The QUARAE

Volume 14, Issue 9 September 2013

Editor: John Lindvay WB3IFD

President Remarks

Well, Summer is over as far as Waldameer and the peninsula are concerned. Hopefully we will start getting some cooler weather. That will make it nicer to finish this year's public service events.

We have three events remaining on the schedule for this year. The "BEAST ON THE BAY" obstacle course on the peninsula will by run on September 7; the Erie Runner's Club Marathon on the peninsula will be run on September 15 and finally the Run Around Erie Race will be run on the peninsula. I don't have the date for that race yet. I will let you know as soon as I find out. If you can help at these events, please let me know.

I have had a good reponse to the public service events so far so I would like to say thanks to all that have helped.

We still have a few projects that need to be completed at the clubhouse. The concrete base for the new tower has been poured so we are waiting for the concrete to cure and get delivery of the tower so that project can be finished.

The new amp requires that a 220 volt line be installed so we can use the full 1500 watts of power.

A new feed thru plate will be installed where the antenna coax enters the building. The coax lens will be grounded at the plate to help protect against lightning strikes.

I would like to thank Rick WA3MKT for taking the lead on these projects. Also a big thanks goes to the folks that have be helping Rick.

The club now has a treasurer. Mike Anderson KB3ZSF has taken over the checkbook for the RAE. I would like to thank Adam KB 3THU for doing double duty as the secretary and treasurer until Mike took over.

73, DOUG AD4UL

June Board Meeting

A board meeting of the Radio Association of Erie was held on June 27th at the RAE Clubhouse on Wagner Rd. In attendance were

Radio Association of Erie Club Meeting – September 1 at the Wagner Road Club House at 7 PM. Hot Dogs at 6 PM

AD4UL, WA3MKT, K3PLV, WB3IFD & KB3THU. Absent KB3NAT, N3LBI & WB3DOM. A quorum present, the meeting was called to order at 1900 by AD4UL.

Tower status- base and bolts were delivered. One more tree needed removed. WA3MKT was going to do a soil test. Final location was going to be determined. The rebar cage needed built as of yet. Priority was to get the base into the ground. Request was made of more funds from Vanguard.

AMP- Email on the 22nd that they received our check. They were waiting on that to clear and an amp to be shipped out to them. There is also a need for 220V at the desk in the clubhouse.

Club Picnic- July 20th. Place an email on the reader list. Calls were going to be made out for reminders as well.

Repeaters- 82 machine needs diagnosed, but it seems to be limping right along.

Clubhouse- a request was made for a white board.

Website- Thank you goes out to W3YX for salvaging some of our club history before it was harshly deleted. He has provided us with a few pictures from the 80's that will soon be up on the new website.

Good to the order-

Club library, thank you WB3IFD for providing some materials that we may check out and bring back to the clubhouse. Thursday night during the summer has been "radio night". If anyone would like to stop out and operate, they are welcome to. The shelter box needs moved yet (its been pretty wet).

We are still looking for someone to take the Treasurer's position. If anyone is willing to help please contact AD4UL.

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August General Meeting Minutes

A regular club meeting of the RAE was held on August 1, 2013 at the clubhouse on Wagner Rd. President AD4UL and Secretary KB3THU present, a quorum being present, the meeting was called to order at 1900 by chair AD4UL.

AMP- its here. K3PLV has not tested it yet, but will and make any changes to it if needed.

TOWER- have the steel cage, US Tower sent the spec sheets. A motion was made by KB3ZBH to pay the digging fee of $250.00. It was seconded, and approved. Motion passed.

NEW- KB3 Mike has accepted Treasurer's position.

VISITORS- none

GUESTS- KB3ZRC

SK- N3ZHG

SECRETARY- Board meeting minutes read. KB3THU made a motion to accept the minutes

as read. It was seconded, and approved. Motion passed.

MEMBERSHIP- 65 Motion made by KB3THU to accept KB3ZRC as a new member. It was seconded, and approved. Motion passed.

REPEATERS- 82 power amp is almost set up. Some programming needs done, and the sensitivity is going to hopefully make a big difference.

PUBLIC SERVICE- Barber Biggest Looser Aug 17, Presque Isle Triathlon Aug 24, Beast on the Bay Sept 7, Erie Runners Club Marathon Sept 15.

WEBSITE- most of the pictures with the captions are on the website. It was requested that the Wagner Rd address including zip code be placed on the website as Wagner Rd is in two different zips.

QUARAE- John Lindvay would like input on where you get your electronic parts/components for an article. Please contact him at jlindvay@msn.com. As always, he would like to publish your favorite article to share with the club. It does not always have to be ham radio related, but in good taste.

CLUB DIRECTORY- K3PLV will publish a new directory, and is looking for input and sources.

CLUBHOUSE- The trees are getting done, place is looking good.

CONTESTING- Aug 3-4 Lighthouse weekend. Motion made by N3LBI to pay our Amateur Radio Lighthouse Society membership. It was seconded, and approved. Motion passed. A Motion was made by WB3DOM to pay for our annual sponsorship of the PA QSO PARTY Plaque for $40.00. It was seconded, and approved. Motion passed.

A motion was made by K3PLV to have a plumber come in and inspect the recent back-up of the drain in the clubhouse during the meeting. It was seconded, and approved. Motion passed.

Motion made by KB3ZBH to adjourn at 1936.

140 YEARS OF BATTERY DEVELOPMENT.

From Technical Topics

The continued development of portable consumer devices such as laptop computers, iPods, mobile phones with imaging facilities, digital cameras with flash and many other ‘cordless’ products has brought about a major increase in battery research. Traditionally this has been a rather slow moving and unexciting field of activity in an apparently mature branch of electrochemistry in which new developments add to rather than driving out those that came before. This may soon change. A European directive this year puts stringent limits on the amount of highly toxic mercury and cadmium permissible in batteries, and the disposing of them.

The year marks the 140th anniversary of the development by Georges Leclanché of the type of cell that bears his name. It was soon appreciated that a major advantage over other, even earlier, cells was that little action occurred until the external circuit was applied, thus extending its shelf life when not in use. Essentially it comprised a zinc plate (cathode), a solution of ammonium chloride as electrolyte and a positive pole (anode) made by packing powdered manganese dioxide into a porous pot round a centrally place carbon rod. Such cells being “wet” cells were not readily portable.

It was twenty years after this invention - 1888 - that the first “dry” Leclanché cell appeared, generally attributed to the German scientist, Dr Gassner. He formed the zinc element into a cup that contained all the other elements and added zinc chloride to the electrolyte to improve shelf life. The round-cell became a commercial product. With various improvements it still - 120 years later - forms the basis of the standard carbon-zinc torch battery. Production was greatly increased during WW1 and in WW2 the “layer-type”

construction reduced very significantly the space required. Layer-type HT batteries were widely used for the lowest power clandestine transmitters and for such compact receivers as the MCR1 (miniature communications [superhet] receiver) and the "Sweetheart" straight receiver.

Both round and layer-type carbon-zinc batteries have continued to find wide application in the miniature tube and the later transistor era, but there in increasing use of cordless portable devices has encouraged the development or re-evaluation of many other disposable cells. Leakproof High Energy combine HT- LT layer type batteries all based on the carbon-zinc Lelanche' cell widely use today. Cordless portable devices has encouraged the development or re-evaluation of many other disposable) cells. "Leakproof"; "High Energy"; "combined HT+LT layer type batteries", all based on the carbon-zinc Lelanché cell, were widely used after the war.

In the 1950s, the mercury button cell appeared on the market with a zinc anode, a caustic alkali (potash) electrolyte and a cathode of compressed mercuric oxide-graphite in contact with a steel container forming the negative electrode. It had an on-load voltage of about 1.2V which remains steady throughout most of its useful life. However, it does not recover during rest periods and shows little difference in the total energy supplied during continuous or intermittent use.

The 1960s and 70s saw increasing use of the still popular alkaline manganese cell which performs well under relatively heavy loads that would quickly exhaust a carbon-zinc cell. It requires the use of good quality materials and more sophisticated construction. The anode is formed of zinc particles, combined with a little mercury or other heavy metals to suppress gassing. The alkaline electrolyte is a solution of potassium hydroxide (KOH). The entire cell is enclosed in a steel case, providing a considerably stronger and more secure casing than the zinc used for carbon zinc cells, and does not form part of the working system but is in close contact with the cathode material known as electrolytic manganese dioxide.

The major recent development has been the lithium-ion and lithium-polymer cells, providing a working voltage of some 3V, double that of the carbon zinc or alkaline cell and with a much higher energy/weight content.

The performance of a primary cell for a specific application depends of a number of factors including: (aP the physical size of the cell (b) method of contruction and skill of the manufacturer (c) the rate at which the cell is discharged (d) period of time per day which it is used (e) the voltage output which is required (f) the temperature and (g) the age of the cell. All primary cells are to some extent reversible; they can be recharged with carefully controlled current. However the number of charge-discharge cycles is limited and there can be safety hazards unless care is taken. Chargers suitable for a mixture of popular sizes of primary cells are available on the market

The disposal or recycling of batteries has become a major concern. In the UK alone it is estimated that some 30,000 tons of used batteries are thrown away annually. There is at present no such thing as an environmentally friendly cell: each contains some toxic materials such as traces of heavy metals including mercury, cadmium etc. Hence the new European Law.

Battery R&D is increasingly aimed at rechargeable (secondary) cells and making them more energy efficient, more suitable for recycling and more safe. It is not so long since Sony had to recall some ten million of its lithium high energy cells when it was found that small metallic particles could cause internal short-circuits, leading to over-heating and even fires or explosions.

The key to advance is seen in finding new combinations of materials for the anode/cathode/electrolyte and the engineering of the cells to meet specific requirements. Some applications involving only occasional use of the battery need to put emphasis on long shelf-life; others need to produce low-currents over prolonged periods; others heavy bursts of energy over short periods. It has for long been recognized by amateurs that 12-volt vehicle lead-acid batteries come in two types with the so-called "deep discharge" variety more suitable for powering transceivers than the conventional vehicle battery which is required to supply very high currents over short periods for the starter motor.

For low-current applications, new forms of low-cost, easily disposable cells are currently being researched in Finland and the UK. In these, an anode paste is printed on one side of a sheet of paper which acts as separator and electrolyte, a cathode paste printed on the other side, and then enclosed in a laminated plastic cover.

EmComm East Conference to Feature ARRL COO WJ1B

ARRL COO Harold Kramer, WJ1B

ARRL Chief Operating Officer Harold Kramer, WJ1B, a Boston Marathon finish-line volunteer at the time the bombs exploded, will discuss his experience at EmComm East, an ARRL-sanctioned Amateur Radio emergency communication conference, September 29 in Rochester, New York.

The conference is aimed at radio amateurs involved in emergency, disaster response and recovery communications. Participants can attend training sessions on technical topics, learn from served agencies, and interact with other operators from around the region.

Most presentation slots have been filled, but a few openings remain. If interested, contact EmComm East or visit the conference website.

Ham Radio Calendar

Sept 3 – Corry Club Meeting

Sept 5 – Radio Association of Erie Club Meeting. Wagner Road. Hot dogs at 6 PM

Sept 8 - **Butler SwapFest**. Butler, PA Butler County Amateur Radio Association. See http://www.w3udx.org

Sept 10 – Wattsburg Wireless Association Meeting. Tate Road 6 PM Bring dish to share.

Sept 12 – Union City Wireless Club Meeting

Sept 14 - Arkansas QSO Party. See www.arkanhams.org

Sept 14 - Ohio State Parks On the Air. See parks.portcars.org

Sept 16 - The Conneaut Amateur Radio Club Meeting located at Conneaut Fire Department #3, 392 Middle Road, Conneaut, Ohio 44030

Sept 21 – VE Exams 9 AM at Greene Township Bldg. on Tate Road

Sept 21 - Washington State Salmon Run. See www.wwdxc.org

Sep 21, 1600Z - Sep 22, 2400Z See websiteSept 22 - **Cleveland Hamfest and Computer Show** located in Berea, OH. amfest Association of Cleveland, Inc. See http://www.hac.org

Sept 28 - Texas QSO Party. See www.txqp.net

Sept 29 - Maine QSO Party. See www.maineqsoparty.com

Sept 29 – EmComm East Conference in Rochester, NY.

Oct 5 - **2014 Conneaut ARC Hamfest** located at Conneaut, OH. Conneaut Amateur Radio Club. See http://qsl.net/w8bhz/