

Club Repeaters:
 Erie:
 146.610-
 PL 127.3 hz

 Waterford:
 146.82-
 PL 186.2 hz

QUARAE



Volume 5, Issue 2

February 2006

Emergency Communications Workshop to be held in Edinboro—February 17th-19th

Ever wanted to learn more about Emergency Communications?

But did not have the time? We have the answer!!

Erie County Emergency Management Agency, with the assistance of the Northwest Pennsylvania Counter-Terrorism Task Force, will offer the ARRL Level I Amateur Radio Emergency Communications Course during the weekend of February 17-19th in Edinboro.



The class will begin **Friday, Feb. 17th at 1800 and recess at 2200. We'll begin again at 0800 and break for the evening at 1600 Saturday, with a similar schedule on Sunday.**

Yep, it's a big time commitment for everyone, so make it special and come learn about Emcomm I. Class size is limited to 25, so sign up by contacting Dale Robinson, Deputy Director of Emergency Management by e-mailing him at drobinson@ecema.org.

If you are looking for more information, please visit [http:// www.ecema.org/cttf_training.htm](http://www.ecema.org/cttf_training.htm) and click on the Calendar link



**Just a Reminder ...
 The first club meeting of 2006
 is this Thursday!**

The Radio Association of Erie February Meeting will be held on February 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!!

PA QSO PARTY PRELIMINARY POINTS FOR THE RAE

K3GY	136,416
W3GV	61,006
KE3V	38,560
W3NGO	29,077
W3PIX	25,988
N3BXL	632
KD3D	166,100
N3NTJ	66,186

Overall Total= 523.965

Officers and Contacts — 2006

President

Kevin McKenna, KE3V
ke3v@adelphia.net

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Neil Shea, N3ZNP
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Treasurer

Frank Graziano, KD3D
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Secretary/Newsletter

John Lis, N3NKV
john@jjlis.com

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Robert Fuller, N3LBI
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Board Members

Bob LaPlaca, KC2HVX
Bill Marshall, KB3JSN
Dianne Miller, K3LD
Ron Seyboldt, WB3DOM

Membership Chairmen

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Clubhouse & Repeater Committee Chairman

Steve LaJohn, N3SRD
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Steve Lajohn, N3SRD
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UPCOMING EVENTS

Tues. - February 2nd - RAE Monthly Meeting - 7 pm

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

Thurs. - - February 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 February 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



December 2005 General Membership Meeting Minutes

General Membership Meeting Minutes
December 1, 2005

The following board members were present:
N3ZNP, N3LBI, KC2HVX, KB3JSN, and
N3NKV.

Not Present: KB3ALU, N3BXL, and KD3D

The meeting was called to order at 7 pm by President N3ZNP.

Secretary's Report: N3NKV asked for a motion to approve the minutes of the November 2005 meeting as printed in the December QUARAE. The motion to approve the minutes was approved by KE3V and seconded by WB3DOM.

Treasurer's Report: Not Available

Board of Directors Report: N3LBI gave an overview of the minutes of the board of directors meeting. Topics discussed included: holiday party, membership mailing, classes, and website updates.

Upgrades: None

Silent Keys: None:

Committees:

Clubhouse: N3ZNP reported that the clubhouse was all winterized.

Website: KC2HVX mentioned that the website is now up and operational. N3LBI made a motion that the club look into the cost of purchasing the www.raerie.org domain name so that we do not lose it. Seconded by KB3JSN. Motion Carried.

KB3JSN brought up that he would like to see more information about ARES/RACES on the RAE web site. There was also questions as to why N3NTJ is still hosting the snow spotter information. It was decided that a 1 yr transition plan be created to keep everything in sync. The overall goal is to switch the hosting of the snow spotter information from N3NTJ's website over to the

RAE website over a period of time.

QUARAE: N3NKV mentioned that he needed materials for the QUARAE.

Repeater: N3SRD reported that the voter at St. Vincent's is back up and running due to some bad components that got over heated. Thanks to N3APP doing the repairs. N3SRD mentioned that W3WVG owns a 200 ft tower on Heibel Rd. in Greene Twp. and was looking for hams to cut the grass and change the light bulb at the tower site in lieu for tower space. N3SRD mentioned we may want to look at moving 61 to this tower. KB3JSN made a motion that a committee be appointed to look into the status of this tower. The Committee would consist of KC2HVX, N3SRD, N3LBI, KB3JSN, N3NKV. Motion Carried.

A short break from the business meeting was taken – Laura DiPasqua from the American Red Cross spoke about American Red Cross Emergency Services.

Membership: KE3V mentioned that the mailing membership mail went out for 2006. As of 12/1/05 there were 44 paid members for 2006.

ARES/RACES: WX3E gave a critique of the Simulated Emergency Test.

Holiday Party: N3ZNP mentioned that the Holiday Party would be held on Saturday January 14th at Nunzi's Place located at East 38th and McClelland Avenue. Social Hour will start at 6 pm with Dinner at 6:30 pm. The cost of the dinner is \$13.00. For reservations, contact Neil

50/50 Winner was W3IAX amount was \$10.00.

A motion to adjourn was made by N3LBI and Seconded by NI3Q.

Meeting adjourned at 8:50 pm.

Respectfully Submitted,

John Lis
Radio Association of Erie Secretary

RAE Holiday Party 2005



The Food was excellent!



Erie Hams having a having an Eyeball QSO!



N3LBI: Neil you have no reason not to get on the 2 meter am net.



L to R: KD3D and XYL and WB3IGK



L to R: Dan K3UFG, Ron WB3DOM, Sue N3LPO, and Judy K1UFG



L to R: KE3V's XYL, KE3V, and KD3D

Antenna by Gerry Otteni W2FD

Introduction

Most amateurs know what an antenna is and what it is supposed to do but there are areas where the lack of understanding of antennas appears to make antenna performance “magical” rather than scientific. Just listen to a conversation on the ham bands and you may hear a ham telling others that one brand of mobile antenna works much better than the competing brands of similar design or that one commercial 3-element “beam” gets better signal reports than all the others available. A ham may say that he won’t use an antenna tuner because antenna tuners produce too much loss. An advertiser may indicate that their Yagi antenna is much better because it is designed to maintain a high front to back ratio, and therefore, increases the signal to noise ratio for reception.

It is my intention to introduce some thoughts about amateur communications and antennas, which are not always obvious but are important for operation in the amateur bands. The first part of this article will be concerned with general uses of antennas as part of the communications system.

Signal Comparisons

An antenna test range is generally not available to the average amateur so we usually rely on calculated predictions from a well designed computer program, signal reports from other hams or signal strength measurements made on our own receivers to “test” or compare the performance of our antennas. Unfortunately, most receivers do not have accurately calibrated S-meters from which to make good comparisons.

Receivers

S-Meters

It is generally agreed that an S-9 reading on an S-meter should represent a signal of 50 (microvolt) input to the receiver antenna terminal. Some receivers have signal strength scales, which are graduated in 4 dB per S-unit divisions and others may be 5 or 6 dB per S-unit. Manufacturers of receivers do not appear to have a standard definition for the S-unit. It is not uncommon for a receiver calibration procedure (if any) to consist of setting the 0 scale with no signal input on the S-meter and set-

ting the S-9 position for a signal input of 50 at a particular frequency. This implies that we generally do not have an accurate measuring system available for signal strengths on all the bands unless we design a calibration source for our receiver, which is able to provide accurate signal levels for S-meter comparison.

Signal reports from a receiver S-meter are supposed to change by about one S-unit for a change in signal strength of approximately 5 (4 to 6) dB, corresponding to a receive power change of 3.16 times! For example, it would require that a transmitting station increase its radiated power from 100 watts to over 300 watts to see a single S-unit (5 dB) increase in signal strength or increase its radiated power from 100 watts to 1 KW to see an approximate two S-unit (10 dB) increase on a well calibrated S-meter at the receive site. Similarly, a change in radiated power from 100 watts to 30 watts or 10 watts would cause a decrease in S-meter reading of approximately one or two S-units (5 or 10 dB) respectively.

A corresponding change in antenna gain (either transmit or receive) with the transmit power unchanged would produce the same effect—approximately one S-unit change per 5 dB gain change. Thus, it may be realized that it should take a large change in power or antenna gain to make an appreciable difference in the S-meter reading.

Such power level or antenna gain changes may be important if the signal is close to the noise level for the particular receive conditions, otherwise; they do not greatly affect the intelligibility of the signal. Many receivers for the ham bands are not very linear for power increases particularly for the lower signal strengths in the S-1 to S-5 ranges and thus, it may appear from the S-meter reading that a signal has increased or decreased greatly, when in fact, the S-meter change is not linear in power or dB.

A check of your receiver will indicate whether your S-meter scale is linear or not. If you have an RF attenuator built into the receiver or an external attenuator is available, you can test the linearity of the S-meter scale to see if adding attenuation produces a reasonable change in the S-meter reading.

Continued on Next Page

Antenna continued by Gerry Otteni W2FD

It should be obvious that S-meter reports by themselves are not very reliable for giving communication or antenna performance information.

Notes:

We all know that the signal provided by an antenna in transmit or receive will be increased by the gain of that antenna (relative to an isotropic – 0 dBi – radiator). As a consequence of this fact, if you want good signal reports, only work hams with high gain antennas since their S-meters will generally indicate a higher reading! As an added caution, do not use signal reports from a contest to judge your antenna since you will get the same report (S-9) independent of the direction the antenna is pointed! J

External Noise

Another important factor in reception of desired signals is noise power, which may be received from external sources. Among those sources are solar, atmospheric (thunderstorms), galactic or power line sources, noise generated by losses in the antenna or transmission lines and noise generated by industrial sites, all of which tend to produce broadband noise. If you have a directional antenna and are able to rotate it, you will probably be able to locate nearby cities or industrial locations by finding the direction of the maximum noise level on that frequency or perhaps minimize interference by placing a “null” of the antenna in the direction of the interference. Interfering signals from hams or others operating close to “your” operating frequency are not considered to be noise but the result of these signals are the same—they make it more difficult to hear the desired signal clearly.

If the received signal is sufficiently strong and there is a high signal to noise ratio, it is possible to “quiet” the external noise by setting an attenuator to a value that reduces the external noise level or reducing the RF gain control setting on the receiver so that the noise is not objectionable. Of course, that attenuation or decrease of RF gain also reduces the level of the receive signal but can produce a pleasant “armchair copy”. Noise blankers are available on most ham receivers and do a good job of canceling ignition noise. Some receivers have blankers which work well against pulse

type radar noise as well. Another option for reducing external noise (particularly for locally generated noise which tends to be like an interfering signal) is the use of noise canceller circuits, which input the external noise from a separate antenna with the proper amplitude and phase to cancel the noise input from the receive antenna. Digital signal processors on the market are also used to reduce noise and interference and are available particularly for audio frequency output or speaker systems.

Internal Noise

Broadband noise is also generated in the receiver, which adds to the signal and external noise powers received but is usually important only when the external signal or noise levels from the antenna system are of the same order or less than the internal noise level. The noise generated in a receiver or “noise floor” is specified by the minimum discernable signal input (MDS) that will produce the same audio output power from the receiver as the internal noise without the input signal. The MDS is usually expressed in terms of the voltage input to the receiver antenna terminal in microvolts (μV) or the power of the signal input in decibels relative to a milliwatt (dBm) that will produce the same audio power output as the internal noise. Receiver bandwidth for the particular mode of operation (SSB or CW) will affect the MDS since the internal noise is broadband and filters of narrower bandwidths will produce lower noise power audio outputs.

Receiver sensitivity is another measurement of internal receiver noise power expressed in terms of the input signal level which produces a given audio output power ratio (typically 10 or 12 dB) of signal to noise (S/N), signal plus noise to noise (S+N/N) or signal plus noise and distortion to noise plus distortion (SINAD for FM receivers). These sensitivity measurements generally depend on receiver bandwidth (selectivity) for the mode of operation (AM, FM, CW, SSB) and the type of signal modulation used particularly for FM and AM.

More to Come Next Month!

FCC Requires Payment of Vanity Call Sign Fee at Renewal Too

As the window approaches to renew the very first Amateur Radio licenses issued a decade ago through the [vanity call sign](#) program, the question on many lips is, "Do I have to pay a vanity call sign fee again when I renew my license?" The answer is, "Definitely yes, if you want to keep your vanity call sign for another 10 years." The FCC has steadfastly maintained from the very start of the vanity call sign program that payment of the vanity call sign regulatory fee would be required for renewal applications as well as for new applications. "Some commenters believe that the fee for a vanity call sign should be charged on a one-time basis only, and that no fee should be required when the license is renewed," the FCC remarked in its December 23, 1994, *Report and Order* in PR Docket 93-905, "Amendment of the Amateur Service Rules to Implement a Vanity Call Sign System." The Commission continued, "The ARRL believes that a one-time fee is more appropriate because the Commission's additional workload occurs at the time of the initial processing of the vanity call sign."

Under the provisions of the Communications Act of 1934, as amended, however, "we cannot provide a one-time fee for processing vanity call sign applications," the Commission concluded in 1994. The FCC reaffirmed that stance in 2002 when it responded to two radio amateurs who had commented on its annual fee schedule proceeding, MD Docket 02-64. Both hams supported the payment of a regulatory fee to cover the initial administrative cost but questioned having to pay the fee upon renewal. The FCC responded that because it continues to incur costs related to vanity call signs even after their issuance or renewal, it believes the regulatory fee at renewal is appropriate. "Section 9 of the Communications Act, as amended, provides for the recovery of the Commission's costs associated with its enforcement, policy and rulemaking, user information, and international activities," the FCC said in its *Report and Order*. "Every day, Commission staff are engaged in activities involving amateur vanity call signs, such as protecting the assignment of vanity call signs, investigating complaints on the improper or illegal usage of call signs, requests for call signs that are already assigned to someone else, and all related research that is nec-

essary to insure the proper assignment of call signs."

The first batch of vanity call sign renewals is expected to start showing up as early as this March. Part 97 provides that Amateur Radio licensees may apply for renewal only within 90 days of the expiration date of their licenses. Those who wish to retain their current vanity call signs will have to pay the vanity call sign fee, now \$21.90 for the 10-year license term. The fee could change, however, by the time the licenses of the greatest number of Amateur Radio vanity call sign holders come up for renewal this fall. The ARRL VEC, which handles routine Amateur Radio license renewal applications as a service for League members, notes that it does *not* plan to process Amateur radio vanity call sign renewal applications. ARRL VEC Manager Maria Somma, AB1FM, says that's because the VEC is currently not equipped to handle the regulatory fees that vanity renewals will require.

The vanity call sign fee has fluctuated over the years, but it's far lower than the \$70 the FCC first announced in its 1994 *Report and Order*. The fee subsequently was reduced to \$30 for the initial rounds of vanity call sign filers in 1996. Over the 10 years of the program, the fee has varied from a low of \$12 to a high of \$50. The FCC's Part 97 rules are a bit more vague on the topic. §97.19(b) says, "Each application for a modification of an operator/primary or club station license grant, or the renewal thereof, to show a call sign selected by the vanity call sign system must be filed in accordance with §1.913 of this chapter." Part 1 references filing forms and fee schedules. All Amateur Radio licensees filing renewal applications, whether or not they hold a vanity call sign, must have an FCC Registration Number and use it on the application. Vanity call sign renewal applications may be filed via the FCC's Universal Licensing System ([ULS](#)), and payment may be made online using a credit card. Filing is also possible on hard copy forms. License application and renewal information and links to the required forms are available on the ARRL [Amateur Application Filing FAQ](#) Web page. The [FCC's forms page](#) also offers the required forms.

-ARRL

Radio Association of Erie

P.O. Box 844

Erie, Pa 16512

Local HF/VHF/VHF Nets

DAY	TIME	BAND	FREQ	MODE	COMMENT
SUN	7:00 PM	6 METER	50.190	USB	SIMPLEX
SUN	9:00 PM	2 METER	146.610	FM	- OFFSET 127.3 PL ARES/RACES NET
SUN	9:00 PM	2 METER	146.820	FM	- OFFSET 186.2 PL ARES/RACES NET
SUN	9:00 PM	2 METER	146.700	FM	- OFFSET 186.2 PL ARES/RACES NET
MON	8:00 PM	2 METER	144.450	AM	SIMPLEX
TUES	8:30 PM	70 CM	446.100	FM	SIMPLEX
WEDS	7:00 PM	6 METER	50.520	AM	SIMPLEX
FRID	8:00 PM	2 METER	144.210	USB	SIMPLEX
SAT	8:00 PM	2 METER	146.550	FM	SIMPLEX
MON-FRI	8:00 PM	2 METER	146.700	FM	- OFFSET 186.2 PL "Erie Mailbag Net"
			LOCAL HF NETS		
DAILY	8:00 AM		14.340	USB	FORT PIERCE CONNECTION CT. CONNECTION NET FOLLOWS SNOWBIRD NET
DAILY	7:20 PM		7.230	LSB	
WEDS	20:30		28.400	USB	NOVICE TECH NET
SUNDAY	8:00 PM		29.000	USB	LAKE ERIE EMERGENCY NET