

Nikola Tesla

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I. BIOGRAPHY



Fig. 1. Nikola Tesla.

Nikola Tesla was an extraordinary genius in modern history. Many of his great inventions and insightful theories have made massive influences on electrical engineering and the field of wireless communication.

Tesla was born in the Austrian Empire and grew up there. He studied engineering and physics but failed to receive a degree due to gambling [1]. Working in telephony and at Continental Edison Company, Tesla gained practical experience in the early 1880s. Then, in 1884 he emigrated to the United States and worked for a short time at the Edison Machine Works in New York City, but then he struck out on his own. With the help of partners and investors, Tesla set up laboratories and companies in New York to conduct experiments and devise his products [2].

Among his countless inventions, he was best known for the design of the modern alternating current electricity supply system [3]. His alternating current induction motor and related polyphase AC patents earned him a great fortune. Another successful invention of his is Tesla Coil, which could be used to produce high-voltage, low-current, high-frequency alternating-current electricity.

Besides, Tesla conducted a series of experiments with mechanical oscillators, generators, electrical discharge tubes, and early X-ray imaging [2]. He even built a wireless-controlled boat. Throughout the 1890s, Tesla kept trying to realize his goals about wireless lighting and worldwide wireless electric power distribution in his experiments in New York and Colorado Springs [4]. In 1893, he made some pronouncements on the possibility of wireless communication with his devices. Tesla tried to put these ideas into practical use in his unfinished Wardenclyffe Tower project, which was an intercontinental wireless communication and power transmitter, but ran out of funding before he could complete it [5], which led to his failure in the competition with Marconi.



Fig. 2. Wardenclyffe Tower.

After the failure, Tesla experimented with other inventions in the 1910s and 1920s and achieved varying degrees of success. Running out of his money, Tesla lived in various New York hotels in turn, leaving huge unpaid bills all behind.

Eventually, he died in New York City in 1943 [2].

II. ANECDOTES

A. Strange Signals

During his experiments in Colorado Springs, Tesla once observed unusual signals from his receiver which he speculated to be communications from another planet [6]. Reporters treated it as a sensational story and jumped to the conclusion that Tesla was hearing signals from Mars. Then he expanded on the signals he heard in a 9th February 1901 Collier's Weekly article entitled "Talking with Planets", where he said it had not been immediately apparent to him that he was hearing "intelligently controlled signals" and that the signals could have come from Mars, Venus, or other planets.

It has been hypothesized that he might have intercepted Guglielmo Marconi's European experiments in July 1899. At that time, Marconi might be transmitting the letter S in a naval demonstration, which carried the same three impulses that Tesla hinted at hearing in Colorado. If that was the truth, he might have beaten Marconi in a sense and been the first person to receive a signal at a long distance, even the pioneer of radio communication [7].

B. Love for pigeons

Feeding pigeons in the park is a daily routine for Tesla. He also fed them at the window and took care of injured birds. He said a certain injured white pigeon visited him every day. He spent over \$2,000 to care for that bird, including a device he built to support her during her recovery. Tesla said [8]:

"I have been feeding pigeons, thousands of them for years. But there was one, a beautiful bird, pure white with light grey tips on its wings; that one was different. It was a female. I had only to wish and call her and she would come flying to me. I loved that pigeon as a man loves a woman, and she loved me. As long as I had her, there was a purpose to my life."

This might be a possible explanation for his unmarried life.

III. SUMMARY

Nowadays, when we enter Tesla in the search box, tons of messages will pop out, including the Tesla company. In fact, the company's name is a tribute to Nikola Tesla. As Elon Musk once said [9], "*Nikola held more than 700 patents and remains an inspiration to me personally and to many entrepreneurs and inventors – both in Silicon Valley and around the world.*" Meanwhile, the unit of magnetic flux density is also named after Tesla.

Tesla lived a contradictory life. He was talented enough to invent tons of products and obtain countless patents, but foolish enough to waste his studies for gambling. He was so lucky that he survived cholera, but so tragic that he lost backup when he was so close to success. He died silently in a hotel room, but his name made a big noise in the whole wide world.



Fig. 3. Logo of Tesla Inc.

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