

The NEWSLETTER

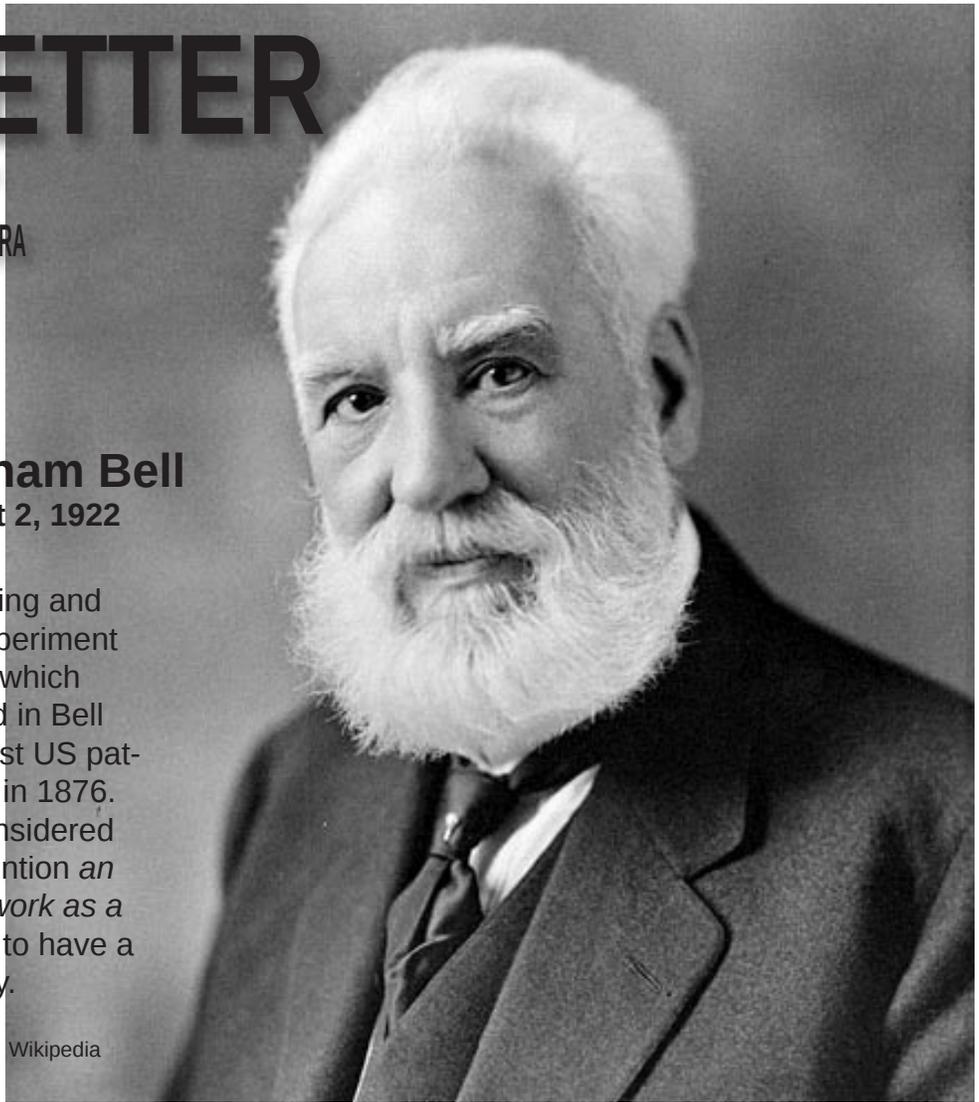
MARCH 2014 VOLUME 14, No. 3

Mercury Amateur Radio Association - MARA
North America - North East

Alexander Graham Bell March 3, 1847 - August 2, 1922

His research on hearing and speech led him to experiment with hearing devices which eventually culminated in Bell being awarded the first US patent for the telephone in 1876. In retrospect, Bell considered his most famous invention *an intrusion on his real work as a scientist* and refused to have a telephone in his study.

Wikipedia



CONTENTS

- 2** GRANDMA MARA'S RAMBLINGS
 - RAMBLINGS OF AN OLDER PERSON - FIXIN' ON THE (ANTENNA) FARM
- 2** FEATURE ARTICLE
 - ALEXANDER GRAHAM BELL - A MAN OF MANY TALENTS.
- 5** TECH (and other) STUFF
 - EVEN A BAD ANTENNA IS BETTER THAN NO ANTENNA ... continued
 - MINOR UPDATE - SQUIDPOLE ANTENNA
 - ARRL FIELD DAY
- 6** QUOTE OF THE MONTH
 - ALEXANDER GRAHAM BELL
- 6** DI-DA-DI-DA-DIT
 - WINTER BLAHS

OTHER STUFF

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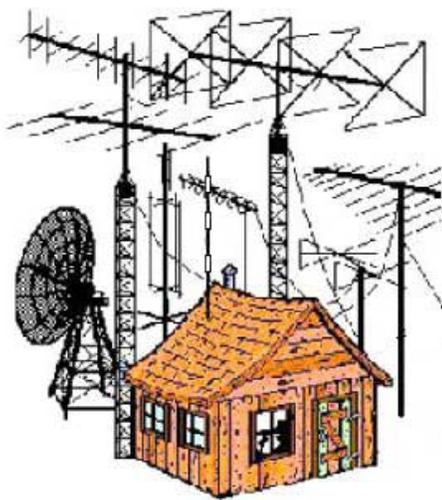
*Links that will take you to web locations referenced in this newsletter are shown in **BOLD blue text**.*

E-mail your comments, ideas, or submissions to marane@mara.net or to ve1vq@eastlink.ca

Grandma Mara's RAMBLINGS

March is the month that can't seem to decide whether to stay as winter or move along into spring. On the part of the east coast where we live, it may have a day or two with warmish temperatures and little or no wind, leading you to think that the cold has finally broken and you can put away your *long johns* for another year; immediately followed by over-cast days of below freezing and flurries, or even a major late dump of snow.

Walter says that the good days of late March/early April are the best ones to work on antennas. Not too hot and not too cold. No flies or other annoying creatures. I have to agree with him, although my leaning is more toward late April and early June.



Over the next two months we will, as the weather permits and at our leisure, give the antenna farm its annual preventive maintenance overhaul. Before we were married, I tended towards the side of the fence that thought you only worked on an antenna when it failed. However, I have come to see Walter's side as well, which is to fix things before a catastrophic situation arises, so you are never totally out of commission and off the air. I have to admit, it is a lot of fun to spend a few days, side by side, working at things you enjoy doing. And as both of us are retired, we don't have to rush to accomplish the task.

At our age, we've come to realize that there are things in our lives that we were doing out of the mistaken idea that we had to do it or otherwise it wouldn't get done at all. During a recent family home evening, the two of us made a list of the things that took us out of the house during the days and evenings. We found that a lot of it was as VE1VQ said in last month's newsletter, something to keep us busy. We decided that lots of it could just as easily be done by others, so we gracefully bowed out of as many as we could, or gave the various groups several

month's notice. Not all of them, mind you. Just the ones that weren't on the top of our list.

Wendy is involved in a whole slew of school, community, and church activities. Her mother was saying to me that some days she hardly sees her! I remember being that age and having the energy to do those many things. Must be that high level of get-up-and-go gets up and goes, as both the years and the symptoms of "the rheumatiz" advance. AR



Daylight Savings Time Begins
Sunday, March 9
Set your clocks forward 1 hour

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FEATURE ARTICLE

Alexander Graham Bell

The following is excerpted from
WIKIPEDIA.org

For the full article, see
http://en.wikipedia.org/wiki/Alexander_Graham_Bell

Alexander Graham Bell was born on the third of March in the year 1847 in Edinburgh, Scotland. His father was Alexander Melville Bell, and his mother was Eliza Grace (née Symonds).

At the age of ten, he begged his father to have a middle name like his two brothers. For his 11th birthday, his father gave in and allowed him to have the middle name of Graham, after a friend of the family, whom young Alexander admired.

Historians have noted that at an early age he was curious about the world around him, collecting botani-

cal specimens, and performing experiments. At the age of 12, he invented a device made from rotating paddles and nail brushes, to husk wheat for his friend's father who operated a flour mill. He learned to play the piano with no formal training becoming the family's pianist.

He was deeply affected by his mother's gradual deafness which began when he was twelve, learning a form of hand sign language in order to communicate with her. This preoccupation with her deafness led him to study acoustics and elocution.

Under his father's tutelage he became very skilled at "Visual Speech" or lip reading. Alexander became so proficient that he became a part of his father's public demonstrations and astounded audiences with his abilities. He could decipher Visible Speech representing virtually every language, including Latin, Scottish Gaelic and even Sanskrit, accurately reciting written tracts without any prior knowledge of their pronunciation.

His early education was largely conducted at home. He attended the Royal High School in Edinburgh but left at 15, being an undistinguished student with "lack lustre grades".

Upon leaving school, Bell travelled to London to live with his grandfather, Alexander Bell. During the year he spent with his grandfather, a love of learning was born, with long hours spent in serious discussion and study.

The death of both his brothers from tuberculosis, and his father's realization that Alexander was not in good health, led the family to sell everything and move to Canada in May of 1870. They purchased a farm in the Brantford, Ontario area.

While there, he found the Six Nations Reserve across the river at Onondaga. He learned the Mohawk language and translated its unwritten vocabulary into Visible Speech symbols. For his work, Bell was awarded the title of Honorary Chief.

Bell's time became filled with teaching and working with the deaf, both in Canada and the USA. Helen Keller was probably his most famous student, coming to him blind, deaf, and unable to speak. Even with limited time available, he continued to experiment with ways to transmit sound over a wire.

Bell's patent 174,465, was issued on March 7, 1876, by the U.S. Patent Office. The patent covered "the method of, and apparatus for, transmitting vocal or other sounds telegraphically ... by causing electrical undulations, simi-

lar in form to the vibrations of the air accompanying the said vocal or other sound."

On July 11, 1877, a few days after the Bell Telephone Company was established, Bell married Mabel Hubbard (a former deaf student and ten years younger) at the Hubbard estate in Cambridge, Massachusetts. His wedding present to his bride was to turn over 1,487 of his 1,497 shares in the newly formed Bell Telephone Company.

Bell and his partners offered to sell the patent outright to Western Union for \$100,000. The president of Western Union balked, countering that the telephone was *nothing but a toy*. Two years later, he told colleagues that if he could get the patent for \$25 million he would consider it a bargain. By then, the Bell company no longer wanted to sell.

In 1885, the Bell family vacationed in Cape Breton, Nova Scotia.

Liking the area, the next year construction began on a summer home. By 1889, the home was complete. Two years later, additional buildings, including a laboratory, were begun. The Bells would name the estate *Beinn Bhreagh* (Gaelic for *beautiful mountain*). Until the end of his life, Bell and his family would alternate between the two homes (Washington, DC and Beddeck, NS), but Beinn Bhreagh would, over the next 30 years, become more than a summer home as Bell became so absorbed in his experiments that his annual stays lengthened.

The range of Bell's inventive genius is represented only in part by the 18 patents granted in his name alone and the 12 he shared with his collaborators. These included 14 for the telephone and telegraph, four for the photophone (a wireless telephone which allowed for the transmission of both sounds and normal human conversations on a beam of light), one for the phonograph, five for aerial vehicles, four for "hydroairplanes" and two for selenium cells. Bell's inventions spanned a wide range of interests and included a metal jacket to assist in breathing, the audiometer to detect minor hearing problems, a device to locate icebergs, investigations on how to separate salt from seawater, and work on finding alternative fuels.

Bell is also credited with the invention of the metal

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detector in 1881. The device was quickly put together in an attempt to find the bullet in the body of U.S. President James Garfield.

In 1888, Bell was one of the founding members of the National Geographic Society, and served as its president from 1896 to 1904, also helping to establish its journal.

In 1891, Bell had begun experiments to develop motor-powered heavier-than-air aircraft. The Aerial Experiment Association (AEA) was first formed in Baddeck, Nova Scotia, as Bell shared the vision to fly with his wife, Mabel, who advised him to seek “young” help as Alexander was at the graceful age of 60.

The AEA was headed by Bell and the founding members were four young men: American Glenn H. Curtiss, a motorcycle manufacturer at the time and who held the title “world’s fastest man”, having ridden his self-constructed motor bicycle around in the shortest time, and who was later awarded the Scientific American Trophy for the first official one-kilometre flight in the Western hemisphere, and who later became a world renowned airplane manufacturer; Lieutenant Thomas Selfridge, an official observer from the U.S. Federal government and the only person in the army who believed aviation was the future; Frederick W. Baldwin, the first Canadian and first British subject to pilot a public flight in Hammondsport, New York, and J.A.D. McCurdy, a Canadian who later became the 20th Lieutenant Governor of Nova Scotia.

The AEA’s work progressed to heavier-than-air machines, applying their knowledge of kites to gliders.

In 1898, Bell experimented with tetrahedral box kites and wings constructed of multiple compound tetrahedral kites covered in maroon silk. The tetrahedral wings were named Cygnet I, II and III, and were flown both un-manned and manned in the period from 1907–1912.

Various aircraft designs were developed and flown. By the end of 1908, over 150 flights without mishap had

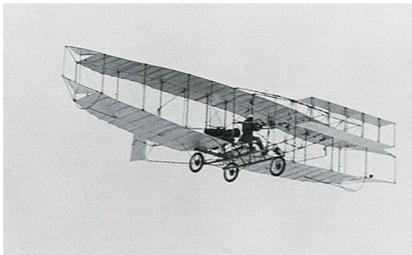


Photo of the Silver Dart - taken in 1909.



Photo of the Bell HD-4 hydrofoil, taken in 1909.

been accomplished. Their final aircraft design, the Silver Dart embodied all of the advancements found in the earlier machines. On February 23, 1909, Bell was present as the Silver Dart flown by McCurdy from the frozen ice of Bras d’Or, made the first aircraft flight in Canada.

Bell’s experiments with hydrofoil design led him to the development of practical hydrofoil watercraft. On September 9, 1919, the HD-4 set a world marine speed record of 70.86 miles per hour (114.04 km/h), a record which stood for ten years.

Bell died of complications arising from diabetes on August 2, 1922, at his private estate, Beinn Bhreagh, Nova Scotia, at age 75. His last view of the land he had inhabited was by moonlight on his mountain estate at 2:00 A.M.

Bell’s coffin was constructed of Beinn Bhreagh pine by his laboratory staff, lined with the same red silk fabric used in his tetrahedral kite experiments.

Upon the conclusion of Bell’s funeral, “every phone on the continent of North America was silenced in honor of the man who had given to mankind the means for direct communication at a distance”.

Dr. Alexander Graham Bell was buried atop Beinn Bhreagh mountain, on his estate, overlooking Bras d’Or Lake.

Bell has been proudly claimed as a “native son” by all three countries he resided in: the United States, Canada and the United Kingdom.

Alexander Graham Bell Museum



Should you ever happen to find yourself in Nova Scotia, take time to visit the [Alexander Graham Bell museum](#) in Baddeck, on the island of Cape Breton. It’s about a four hour drive from the Halifax International Airport. The museum and the surrounding grounds are maintained by Parks Canada as “a unique exhibit complex where models, replicas, photo displays, artifacts and films describe the fascinating life and work of Alexander Graham Bell.”

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TECH AND OTHER STUFF

by VE1VQ

EVEN A BAD ANTENNA IS BETTER THAN NO ANTENNA ...continued

There's a lot of no-radials-required verticals on the market these days. Claims are made that you don't have to lay down any of that unnecessary ground wire stuff. I must be old school (and I'm certainly not an antenna engineer) but I have to wonder how efficient these things really are. A well written technical article entitled *Vertical Antennas, Ad Hype And Tech-nobabble* that debunks the claims the manufactures make about their products, can be found on Bencher's web site at <http://www.bencher.com/pdfs/00815ZZV.pdf>. The math (such as it is) is kept simple for us simple folks.

I once had a CW contact with someone down in the US while tuning up in the old eighty meter novice band with nine or so inch leads to a sixty watt light bulb as a dummy load. It wasn't 599 by any means but it was a good solid contact. Every once in a while you read about someone making a contact using their Heathkit Cantenna dummy load. Think QRPp!

So this harkens back to last month's column title of *WHERE EVEN A BAD ANTENNA IS BETTER THAN NO ANTENNA*. If most of your transmitter's RF ends up warming the antenna's ground loss resistance, or is lost in a crumbly radiator, but enough escapes as radiated energy and makes it to some other amateur's receiver, who is to say your no-radial antenna doesn't work! Work being a relative term. Perhaps your house lot doesn't allow the luxury of the space necessary to install the radials required for a standard ground mounted vertical. Or you are in one of those restricted communities that frowns on anything except perfection. Whatever the reason, you make the best of whatever you can for an antenna.

If, however, you have a choice, and you are going with a vertical, choose one requiring a real ground plane. Install as many radials as you can and make them at least the same length as the vertical element. Lay them on top of the grass and use "staples" made from wire coat

Every once in a while you read about someone making a contact using their Heathkit Cantenna dummy load.

hangers to keep them in place while the grass grows over them. If you feel the need, they may be buried a half inch to one inch deep. Don't bother to sink them any deeper as that is a waste of your time and energy. Insulated or un-insulated matters not as far as operation or efficiency goes. Copper is the best; stranded or single conductor doesn't matter.

Stay away from iron wire as it is a very poor conductor (compared to copper).

Aluminum wire will work, but may or may not last very long in your climate or soil. Some hams have reported success, others failure. One comment I read of the failure side was them only lasting six months. If you have the time, you probably should

stick a sample piece on the grass or in the ground, for a period of time before committing to the full meal deal. If not, then ask other amateurs in the area who have HF verticals, about radial materials. It wouldn't be so great to spend hours laying down all those radials, only to find them totally gone in a few month's time. You will also have to use anti-oxidant paste if you are joining or connecting aluminum to copper. Unless you have a cheap source of aluminum wire, is it really a good idea to take a chance?

We're talking ham thrift and ingenuity here. If you can get any kind of conductive wire for free then experiment with it. As one example, I've seen where a ham was given box ends of ethernet cable. He removed the outer cable covering and used the wire pairs as radials. If you have to purchase wire, then you have to weigh the costs versus benefits.

Minor update on the Squidpole vertical antenna project

The eight 33-foot long tape measures I originally purchased to use as radials for the SQUIDPOLE ANTENNA were obtained from **PRINCESS AUTO** here in Canada. When I decided that I wanted additional for further experimentation, they were out of production and no longer available. Those I found on E-Bay cost more than I wanted to pay.

PICTURE DIFFERS FROM ACTUAL ITEM



HFT 33-FOOT TAPE MEASURE ITEM # 41255

Aluminum wire will work, but may or may not last very long in your climate or soil.

Eventually, I found some inexpensive ones at **HARBOR FREIGHT**. If you are a fan of HFT then you will sooner or later figure out that most of their stuff will go on sale at some time or another. So it was with these. On a recent trip to Missoula MT I picked up eight on sale for \$3.89 each (down from \$4.99) at the outlet there.

ARRL Field Day

June 28 and 29th, 2014

“ARRL Field Day is the single most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June of each year, more than 35,000 radio amateurs gather with their clubs, groups or simply with friends to operate from remote locations.



“Field Day is a picnic, a camp out, practice for emergencies, an informal contest and, most of all, FUN! It is a time where many aspects of Amateur Radio come together to highlight our many roles. While some will treat it as a contest, other groups use the opportunity to practice their emergency response capabilities. It is an excellent opportunity to demonstrate Amateur Radio to the organizations that Amateur Radio might serve in an emergency, as well as the general public. For many clubs, ARRL Field Day is one of the highlights of their annual calendar.

“The contest part is simply to contact as many other stations as possible and to learn to operate our radio gear in abnormal situations and less than optimal conditions.” 

QUOTE OF THE MONTH

“When one door closes, another opens; but we often look so long and so regretfully upon the closed door that we do not see the one which has opened for us.”

Alexander Graham Bell

DI-DAH-DI-DAH

I don't know about where you live but this winter seems to have been going on forever! Usually, we have a break in the cold, come mid January or early February, where the snow and ice melt, kind of giving one hope that warm weather will come again. Not this year. I know when you get old that your mind plays tricks, but this year it seems that we've had a snow storm every week, and several inches of snow fall every day. When we do see the sun it's only for a few hours. Just long enough to get your hopes up that maybe, just maybe...

There won't be any antenna work going on here for a while. The rate this winter is going it will be another couple of months before my propane torch will melt any solder outside. Yes, I know that antennas are supposed to work better when they are installed in the cold. Whoever thought up that myth? Most likely someone who lives in Florida or southern California, and who never has to wear mittens, three layers of coats, and insulated foot wear, to work on his or her antenna.

I suppose I could move to either of those two places, but then I'd have to put up with bugs, snakes, and other creepy-crawlies this Canadian boy has never had to deal with before. Vancouver Island in British Columbia has a better climate than the rest of Canada but their housing costs and taxes are higher than here in Canada's Ocean Playground (and they certainly are high enough here!).

So, what's an antenna lovin' amateur to do? Only one thing left at this time of the year. Blow the virtual dust off your copy of EZNEC or whatever brand of antenna software you prefer, and pretend there is a warming trend on the way. Sooner or later the weather will break (please - tell me it will!).

Until next month,
VE1VQ

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