



GLOBAL SHORTWAVE CLUB

Newsletter

President

William G Davis Jr

Contact Us!

Don't forget to call or write to us at least once a month. We welcome more if you have time!

Phone Numbers

315-775-8790

Address

International Christian
Temple Church®
Shortwave Club
3301 Emmorton Rd
Abingdon, Md 21009
U.S.A.

Visit our website!

www.ictchurch.org

We have a whole area dedicated to our Global Shortwave Club members. You can also find our current frequencies and times!

Current Radio Schedule

WWCR
Worldwide Christian
Radio

Monday through Friday

5.890 - 0300 UT
13.845 - 1800 UT

Saturday

4.840 - 0200 UT
12.160 - 1700 UT

Sunday

4.840 - 0200 UT
9.350 - 2100 UT

Tesla's Contribution to Radio Part 1

Sometime last year, Global Shortwave member 1312 from Summit, New Jersey, kindly reminded me that I did not mention Nicolas Tesla's contributions to radio and signal communication. I appreciate your interest and have researched information about his involvement. Since there is a lot of data about Tesla, I hope to write several newsletters concerning his work.

Around 1890, Nikola Tesla entered a new and unknown field of high-frequency currents by following research and inventions in polyphase low-frequency alternating current systems of generation, transmission, and utilization.

After developing new generators capable of producing higher-frequency alternating currents, he turned his attention to generating alternating currents by discharging a condenser through a coil coupled to another coil, the secondary of a "Tesla transformer."

In his three famous lectures between 1891 and 1893, he presented many new characteristics and possible uses of high-frequency currents for illumination, medicine, industry, and wireless energy transmission.

From 1891 to 1892, he developed a way to connect the generator to the antenna through a tuned Tesla transformer for wireless energy transmission. In 1893, he disclosed the principle of a wireless energy transmission system with an already-explained radio transmitter and receiver tuned to the transmitter's operating frequency.

In 1897, Tesla submitted two patents on apparatus and electrical energy transmission systems, issued in 1900. The Marconi Wireless Telegraph Company of America used these patents in the Supreme Court case brought against the United States of America, alleging that they had used wireless devices that infringed on Marconi's June 28, 1904, patent.

After 25 years, the United States Supreme Court, on June 21, 1943, invalidated Marconi's fundamental American radio patent as having nothing that was not already contained in patents granted to Lodge, Tesla, and Stone.

However, despite this and many others who recognize Tesla as one of the radio pioneers, inventing the basic radio principle of four-tuned circuits, Tesla's name is still waiting for full recognition of his role in developing radio.

Limited scientific research exists on the most efficient frequency for alternating currents in industrial use, which ranges between several tens and several hundreds of Hertz.

During a practical experiment exploring the influence of frequency on the devices he constructed, Tesla generated such currents by changing the generator's rotation speed.

That was enough for the first research phase, but it was not enough for further efforts when he focused on constructing a generator of higher-frequency currents. Higher-frequency generators need a high pole number and the highest permitted rotor speed. Tesla's patents include two original constructions of these machines, which produced alternating currents up to 15 kHz.

When he wanted an even higher frequency, he used oscillatory discharge of a condenser through a coil (already known then). Still, he invented a novel circuit by replacing a simple coil with a loose coupling transformer.

This modification was so significant that it created a new field of research, leading to radio and many other applications of high-frequency alternating currents. The transformer used in this modification is known as the "Tesla coil," which is still widely used today.