

Thomas Edison...

The impact of his deafness upon his inventions

by Steven C. Baldwin, Ph.D.

Edison holding the Edison Effect bulb, which was the forerunner of the vacuum tube—the basis for modern communication in wireless telegraphy, radio, and television.



Thomas Alva Edison (1847 - 1931) is often called one of the world's greatest inventors. The "Wizard of Menlo Park" officially patented 1,093 of his inventions during a 55-year span.

He worked until his death at 84, never ceasing to follow his own secret of success, which was "*imagination, ambition, and a will to work.*" Such a quote brings to mind two of his immortal adages: "*Genius is one percent inspiration and ninety-nine percent perspiration*" and "*There is no substitute for hard work.*" As an inveterate workaholic in a modern sense, Edison's deafness influenced his work habits, life style, perseverance, and most of all, his Yankee ingenuity.

Several theories have been attached to the cause of his hearing

loss. But only one stood to be most reliable. Edison's hearing loss may have been triggered by a matter of life and death.

At the age of 12, young Edison was trying to catch a departing train while carrying a bundle of newspapers. As he tried in vain to heave himself onto the train, he placed himself in grave danger until his trainman-friend pulled the newspaper boy to safety into the car.

The way he was pulled was what may have contributed to his deafness. Both of Edison's pinnae (also called external ears) were grabbed by the well-meaning trainman. Edison felt a snap in his ears as he was lifted onto the train.

According to some doctors, the "snapping" may have indicated that the ligaments were torn from

the skull. However, those same doctors felt that such an injury could not have caused Edison's deafness. They went on to theorize that the unusual injury may have aggravated an illness that Edison suffered from: scarlet fever.

Edison had to leave school earlier because of that disease, which was one of the most common causes of deafness in the 19th century. He was known to have said, "*I have not heard a bird sing since 12.*"

Although there was nothing the doctors could do about his progressive deafness, the year of 1859 was the inception of a lifetime of passionate reading. In view of the impact of deafness on his early life, Edison said, "My deafness taught me that I could enjoy any



Courtesy of Bridgestone/Firestone, Inc.

Celebrated campers -- Edison naps in the foreground while tire pioneer Harvey S. Firestone (left) and President Warren G. Harding catch up on the day's news. Harding had joined campers Edison, Firestone, and Henry Ford at their camp near Hagerstown, MD on July 23, 1921.

good literature." In fact, Edison had only three months of formal education in his lifetime. His mother, a former teacher, frequently taught him. His Dutch parents were not poor, nor rich. However, as a "handicapped" child in those days, a college education was not even considered an option. Nevertheless, as a self-taught person, it was not long before he was ahead of his mother. He set up his own laboratory and had all the concentration he needed. His deafness at 12 became a virtual turning point in his life by causing him to compensate in various ways.

"This deafness has been of great advantage to me...", Edison is recorded to have said. *"In experimenting on the telephone, I had to improve the transmitter so I could hear it. This made the telephone commercial, as the magneto telephone receiver of Bell was too weak to be used as a trans-*

mitter...," he said. Edison also credited his deafness with increasing his concentration.

On the other hand, some of his close friends have said that Edison was never really glad he became deaf. But Edison had always been consistent with his stoical acceptance of his deafness and spoke of it as an asset rather than a curse, whether in private or public.

Edison's deafness drove him to many hours of intensive reading. He especially enjoyed chemistry books and stories by his favorite author, Victor Hugo, who once wrote to a deaf man: *"What matters deafness of the ear, when the mind hears. The one true deafness, the incurable deafness, is that of the mind."* It seems only natural that, as a result of his deafness, Edison also developed a stronger sense of touching and observing.

After an early profound interest in chemistry, he moved on to telegraphy. It was a strange circumstance that led him to become a telegrapher. Similar to the experience of the heroic trainman, Edison was put in the

same position. Edison saved a child from a moving train, and the grateful father offered the hero free meals and private lessons in telegraphy. Edison then became a top-notch telegrapher and developed his skills further during the Civil War.

Unlike many operators who were constantly bothered by the roomful of noisy telegraphs, Edison could only hear and feel the instrument on the table he worked on. His inventive mind

began to develop as he not only expanded on the capability of Samuel E.B. Morse's electric telegraph (1840), but it nurtured his love for electrical experiments that eventually led to his famous carbon filament lamp in 1879 as well as other equally important inventions.

Whether Edison knew that Morse originally wanted to invent a device so he could communicate with the latter's deaf wife is a mat-

ter of conjecture. The same could be said of Alexander Graham Bell's original intent of inventing an instrument that could enhance his deaf wife's hearing and speech. And whether Edison knew that he practically improved the telegraph and the telephone, albeit the deaf wives' needs were the original reason, no one knows for sure.

Out of over 1,000 patented inventions credited to Edison and his laboratory workers in Newark, New Jersey, an interesting number of them related to acoustical appliances and visual instruments.

To name a few of his visual inventions besides the electric light, Edison invented the silent motion picture device. He started the popular peephole kinetoscope in 1894. Besides his enhancing the amplification of the telephone with a carbon transmitter receiver, Edison invented the phonograph.

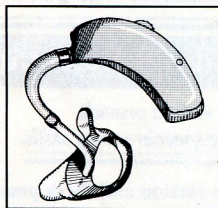
In spite of his profound deafness, he resorted to his keen sense of feeling to calibrate or monitor the purity of the sound from his original invention, the phonograph. When asked to elaborate on his acoustical expertise, Edison responded... "I hear through my teeth and through my skull." One can find photographs showing Edison pressing his ear or head against the wood of a phonograph.

If he was not pleased with his tactical testing, he would then bite gently on the wood of the phonograph so that he could monitor the vibrations. Unconsciously or not, Edison may have invented his acoustical and visual instruments as potential devices for the blind and deaf.

His scientific knowledge of sound included his interest in music. It was no mere coincidence that his favorite composer seems to be Beethoven,

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Edison...continued

another famous deafened person. Edison once said that Beethoven composed out of pure inspiration and that he had always wanted to record the Ninth Symphony with 75 people in the orchestra.

Ironically, Edison did not invent the electrical hearing aid which was done by a New Yorker in 1901. In any case, he used his deafness as a compensational means of sharpening his incredible sense of observation, analysis, and evaluation.

No candidate for a husband or a father of the year award, a great inventor like Edison was probably "married" to his laboratory. He once worked five consecutive days and nights to perfect his phonograph.

Each of his two wives (his first wife died in 1884) gave birth to three children. Both wives complained gently that Edison spent a great deal of time away from home, working endless hours in his laboratory.

Because of his deafness, he disliked social life and had very few friends outside Menlo Park.

Among those few friends were three of the most powerful names in American industry and business: Henry Ford, Harvey Firestone and Frank Burroughs. Pictures of Edison and those three famous fellow-inventors were often taken, especially with Edison reading the newspaper in silence, but with his close cronies, he enjoyed a great deal of joke-telling and collecting.

Edison was probably the most honored and awarded inventor in the world. Countless international and national medals, awards and honors were bestowed upon him; however, his own country was probably the last one to honor him.

Two years before his death from a variety of ailments, Edison was awarded the Congressional Medal of Honor. Among the inventions which contributed greatly toward his nation's technical growth was



Edison as he appeared June 16, 1888 after 72 hours of continuous work on the wax cylinder phonograph.

Clue: 7=M



Silent Partners.

They work together in a world that's silent, or nearly so. One is hearing impaired, and needs treatment for a mental health or addiction problem. The other is a therapist who is also skilled at communicating with the deaf. They are participating in the H.I.T-Line (Hearing Impaired Therapy) at St. Joseph Hospital.

It's a new program for chemically dependent or emotionally unstable adults who are hearing impaired. During inpatient and aftercare treatment, H.I.T-Line includes job readiness training and independent living counseling. Local job placement is also part of the program.

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the alkaline storage batteries that were used in World War I submarines. One of his most important posthumous awards was his enshrinement into the Hall of Fame of Great Americans in 1960.

True happiness to him was the life in his laboratory where his primary means of communication was through written instructions. Undoubtedly, verbal orders led to unnecessary misunderstandings. Consequently, all his business deals were conducted in writing. As a man of his status and fame, how did he understand fast-paced business meetings?

A classic example of his ability to adapt himself to such proceedings was the tapping in Morse Code on his wrist by a fellow telegrapher. But similar to the experience of most deaf and hearing impaired people, even with qualified interpreters, Edison would often lose track of the "cut" and "thrust" of arguments during meetings.

Shouting in Edison's ears seems to be the most common habit. So it was not unusual for his faithful secretary to roar in Edison's ear, then resort to a soft tone to reporters or visitors. Research

does not provide any evidence of Edison's using sign language or fingerspelling.

How did Edison really feel about his semi-mythical fame? In truth, he said that all civil and science presentations embarrassed him. He complained more that once that public appearances or the constant flow of visitors robbed him of his prime after World War I.

In any case, Edison's fame started with his deafness. Otherwise, Thomas Alva Edison's destiny might have taken a different twist without altering the face of civilization. ☺