley
at Rts 20 & 76**

Cash Prizes

Food and Beverages will be available

Admission: \$3.00 --- Tables: \$3.00 each

Talk-In on 146.58 simplex

For more Information Call or E-mail:

N3MLX Joe Lis 814-825-5565 -- n3mlx@adelphia.net

N2LXD Fred Krause 716-736-4688-- emily2@cecomet.net

Online at: <http://ripleyhamfest2006.bravehost.com>

Severe Weather Awareness Week 2006

Each spring before the onset of the thunderstorm and flash flood season...the Pennsylvania Emergency Management Agency , the Erie County Emergency Management Office, and the National Weather Service sponsor a week of Emergency Weather Preparedness. This year, Governor Ed Rendell has declared the week of March 10th as Weather Emergency Preparedness Week for Pennsylvania. Weather Awareness week is a time to plan for thunderstorms, tornadoes, lightning, tornadoes, and flash floods.

During that week, a statewide drill will take place . If your near a radio that day please check in on the 61 or 82 repeaters. Listen to the ARES-Skywarn Net for more details.

Skywarn Training

The Cleveland NWS will be putting on a Skywarn Training session on Wednesday April 12th at 6:30 pm at Hamot Hospital Auditorium. To register for the training session, please check into the Sunday night 9 PM ARES-Skywarn net on 146.61 and 146.820 or contact Steve LaJohn N3SRD via e-mail at slaohn@adelphia.net



Antennas by Gerry Otteni W2FD

Filters

It should be apparent from the discussion of noise and receivers that it is important to decrease the noise output from the receiver with appropriate filters, which do not distort the signal greatly. If the noise is broadband with essentially constant power per unit bandwidth, then decreasing the filter bandwidth by a factor of two will decrease the noise power by that same factor of two (3 dB). Viewing the change in the S-meter reading or listening to the audio noise (when noisy band conditions are present) with wide and narrow filters will show that effect. Notch filters may be used to “cancel” narrow band interference. CW filters as narrow as 500 Hz. or less may be used to decrease both the external and internal noise and greatly increase the audio output S/N ratio without destroying the intelligibility of the signal since the bandwidth of the CW signal is relatively narrow. Filters for other modes of operation need to be designed so that they allow for passage of the signal bandwidth associated with the particular type of modulation without much distortion. One would want to choose SSB filters with a bandwidth of approximately 2.7 kHz. and AM filters with a bandwidth of about 6 kHz. for high quality audio output.

Antenna Performance

Transmit Antenna

The antenna’s role in good communications is to maximize the signal to noise ratio over the communication path. From a standpoint of the transmitting antenna, hams do not have any control over the noise at the receiver-- although some may disagree! The purpose of the transmitting antenna is to maximize the signal strength on the path from the transmitter to the receiver, which implies providing enough antenna gain in the direction desired so that the transmitted signal can be received clearly at the receive site. The antenna should ideally provide a maximum radiation at the proper azimuth direction with low loss as well as provide good elevation angle coverage for the particular transmit-receive path. Although the azimuth direction usually depends on the geographical positions of the stations, (backscatter communications being one of the exceptions) the proper elevation angle for HF ionospheric paths may depend on frequency,

ionospheric heights above the earth, the condition of the ionosphere and the distance from the transmitter to the receiver.

For example: If the path is a short one (10 to 100 miles) and the lower HF bands (40,80 and 160 meters) are used, the near vertical incidence skywave (NVIS) path with elevation angles from 70° to 90° is most likely the one that is active provided that the ionosphere is a good reflector in the frequency band. In this case, it would be important to use an antenna that has good high elevation angle coverage. (See QST, January 2006, pp.28-30, “Elevation Angle Measurements During a Local Contest”)

Communications may also be achieved by “groundwave” propagation for the shorter distances (0 to 20 miles) or line-of-sight propagation when terrain conditions and antenna sites allow for such propagation. Longer paths and higher frequencies would usually require good lower elevation angle coverage near the horizon from the transmit antenna for one-hop modes or proper conditions of the ionosphere for higher angle two-hop or multiple-hop modes.

Receive Antenna

Broadband noise power and the ratio of signal power to noise power (signal to noise ratio) necessarily involve a particular bandwidth as discussed earlier—noise power is directly proportional to the bandwidth. It will be assumed in the following that we are discussing the noise power from a receive antenna that exists within the selected receiver bandwidth which is much narrower than the bandwidth associated with the antenna itself.

The receive antenna receives the desired signal and external noise and it is desirable to maximize the signal to noise ratio from the receive system if possible. In the lower HF bands (160,80,40 meters) the external noise tends to be quite high at times and the noise input to the receiver from the antenna is higher than the internal receiver noise. In the higher bands including VHF, UHF and microwave, the external noise tends to be less than the internal noise from the receiver itself although, external noise may still be important when very low noise receivers are used. If the internal noise of the receiver is dominant, the receive antenna must

Continued on Page 7

Antennas continued by Gerry Otteni W2FD

provide the maximum gain for the signal (which implies low loss) in order to maximize the signal to noise ratio from the receiver system.

An antenna will receive a fraction of noise power proportional to antenna gain and the strength of the noise incident from a particular region in space and this noise power will add over the whole space to give the total power input from the antenna to the receiver. The maximum signal power depends on the strength of the incoming signal and the antenna gain when the antenna is “pointed” in the direction of the signal. Thus, the signal to noise ratio from the antenna system at the receiver input terminals depends on the signal power density, noise distributions and the antenna gain pattern.

Both signal power and noise power levels at the input to the receiver depend on the overall antenna system gain, which in turn is directly proportional to the antenna system efficiency. Power loss, which decreases the antenna system efficiency, is composed of antenna loss, transmission line loss and impedance mismatch loss (which causes a portion of the signal and noise to be reradiated). These losses do not depend on the direction of the incident signal or noise but do decrease the signal and noise powers received by the same percentage.

The ratio of signal to noise power (SNR) at the input to the receiver is therefore, independent of the efficiency or losses of the antenna system and only dependent on the directivity or “sharpness” of the main beam of the antenna pattern with angle. (The directivity and gain of a lossless antenna are identical).

Thus, an antenna system which is lossy will produce the same signal to noise ratio (but less noise and signal power) at the input to the receiver as a lossless antenna with the same antenna pattern and external noise conditions. We must be careful that the antenna system losses are not so great that they lower the external noise to a level near the internal receiver noise or the advantages of the highly directive antenna pattern will disappear. A specification of the desired antenna pattern for optimum signal to noise ratio is not possible except to say that we would like to have an antenna with a “sharp” main beam pointed in the direction of the signal (which enhances the signal level) and low sidelobes and backlobes (which de-

grade the noise level). It would also be fortuitous if the external noise distribution in the region of space containing the main beam were relatively low.



As an example we will consider a special situation where the noise power density incident from space is uniform and the same in all directions and there is also a signal present. A lossless isotropic reference antenna (0 dBi gain) without mismatch or transmission line losses receives the signal power (S) and noise power (N) and the same powers appear at the receiver input terminals.

If we replace the reference antenna with a high gain, lossless, matched antenna, the noise (N) received will be the same. For this special case with uniformly incident noise, the total noise power received in the main beam of the high gain antenna is increased while the noise power received in the sidelobe and backlobe region of that antenna is decreased with no net noise power change! Let us assume that the gain of the replacement antenna is $G=10$ dBi in the direction of the signal. Thus, the signal power will be increased by the change in the antenna gain or 10 dB. Since the noise power is the same for both antennas, the signal to noise ratio at the receiver input terminals will also be increased by the same 10 dB.

If we now insert a lossy section of transmission line or attenuator and a mismatch at the antenna terminals with total system loss L (let us choose 5 dB), we have a lossy antenna system with both the signal and noise powers at the receiver input terminal decreased by 5 dB from the lossless configuration. The signal to noise ratio at the receiver input is still 10 dB above that for the lossless, isotropic reference system. Such a lossy antenna system is equivalent to using a lossy antenna with a pattern “directivity” of 10 dBi but a gain of only 5 dBi. Thus, it is the “directivity” value that is important in determining signal to noise ratio from an antenna system.

Continued Next Month

Radio Association of Erie

P.O. Box 844
Erie, Pa 16512

Swap and Shop

FREE FOR PICK UP, (FIRST COME - FIRST SERVED) A box full of Ham stuff. 3 mobile slide mounts - 2 good heat sinks, wired, a 2N3066 NPN transistor mounted on it. - A crystal mic, Monarch MC-24 - A Echo Power Boost, raises 120 VAC to 128 VAC -Home Brew 12VDC Power Supply - A 18 VDC to 9,7VDC Voltage converter - A Radio Shack External Speaker and several other items. For more information contact, Bill Austin WB3IFE at 864-8915

For Sale: Linksys Firewall/Router BEFSX41, EtherFast 10/100 Cable/DSL, like new, original carton, with 4-port switch, software, power supply, RJ45 cable. Original price \$60, asking \$25 OBO. Not wireless. Contact Bob Schwimmer N3FAW via e-mail at bohn3faw@verizon.net or at 866-3027



Make sure to Check into the
Erie County ARES/RACES/Skywarn Net
each Sunday at 9pm
on the 146.610/146.82 and 146.70 repeaters.

