

SPARK

the monthly newsletter of the

North Ottawa Amateur Radio Club

September 2012



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Activities Director

** VACANT **

NOARC 2 meter repeater

W8CSO/R – 145.490 output, 144.890 input

Main RX: PL 94.8 – Grand Rapids RX: PL 91.5 – EchoLink: N8FQ-R #469574

Report from the August 2012 meeting

The August Meeting of NOARC was held at Wm Ferry Park in Ferrysburg, at 6:30 in the evening. The intent was for members to bring in their QRP radios and try to contact anyone possible. For the uninitiated, QRP means low power transmission, usually five watts or less. Ten amateur radio operators found their way to the park.

Shortly before 6:30, hard core hams began erecting antennas. People in the park were intrigued at the sight of Lou Meisch heaving chain links, at unbelievable heights above the park trees. The sight of others pulling on ropes and wires up to the tops of oaks and pines, made for interesting conversations. On an interesting side note, Ben Docter had a small lead weighted bag, four or five inches long, with a ring in the top. It was used by the phone company to mount wires.

Phyllis Simmons brought her famous brownies. She set up shop in the pavilion. There was coffee and tea for all. Some surprised casual walkers in the park, declined an invitation to partake of the goodies.

Mark Stern brought the NOARC mascot. A beautiful German Shepherd named "Lieb".

The group set up four stations. Mark worked 20 meters, using a vertical antenna and contacted Spring Hill, Florida. John Sundstrom threw a plastic bottle into a nearby tree and attached the other end of his wire, to his radio. He contacted KC9PTD in Somonauk, Illinois and NW8E in Redford, Michigan. Ben Docter worked WP4L in Adjuntas, Puerto Rico. Roger Cox used a dipole antenna to make two Florida contacts and one in Chile.

Last of all, Roger Simmons brought a military surplus twenty foot vertical tower. It was constructed of four foot sections with a base, a "top hat" and guy ropes, complete with stakes. It turned out to be completely useless during the present meeting, but it was a lot of fun erecting. Roger also brought a "slinky antenna" (You know made from the same wire as the toy that walks down stairs by themselves). John Fischer, Don Meyer, Lou Meisch and anyone else who was not otherwise occupied at the time, attempted to mount the strange thing. The best we could do was to make it resonate at the aircraft frequencies.

When the sun went down, participants began taking the antennas down. A bicyclist cruising the path hooked herself up with a rope lead. She was not injured and smiling apologized. She said she hoped that she had not pulled out any "radio wires". No damage done, she pedaled away with her companion.

When all was cleaned up and packed back in the cars, we departed without formal closing ceremonies. Like Lou Meisch says: " A good time was had by all".

Respectfully submitted: Phyllis and Roger Simmons

A little electronics history

Soldering, a means of using a melted metal to join with another metal when it cools. While popular for joining two or more conductors for an electrical connection, it has been used for centuries to join metals for jewelry, plumbing, and many other purposes. It is different from welding in that it does not melt the parent metal, since the solder has a lower melting point.

Pure lead can work, but it has been found that adding tin changes the temperatures for the melting and solidifying points, bringing them closer together. This reduces the time between the two phases and the likelihood of cracking, or crystallizing. For plumbing, a 50/50 ratio of lead and tin is common, but for electrical use 60/40 is the most common, with 63/37 the very best.

Clean surfaces are a must for a good joint, and a way of improving the cleanliness is to use a chemical that reacts with the heat to remove corrosion. For plumbing, an acid is used, but this is better for pipe than wire. For electrical use, rosin made from pine pitch is standard. These fluxes, as they are called, may be applied from a jar or solder may be purchased with it in a core.

In the old days, much soldering was done with a soldering copper instead of an open flame. This used a heavy copper point with a wire and wood handle, the copper being heated by a flame. The copper would hold its heat long enough to do quite a bit of soldering. In the 1950's this method was still in use by telephone cable splicers. It had the added advantage of being able to keep the open flame outside a manhole where there could be combustible gases. Some brilliant person discovered that an electrical heating element could be installed around an iron holder for the copper point, making a soldering iron.

Besides having clean surfaces, a good practice in making solder joints is to rock or move the tip while making the joint before backing off to allow it to harden.

For centuries messages were delivered by relay, having a line of men to each carry it a short distance. The pony express is a well-known example. In the early 1800s it took months for a letter to travel large distances. Samuel Morse realized that a message could be sent electrically by using a system of short or long pulses of current through a momentary switch (In those days, switches were called keys) to operate a device called the Morse Inker. This used a reel of paper tape with a wind-up motor that moved the tape under a pen. An electro-magnet brought the pen down when current was applied, making a short or long mark on the paper tape. A clerk would then write the letter that matched the combinations of dots and dashes. The tape would be pasted to a sheet of paper and delivered to the addressee.

The inker had a problem of the pen getting clogged up, and cleaning it was a daily chore. After some time on the job, the clerks found they could interpret the sounds the inker made and just wrote the messages out. Management, of course, threatened to fire the operators who did not receive messages in the prescribed manner. Finally they were convinced that the method was cheaper than maintaining the inker, and it was replaced by just a noisy electromagnet called a sounder.

It was found that as the distance between the keyer and the sounder increased, higher

voltages were required, making a practical limit to the range. A sensitive, low current electromagnet could be used that operated a switch contact. This switch operated a sounder, more than doubling the distance that could be covered. By using the switch to replace the sending key, the message could be sent on for another long distance, and the operation could be repeated as many times as needed. There was now no limit to the distance the system could cover. The electromagnet was operating like a relay, and the name stuck.

Around 1900, batteries were made of multiple cells that used metal plates immersed in an acid electrolyte. This worked well for commercial stationary purposes, but they were needed great care to keep them working and safe from spills. A man had invented a toy that required an electrical current, but he realized that his toy would not sell very well if children had to use these wet cells. He came up with the idea of soaking an electrolyte in a material, making a paste. One of the plates was made of zinc, shaped in a cylinder with a bottom, which also provided the container. The other plate was made up of a carbon rod placed in the center of the paste, with the top sealed by an insulating material. Since there could be no spillage, he called the device a dry cell. Sales of his toys went wild. One day he approached a friend and asked him if he would like to go into the business of manufacturing these dry cells. He simply wanted to concentrate on his toys, but the dry cells were a necessary nuisance. His friend accepted the offer and developed a company that he aptly called Eveready. The first man's name was Lionel.

An amplifier is a device that uses a small input that produces a large output. If some of the output is fed back to the input in the correct phase, the amplifier will oscillate. In the late 1800s Bell had invented the telephone. This used a microphone that contained a capsule of finely ground carbon. Sound reaching a diaphragm attached to the capsule would vibrate it, changing its resistance. A current flowing through the carbon would then change along with the sound. When connected in series with an electromagnet wound around a permanent magnet, the resulting magnetic field would move a metal diaphragm, reproducing the sound. If the resulting sound was fed back to the microphone, it would then oscillate, demonstrating that the sound of the output was greater than the sound of the input.

Thanks to Paul, W8IQE for this interesting little writeup!

September 2012 Treasurer's Report

Starting balance 7/29/2012	1,800.57
Deposits: none	
Checks:	
Bank, new checks	18.95
Ending balance as of 8/25/2012	1,781.62

Grand Haven Community Foundation balance 5,285.93

September 2012 calendar of events and net control schedule

Every Tuesday:

NOARC net/coffee at Russ' in Grand Haven
8:00 PM

Every Wednesday:

Breakfast at Idle Hour Restaurant in Spring Lake
7:00 AM

Every Saturday:

Breakfast at Vic's Restaurant in Spring Lake
7:00 AM

September 8:

GRAHamfest, Grand Rapids
<http://www.grahamfest.org>

September 10:

HARC monthly meeting
Ottawa Red Cross, James St, Holland
7:00 PM

September 16:

Adrian Hamfest
<http://www.w8tqe.com/hamfest.htm>

September 27:

NOARC monthly meeting
Spring Lake District Library
6:30 PM

September 29:

Oktoberfest Marathon
Old Boys Brewhouse, Spring Lake

NOARC net control schedule:

September 4: **John, N8YQD**
September 11: **Joe, N8FQ**
September 18: **Bev, KC8JWA**
September 25: **John, KC8UNY**

Swap 'n shop

For Sale: Zenith Trans-Oceanic all-band radios – John Sundstrom, N8YQD

For Sale: Textbooks on basic electronic theory, multimeters and oscilloscopes – Paul Zellar, W8IQE

Wanted: Good, working tubes – Jerome Novotny, K8CCJ – 231-206-1388



NOARC membership form

Dues:

Individual: \$25 yearly or \$70 for 3 years

Family: \$35 yearly or \$75 for 3 years

Name: _____ **Callsign:** _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____ **E-mail:** _____

Make checks payable to **NOARC**

Mail form to:

NOARC

PO Box 976

Grand Haven, MI 49417