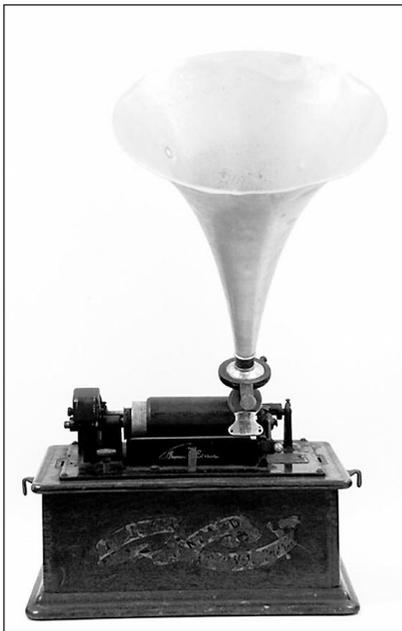


Bermuda's first iPod and iPhone connection

'Few people shared Fessenden's belief that broadcasting voices was possible. When he asked the opinion of the great Thomas Edison, Edison replied, "Fessie, what do you say are man's chances of jumping over the moon? I think one is as likely as the other." Edison was wrong.' — "The Forgotten Canadian, Reginald Aubrey Fessenden (1866-1932) Physicist Inventor", www.kwarc.org/fessenden.html

HERITAGE MATTERS

DR. EDWARD HARRIS



New technology: The 1903 model of an Edison phonograph, formerly Ernest Smith's "entertainment centre".

Forty-four years ago, the Bermuda Mid Ocean News ran an article on one of the early wonders of the modern age, namely, one of the first phonograph record players, then said to be around 30 years old. The Apple "iPod", the latest evolution of that genus, *Recordus Playtus*, but of the species *electronicus*, is the direct descendant of that machine and marks the fact that only for a mere century and a quarter of the thousands of years of human existence had we been able to record sound and play it back at our leisure. Where would you have been just recently with new download possibilities for the iPod, Mr. Steve (Apple) Jobs, if we had not been able to record The Beatles half a century ago?

The machine in question in 1966 was one of the first produced by Thomas Edison in the 20th century, being the model of 1903, a development of his first phonograph invented in 1877. The player was operational into the 1960s, but its owner, Ernest Smith, confessed that he was unable to clean the "records", which were cardboard cylinders. In splendid condition, Mr. Kenneth Henneberger, the son-in-law of Mr. Smith, donated the machine a few years ago to the National Museum of Bermuda. Its most distinctive physical feature is the large megaphone for the amplification of the sound contained in the cylinders.

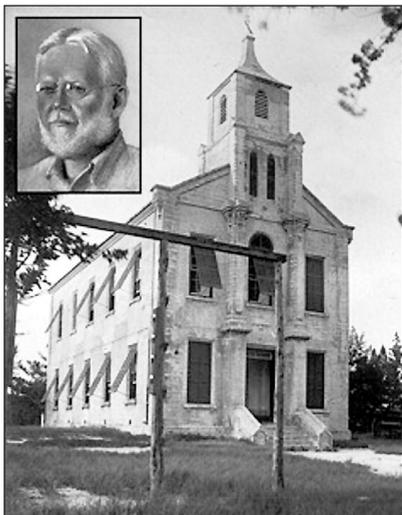
Having inherited the phonograph from his parents, Mr. Smith enjoyed the voice of the great tenor Enrico Caruso, among other singers. Taking advantage of the new sound wave, opera "rock star" Caruso recorded no less than 290 performances from 1902 to 1920, all available as digital downloads to your iPod, as counterpoint to whatever is in vogue with the young today.

The first phonograph known

to have appeared in Bermuda was carried ashore in August, 1889 by Reginald Aubrey Fessenden, formerly the principal and only teacher at Whitney Institute for two years from 1884. The school was not the only attraction in Smith's Parish, for Fessenden met and later married a Bermudian lady, Miss Helen Trott, of that district. He is buried in the lovely cemetery of the parish church, St Mark's, at the crest of McGall's Hill, with one of the most handsome memorials in that graveyard. Helen and Reginald had but one child, a son, Reginald Kennelly, who was lost in a boating accident at Bermuda in 1944. Many students from Helen's death in 1941, however, will have cause to

remember and be thankful to the Fessenden-Trott family for the yet enduring scholarships given out annually to Bermudian and Canadian students in that name, a tribute to her husband instituted by Mrs. Fessenden.

Born in Canada 100 years before Ernest Smith displayed his phonograph to the Bermuda public, Reginald Aubrey Fessenden left school without a degree the year he came to the Island. After Bermuda, he moved to New York and in 1886 began to work at Thomas Edison's research laboratory in New Jersey. Thereafter he took employment with several manufacturing companies, but in 1893, George Westinghouse recruited Fessenden to head the new chair of



Bermuda connection: The Whitney Institute in about 1900, and an inset of Reginald Fessenden, who was headmaster of the school for two years soon after it was founded. Photo courtesy of William S. Zull

Electrical Engineering at what became the University of Pittsburgh. Through the rest of that decade, Guglielmo Marconi was having some success in the development of radio, but Fessenden turned his research efforts to that arena, as he thought he could develop a better system.

So it was on December 23, 1900 that he was able to transmit speech successfully for the first time. Further research and machine developments led to the "first audio radio broadcasts of entertainment and music ever made to a general audience". Thus on Christmas Eve 1906, Reginald Fessenden broadcast a phonograph recording of "Largo" by Handel. That was followed by the inventor himself playing "O Holy Night" on his violin over the airwaves, with the historic

broadcast ending with a quotation from the Bible. There followed years of litigation to protect his inventions in that field, which he finally settled with the Radio Corporation of America for a large sum in 1928. Eventually, Fessenden would hold some 500 patents for inventions in many fields, including such disparate ones as microfilm and seismology.

"In addition to the inventions already mentioned, Fessenden gave us the radio pager (he called his device a beeper); he gave us sonar, which he demonstrated could detect icebergs, and his fathometer to measure the depth of water beneath the keel of a ship. He gave us turbo-electric drive to power ships; the first gyrocompass, the loop antenna; radio direction-finding; his periscope for submarines; a

first TV receiver; ultrasonic methods for cleaning; electrical conduit; carbon tetrachloride; and tracer bullets."

In an article entitled "Genesis for Apple Inc. iPhone Was Pitt Experiments That Led to First Wireless Phone 'Call' in 1900" in the June 21, 2010 Pitt Chronicle, the newspaper of the University of Pittsburgh, Morgan Kelly ties Fessenden to the classiest wireless voice device on the market. "The iPhone 4 hitting stores June 24 may put Cupertino, California-based Apple Inc. ahead in wireless technology, but behind it is the work of a University of Pittsburgh engineering professor (Fessenden) 110 years ago that establishes Pittsburgh as a key location in the advent of wireless telephony."

"The modern cell phone is essentially what Fessenden wanted: A telephone where people could talk normally to each other and not be tethered by cords," said Martin Mittlek, a Pittsburgh professor. Kelly went further that "in 1902, Fessenden received a patent for what could be called the original "app" — his Apparatus for Signaling by Electromagnetic Waves, the basic technology behind wireless telephony."

Perhaps Reginald was thinking of Bermuda, when "in 1926, nearly 30 years after his first wireless experiments at Pitt, Fessenden reflected on the trying process in a speech to the Radio Institute in New York City by saying: "A good deal of hard work went to the inventing of the wireless telephone: both research, going over a fishing place to find what fish are there, and invention, or deciding you want a certain fish and going after it until you get it."

Even more fitting perhaps from a maritime perspective is part of the epitaph on his Bermuda tomb:

By his genius distand lands converse and men sail unafraid upon the deep.

Edward Cecil Harris, MBE, JP, PhD, FSA is Executive Director of the National Museum of Bermuda incorporating the Bermuda Maritime Museum. Comments may be made to director@bmm.bm or 704-5480.



Entertainment centre: Ernest Smith with the Edison phonograph player in his yard in September, 1966.



Resting place: The Fessenden memorial, St. Mark's Cemetery, with inset detail of Egyptian hieroglyphics for "I am yesterday and I know tomorrow".

EXHIBITIONS

Bermuda Art Centre at Dockyard: Small Works: The annual show of small work, December 5 and is up until January 2011. Open daily 10am to 5pm. Admission free. For more information telephone 234-2809, e-mail: artcentre@tbl.bm or visit www.artbermuda.bm. Wheelchair accessible.

Bermuda Society of the Arts: Onions Gallery: Members' Winter Show. Edinburgh Gallery: Lynn Morell. Studio A: Twisted. Studio B: Small Works In Oil by Kok Wan Lee. Until December 14. For further information telephone 292-3824. Gallery hours are from 10am to 4pm and Saturday 10am to 2pm. Top floor of City Hall. **Common Ground Cafe/Gallery Se-**

lect Palette Art Frank Dublin's Pastels and Oil Paintings by Frank Dublin. Next exhibition is Kendra Earls, which opens on December 16. Further information: Susan Pearson on 505-4290 or e-mail SPAr@logic.bm 11 Chancery Lane, Hamilton. Open 7.30am to 5pm Monday to Friday, Saturdays 8am to 3pm.

The Windjammer II Gallery Paintings from the Great Era of Steam and Sail by professional marine artist Stephen J. Card. Also hand-carved Bermuda cedar boat models by Milton Hill. Until November 25. Opening hours: Tuesday to Friday 10am to 5pm, and Saturday and Sunday 12pm to 5pm. Ground floor of the Fairmont Hamilton Princess.

Telephone 238-0173 or 295-1783. **Masterworks Museum of Bermuda Art: The Butterfield Family Gallery** "Floral Lane". Botanical Gardens, Paget. **Elliot Gallery** 27 Jubilee Road, Devonshire. Gallery hours: Tuesday to Saturday 10am to 2pm or by appointment. Further information: 542-9000 or e-mail kaleidoscopeartsfoundation@logic.bm or visit www.kaf.bm **Desmond Fountain Gallery:** Viewing by appointment only. Telephone 747-3955. **Crison & Hind Fine Art Gallery:** Hand-carved African sculptures by master Shona artists of Zimbabwe. Second floor, Crison Building, 71 Front Street. 9am to 5pm.

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