

## Lee de Forest and the Aural World

By Bart Lee, Foreword to

Mike Adams,

LEE DE FOREST, KING OF RADIO, TELEVISION, AND FILM (2012)

Lee de Forest could hold in one hand one of the most important devices of the 20<sup>th</sup> Century, the triode vacuum tube that he had invented in 1906, and in the other hand, a gold Oscar that the American Academy of Motion Pictures awarded him mid-20<sup>th</sup> Century for his pioneering work in bringing sound, voices and music, to movies. De Forest's driving fascination with the power of sounds to carry intelligence, and hearing those sounds, links the two.

Mike Adams tells Lee de Forest's story in a new and compelling way. De Forest's story ranges from an early technical mastery of flame, to the final mastery of sound. It is a splendid tale of a definitive 20<sup>th</sup> Century life. De Forest is the paradigm inventor, perhaps all-too-human. Mike Adam's story is well told. De Forest went through fortunes and he went through wives. But in the end, his technical legacy astonishes, and his last marriage to young movie star, Marie Mosquini, sustained them both into his ripe old age.

Lee de Forest discovered “an Invisible Empire of the Air” just as he claimed. It is now the Empire of Electronic Media in which we live. But radio provided the foundation for it all. De Forest more than anyone else deserves the title “Father of Radio” just as he also claimed. For de Forest heard the world as much if not more than he saw it. His was the Aural World, not the Visual World. He knew great music and wrote good poetry. He heard and wanted to help others, millions of others, also to hear.

The wireless telegraphy born around him printed its messages. But de Forest conquered that technology by hearing the signals sent out by the early spark transmitters. He improved that art by making its signals tones of higher frequency, more easily heard in poor conditions (and in retrospect on primitive equipment).

We think of the 20<sup>th</sup> Century radioman wearing earphones. For that we can thank de Forest. He moved on, a restless man and a restless inventor. He invented one of the most important devices of the 20<sup>th</sup> Century, the three-element vacuum tube (the “radio tube”) working first with flame. He did so in order to hear signals. He leapt at the suggestion of the name “Audion” for his device. To him, there was the near magic in “audible ions.” He put

those audible ions to work so we could hear the wireless telegraphy otherwise so hobbled by slow unreliable printing devices. For success, de Forest turned to skilled telegraphers who had long worked by ear. Vast networks of such audible signals soon evolved.

But restless he was, so he turned to another device (the continuous wave “arc”). His goal was sending out music in the ether, to be heard by all. In 1908 that was a revolutionary act, with few antecedents but world-historical consequences. Those consequences flowed from the use of de Forest’s own Audions to provide the continuous waves to carry radio, that is, voices and music, around the city, around the region, around the nations and around the world.

De Forest first perfected his device to provide these powers in 1913: amplification and oscillation. In less than a decade, radio, heard by millions every day nearly everywhere, changed the world. Yet one 20<sup>th</sup> Century medium of entertainment and information, the “movies,” was silent. Actors could speak with their facial expressions but not their voices. Lee de Forest created the “soundtrack” giving voice (and music) to the movies. To be sure, others worked to the same effect, just as many others had perfected the radio arts. But once again, de Forest’s focus on sound carried

the day. In our day, it's all Internet and multi-media, but the roots of it all come from Lee de Forest's seedlings, the Audion, the radio transmitter and receiver, and the film soundtrack.

About the Audion, de Forest later said: *"I held in my hand the long-sought Aladdin's Lamp of our new world, 'a lamp by which one might hear instead of read'...and all but remake our world."* He had earlier written: *"The Audion is ... to the sense of sound, what the microscope is to the sense of sight."* We can hear so much now because Lee de Forest dedicated his life to helping us do so. If the real 'bottom line' is, as inventor Edwin Land suggested, in heaven, then Lee de Forest is a rich man indeed.

Thus, Lee de Forest invented the "radio tube" more than 100 years ago, making modern electronics possible and perhaps inevitable. Yet he failed in "Radio" after striving mightily, nobly or ignobly, depending on one's point of view. He turned to Hollywood in the middle of his life, about 1920. Lee de Forest then pioneered the "Talkies" by bringing sound to motion pictures and their industry.

Having brought the sound of radio – voices of entertainment and news and history, music good and bad, real and

imaginary events conveyed by the nuance of audio – into millions of homes in America and in the world, he then brought those sounds to the movies, in thousands of theaters, again for millions of Americans and the world.

He called his first radio tube the “Audion” precisely because it enable us to hear what was otherwise undetectable and invisible – radio waves – and he devoted his life to helping us hear music and people in what we now call “the media” – two of which, radio and movies with sound, he practically invented single-handedly.

Mike Adams has a most interesting story to tell.

Bart Lee

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