



# THE HISTORY OF RADIO



“COME WITH US NOW TO THOSE THRILLING  
DAYS OF YESTERYEAR AS.....  
**RADIO RIDES AGAIN!**”



# THE HISTORY OF RADIO



Even in pre-historic times, people had a desire to communicate. Cave dwellers preserved their thoughts by writing on the walls of their caves with what we call heiroglyphics.



# THE HISTORY OF RADIO



As civilization developed, languages evolved. By the 10<sup>th</sup> Century AD, we know that Monks were keeping written records.



# THE HISTORY OF RADIO



One persistent problem was that the world was a big place, and people who migrated to new areas were not able to exchange information with people in other areas, so civilizations became isolated.



# THE HISTORY OF RADIO



We know that by the Middle Ages, boats had been invented, and explorers were venturing out on the seas. As new lands were discovered, the ability to communicate became even more desirable.





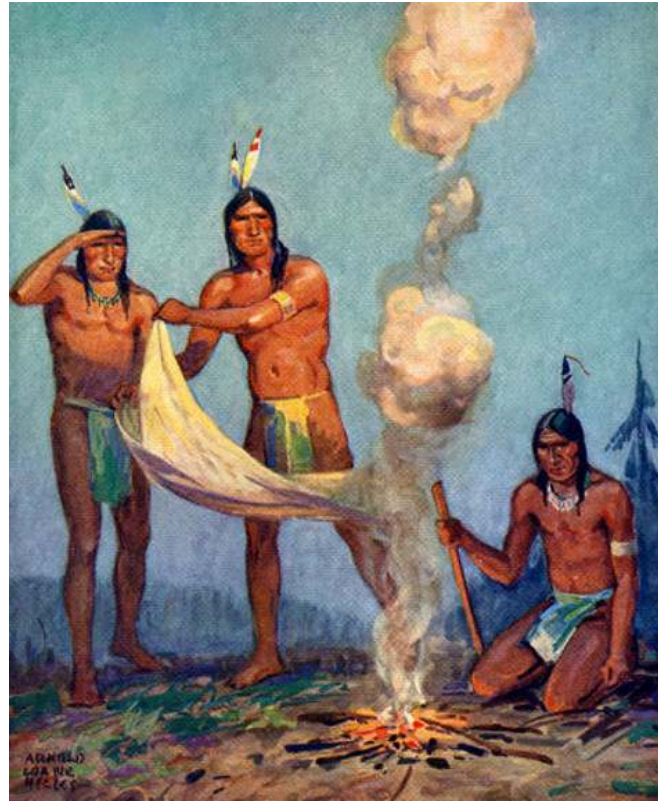
# THE HISTORY OF RADIO



In 1440, the invention of the printing press gave rise to published distribution of written material, thus establishing the ability to distribute information on a wide-spread basis.



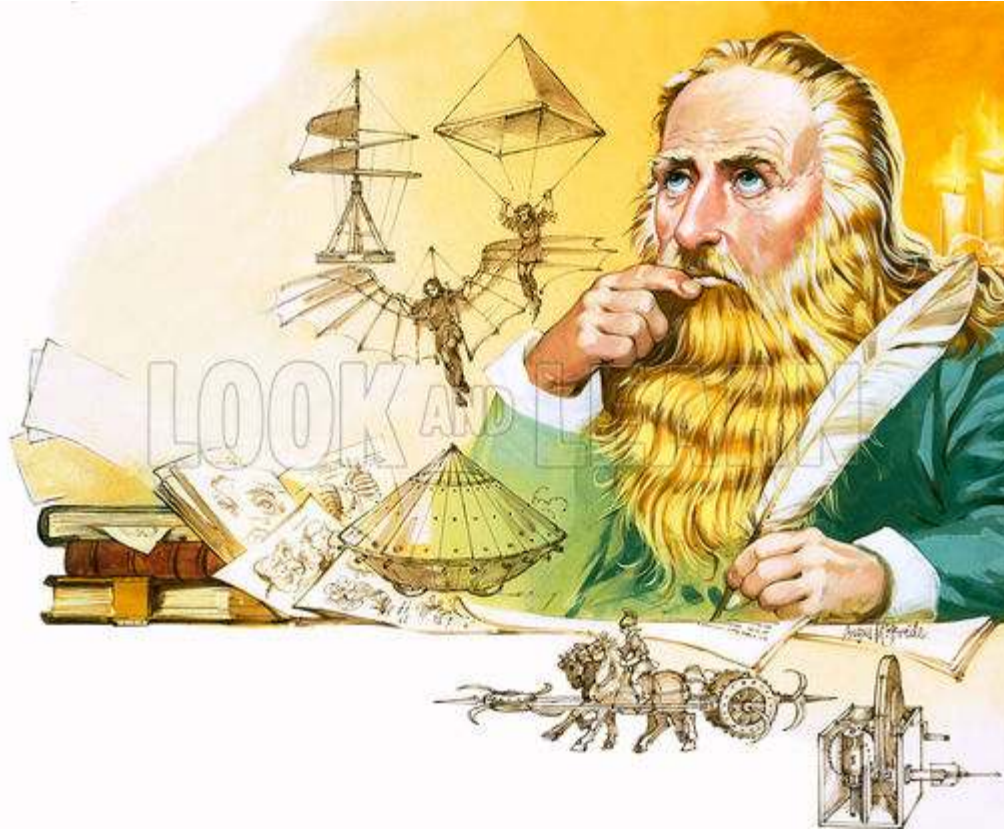
# THE HISTORY OF RADIO



When European settlers ventured to the American continents, they were introduced to a new form of “digital” long-range communications by way of smoke signals.



# THE HISTORY OF RADIO



Meanwhile, back in the “Old Country” we were emerging from the technological void of the Dark Ages. A new breed of inquisitive experimenters was awakening.





# THE HISTORY OF RADIO



In 1600, William Gilbert suggests that there is a link between magnetism and an “invisible force” that would later be identified as electricity.



# THE HISTORY OF RADIO



In the early 1800s, Michael Faraday, an English physicist, proved that there was indeed a relationship between magnetism and electricity. He carried this further to discover the existence of electro-magnetic waves.



# THE HISTORY OF RADIO



Meanwhile, as the scientists worked on their ideas, a guy by the name of Napoleon Bonaparte needed a way to communicate quickly with his troops scattered across the French landscape.



# THE HISTORY OF RADIO



The solution to Napoleon's problem came from an inventor named Claude Chappe. Chappe devised a network of semaphore towers on which moving arms could signify letters and numbers. Relay towers were built all across France. The system was slow, however, and it did not work in darkness or fog.





# THE HISTORY OF RADIO



By the mid-1800s, Pavel Schilling had devised a system of electrical message transmission using electro-chemical processes to send coded messages over electrical wires. The system was cumbersome, and it required a network of multiple wires to send all of the separate characters.



# THE HISTORY OF RADIO



Schilling's system utilized chemical reactions and a process known as electrolysis, to liberate bubbles that would channel to a bank of nozzles that represented alpha-numeric characters.



# THE HISTORY OF RADIO



In this same era, the invention of the steam engine opened the way for rail travel. The railroads needed a means to signal moving trains. The first development was a system of visual signals somewhat patterned after Chappe's semaphores.



# THE HISTORY OF RADIO



Visual signaling with semaphores in daylight and oil lanterns at night, was effective, but it did not address the problem of communicating between railway stations. This need opened the door to one of the first major breakthroughs in long distance communications.





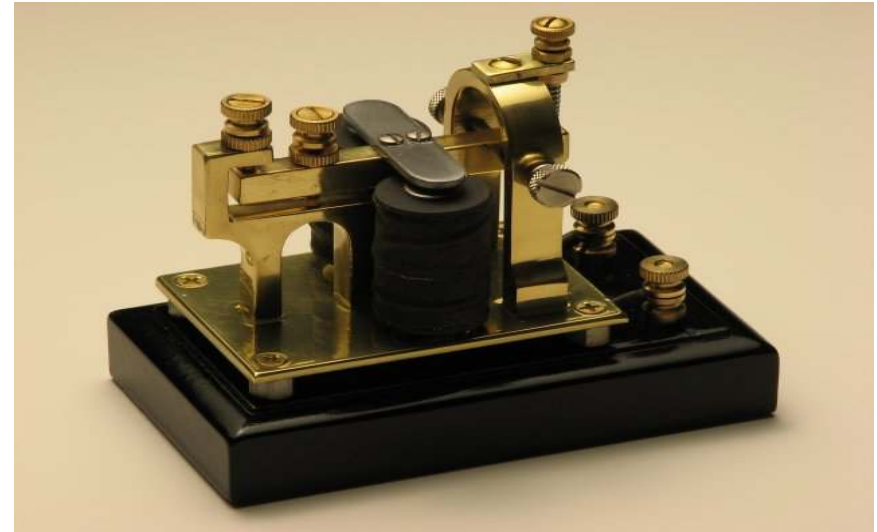
# THE HISTORY OF RADIO



Samuel F.B. Morse was an artist and a statesman. He never defined himself as a scientist. Morse did, however, have an inquisitive mind, which led him to experiments with electromagnetic devices and their practical uses for signaling.



# THE HISTORY OF RADIO



Morse applied electro-magnetic principles to create devices which could be used to transmit bursts of electricity over long distances. He also devised a simple code that could be sent and received by a human, thus eliminating the need for electrical “translation” such as was required with the earlier British system.



# THE HISTORY OF RADIO



The railroads immediately saw the merit of Morse's telegraph. Within two years from its introduction, hundreds of miles of telegraph wires were strung along the road beds of major railroads. At the same time, a network of commercial telegraph offices were founded as Western Union.



# THE HISTORY OF RADIO



Great discoveries are known to inspire further development. The over-night success of the Morse telegraph brought other inventors to begin thinking about the possibility of transmitting messages without wires. It was Heinrich Hertz who established that electrical waves could be made to leave their metal conductors and travel through space





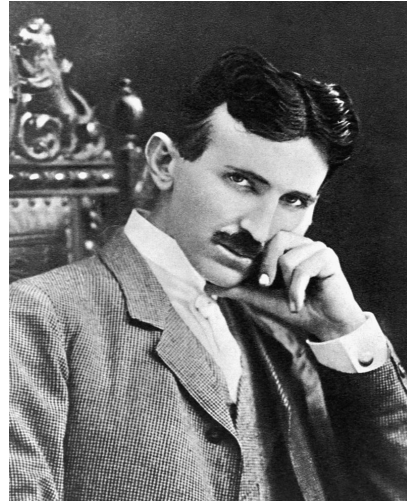
# THE HISTORY OF RADIO



As Hertz's theories were being tested by scientists around the world, two inventors were working, from different directions and with different missions in mind, to develop a means for transmitting electrical energy through space without wires.



# THE HISTORY OF RADIO



The first was Nicola Tesla, a physicist from Croatia. Tesla envisioned being able to apply the new discovery of electricity, to power homes and businesses, without the need for wires. His ideas caught the attention of entrepreneur George Westinghouse who was looking for new technology to market through his Pittsburgh based company.



# THE HISTORY OF RADIO



With financing by banker J.P. Morgan, Tesla set up a laboratory for testing his theories. Known as Wardenclyffe Tower, Tesla's experiment proved to be economically unfeasible. On the other hand, his research at Wardenclyffe led to the eventual developments of the Laser and medical radiation.



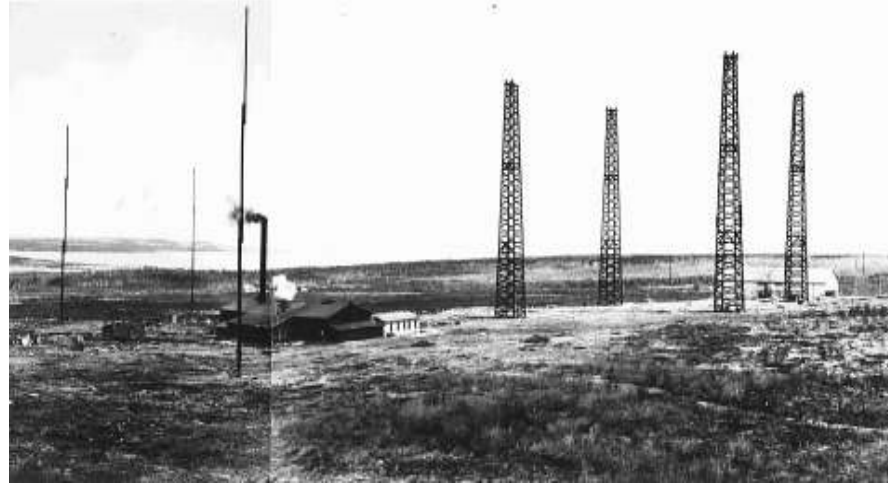
# THE HISTORY OF RADIO



In the same era, an Italian scientist was searching for a way to wirelessly transmit information for the maritime industry. Guglielmo Marconi believed that by applying the discoveries of Heinrich Hertz, that he could possibly send bursts of energy between land stations and ships at sea.



# THE HISTORY OF RADIO

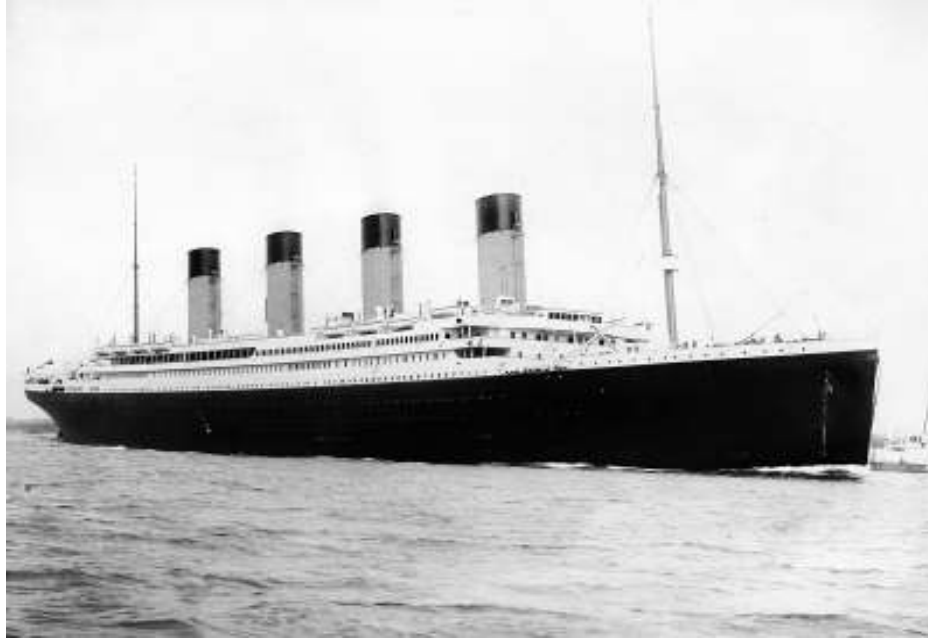


In 1896, at the culmination of two years of work, Marconi was able to successfully transmit a “radio” signal across Bristol Channel and Salisbury Plain, thus opening the door to somewhat practical wireless communications. In 1897, he formed the Marconi Wireless Telegraph Company.





# THE HISTORY OF RADIO



While Marconi was able to sustain his company in it's infancy, the world did not realize the real potential until the early morning hours of April 15<sup>th</sup>, 1912. Minutes after the RMS Titanic struck an iceberg in the North Atlantic, the on-board Marconi radio transmitter was used to send the first electrical S.O.S. signal from a ship-at-sea.



# THE HISTORY OF RADIO



On that same night, at the Marconi receiving station high atop the Wanamaker Department Store in Philadelphia, a sixteen-year-old Russian-Jewish immigrant named David Sarnoff, himself destined to become a major player in the history of radio, began the task of documenting survivors of what would become the worst disaster in maritime history.



# THE HISTORY OF RADIO

"I have in mind a plan of development which would make radio a 'household utility' in the same sense as a piano or phonograph"  
*(Excerpt from David Sarnoff's "Music Box Memo")*

We must keep in mind that radio, at this point, was limited to Morse code transmissions. While there is some skepticism about this, Sarnoff is believed to have produced a memorandum to his bosses at Marconi Company, in which he envisioned a “music box” like device that could be installed in every home, thereby bringing spoken words and music directly to the American public.



# THE HISTORY OF RADIO

The limitation preventing realization of Sarnoff's idea, was the ability to “modulate” radio waves. Marconi and others had become proficient in producing signals that could span the Atlantic, however, there was no practical way to incorporate voice or music onto the electromagnetic waves that formed the radio signal. That brings us to the story of a man named Reginald Fessenden.



# THE HISTORY OF RADIO



Using spark technology, combined with variable speed generators and spark gaps, Reginald Fessenden was able to inject, although somewhat crudely, voice and music onto a spark generated radio signal. While his success in broadcasting was limited to a small town on the New England coast, Fessenden did manage to make what is believed to be the first “entertainment” radio broadcast.





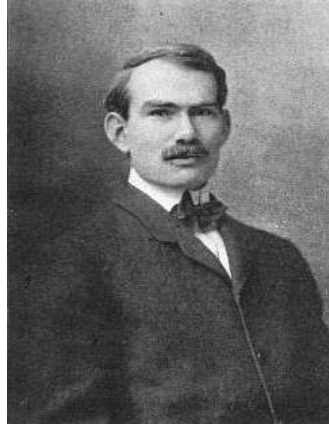
# THE HISTORY OF RADIO



Fessenden's work, however, was soon overshadowed by a monumental development at the hand of physicist Ambrose Fleming. Fleming found that by inserting an additional electrode into an Edison light bulb, that he could induce a flow of electric current through the new element. Fundamentally, Fleming had discovered the vacuum tube.



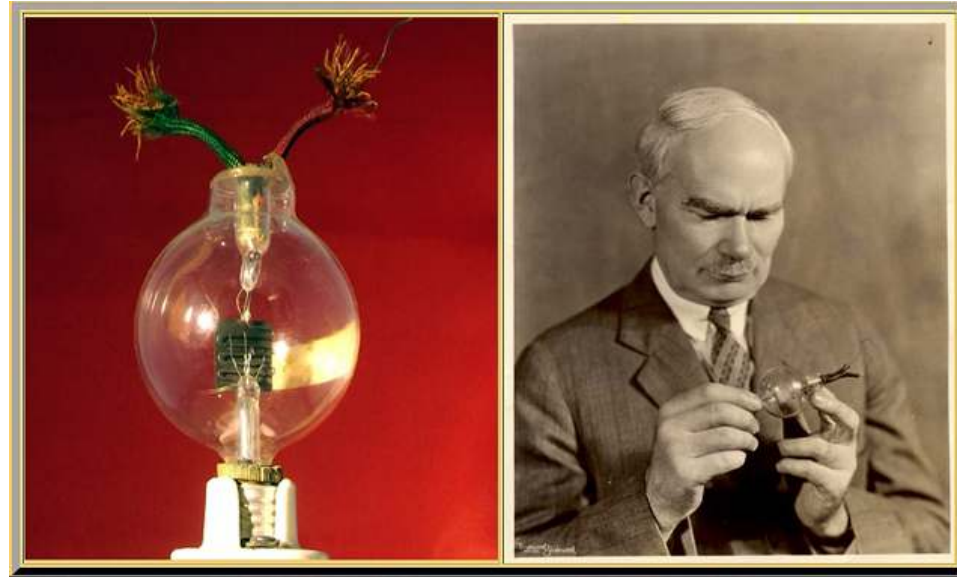
# THE HISTORY OF RADIO



The Fleming Valve was what we term a “DIODE”. It was capable of rectifying current, however, the current could not be easily controlled. Another physicist of the day, Dr. Lee DeForest, took this to the next level with his research. DeForest inserted a third electrode into Fleming's valve, and discovered that he could control the large current flow through applying a small current to the third element known as the “GRID”.



# THE HISTORY OF RADIO



DeForest called his invention the “Audion.” It was the first “TRIODE” or three-element vacuum tube. While DeForest was a respected scientist in his day, his claim to fame was soon to be challenged. Later court testimony revealed that DeForest did not fully understand the operation of his invention.



# THE HISTORY OF RADIO



While Marconi, Fessenden and DeForest all anointed themselves with title of “the Father of Radio,” the man who actually gave us Radio as we know it, was an electrical engineer named Edwin Armstrong. Armstrong was the first to take DeForest's Audion and make it do something useful.



# THE HISTORY OF RADIO

Prior to Armstrong's work, radio reception was by a process utilizing a Galena crystal to decode the signal. Transmission was limited to spark generated radio waves. Armstrong developed the circuits that enabled the Audion to act as not only a generator of radio waves, but also as a receiver, and a means to modulate the signals with voice and music. His development of the Regenerative circuit, and later the SuperHetrodyne receiver, enabled radio to become a household utility at a price that most American households could afford.



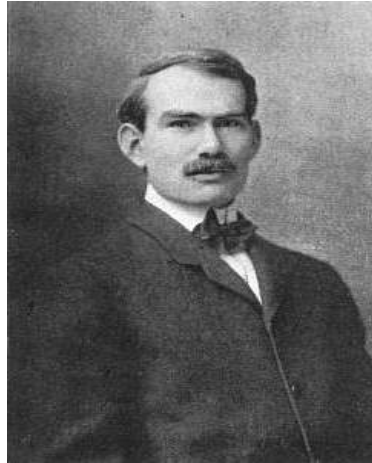


# THE HISTORY OF RADIO

The three “Moguls Of Radio”



Armstrong



DeForest

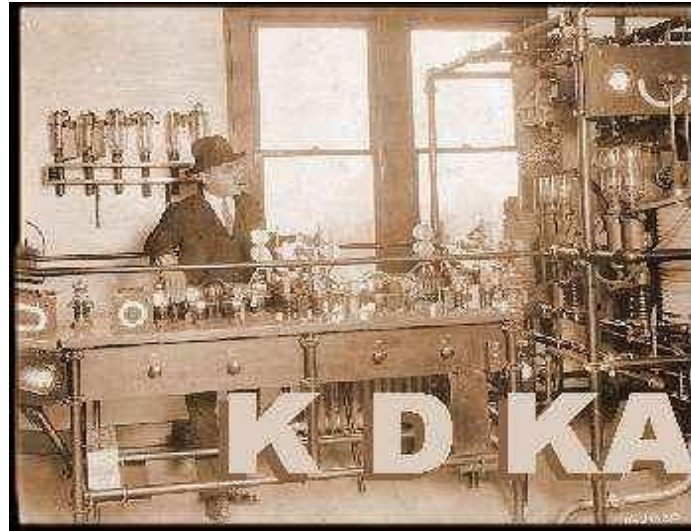


Sarnoff

In his book “Empire of the Air,” author Tom Lewis tells the story of the legal and personal wars that were waged between these three men. While DeForest and Armstrong battled for recognition of their discoveries, Sarnoff used the power of his Radio Corporation Of America to grab the wealth that came from those inventions.



# THE HISTORY OF RADIO



Using technology pioneered by Armstrong, the Westinghouse Corporation in Pittsburgh, guided by the technical expertise of Dr. Frank Conrad, began construction of the nation's first commercial radio station that would become known as KDKA. The station's first broadcast was the Harding-Cox presidential election returns on November 2nd, 1920.



# THE HISTORY OF RADIO



In anticipation of the event, Westinghouse began the manufacture and marketing of what is believed to be the first commercially produced vacuum tube radio receiving apparatus made in America. An example of an original Model RADA, from the Museum Of Yesterday collection, is shown above



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Once the nation observed the benefits that Radio could bring to the home audience, manufacture and sales of radios took off beyond all expectations. By 1925, brands like Atwater-Kent, Philco, Crosley and Radiola became household names. Through most of the 1920s, electricity in the home was undependable, if available at all, so most radios made prior to 1929 required lead-acid storage batteries for power.





# THE HISTORY OF RADIO



*An example of a 1920s lead-acid radio storage battery assembly*

In addition to sales for the new industry of home radio, opportunities materialized for radio repair shops, many of which grew out of former electrical wiring and appliance repair businesses. Battery contract servicing also became a profitable business since most customers preferred not to have to service dangerous lead-acid batteries.





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*Just as the “Great Depression” was about to hit, the first radios that were designed to operate on commercial electrical power, hit the market. This 1929 Philco “High-boy” was one of the first such sets available.*

By the year 1929, home radios had taken on the character of fine furniture. The family radio had now become the entertainment center of many homes. At the same time, commercially produced electricity had become relatively dependable, and the major manufactures began producing radios designed to run on commercial electric power. One of the first companies to produce “plug-in” radios was Philco, a division of the Philadelphia Storage Battery Company, and later Ford Motor Company.



# THE HISTORY OF RADIO



The year was now 1930. The Depression had taken hold, and many Americans were without jobs. Millions had lost their fortunes in the crash of the stock market. Soup lines, poverty camps, and desperation were the order of the day. Americans, who were fortunate enough to still have their homes, and who had previously enjoyed such things as expensive motion picture theaters, supper clubs, and other places of entertainment, were now faced with spending their leisure hours at home with their families. In the preceding years, radios had been considered a luxury, but now, the time was right for an inexpensive home entertainment device to keep Americans in touch with sanity.



# THE HISTORY OF RADIO



It was at this juncture that the work of Edwin Armstrong, in developing the simple and easily manufactured Super-Hetrodyne radio, began to pay off for the makers of home radios. America needed an inexpensive radio set that required little or no maintenance, and which could be purchased by the average financially depressed household. The answer was what has become known as the “Cathedral” tabletop radio. With a chassis able to fit into a small cabinet, millions of these sets were being produced and sold between 1930 and 1936.



# THE HISTORY OF RADIO



Now that we have looked at the events and the technological advances that have taken us to the era when Radio was becoming a fixture in almost every American home, it is time to examine the cultural and sociological impact that radio was having on the nation.

When America was in her formative years, many settlers came from other lands and cultures. Because of the inefficiency of transportation at the time, colonies of people settled in various parts of the country, many never having experienced other cultures from different backgrounds. For example, the German coal miners who settled in West Virginia and Pennsylvania were communities in themselves, and most of their people had probably not experienced the culture of those who settled New York City. Likewise, prospectors in California or Oregon, were a distant culture from the Italian, Jewish and Irish settlers who had recently established their own close knit communities in the tenements of New York.





# THE HISTORY OF RADIO



Just as the railroads can be credited with building America, Radio can be credited with building what we know as the “American culture.” As people from all walks of life, and all areas of the country, began to listen to the same radio programs, thanks to network radio, distant cultures began to melt into a common alloy that is the “American way of life.”

New words and expressions spread. Performers and characters on the radio became like friends or neighbors to their listeners. New ideas and moral concepts struck an equilibrium in most areas. Radio had become a “party line” to unite neighbors who may have been separated by thousands of miles.





# THE HISTORY OF RADIO



Returning to the early 1930s, life in America had become difficult for most of the nation. With no foreseeable relief in sight, President Franklin Roosevelt saw an opportunity to use the new medium of Radio as a means for speaking directly to American families in their own living rooms. As plans were made to enact government programs to relieve the suffering and poverty, Roosevelt took to the radio in a series of what he called “Fireside Chats” that were intended to restore hope for the multitudes. The “Fireside Chats” continued for over ten years, well into World War II. Although other presidents had used radio as a means to publicize special events, Roosevelt was the president who first used radio to address the American people on an almost personal basis.



# THE HISTORY OF RADIO



By the later 1930s, it had become evident that Radio was a major influence in the thinking of most people. The world had become a place of unrest, particularly in Europe, as Hitler rose to power and Germany was again becoming a threat to peace. As it became more evident that another war was on the horizon, the network news services began to place correspondents in England and Europe. Americans' daily radio uptake now included news commentators reporting on world events both in network studios, as well as from the streets of Great Britain, France and other distant countries. In this early evolution, we saw the careers of news greats such as Edward R. Murrow, H.V. Kaltenborn, Walter Winchell, Gabriel Heatter, and other future journalism giants begin to form.



# THE HISTORY OF RADIO



But even before Pearl Harbor and the entry of the United States into World War II, there was a “war” that caught news weary Americans off guard.

New techniques were evolving and being used daily in the broadcast journalism. Technology had made live remote broadcasts possible. News reporters were now reporting from the scenes of events, thanks to mobile broadcasting trucks and equipment. Even President Roosevelt's Fireside Chats drew us to the radio, and most people now believed everything they heard on radio news broadcasts as being the absolute truth. One person realized how dangerous this was in a world filled with propoganda and rumors of war.



# THE HISTORY OF RADIO



In 1938, the regulation of Radio's content was left mostly to the discretion of the networks. In a demonstration of the power of Radio, actor Carl Van Vechten, better known by his stage name Orson Wells, opened his Mercury Theater Of The Air program on Halloween Eve of 1938 with an announcement that the program which followed was a play, strictly fiction. Wells proceeded to present author H.G. Wells' "War Of The Worlds" in a CBS Radio production that included simulated remote broadcasts, interviews with fictitious "scientific experts," and even introduced a segment that resembled the voice of Franklin D. Roosevelt delivering what could have been easily mistaken for a "Fireside Chat" broadcast. Despite numerous disclaimers that listeners were listening to a play, much of the United States was thrown into panic as people were fooled into thinking that an army of Martians had invaded the Earth.





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*In a post production news conference, Wells assures reporters that no one at CBS imagined that the show would be taken seriously.*

Wells was barely through the first half of the program when switchboards at CBS and at police, fire and military headquarters across the country lit up with thousands of calls. People were fleeing their homes, there were reports of suicides, and chaos was overtaking the streets of America. Wells continued to stress that the program was a fictional play, however, Americans were already convinced that the world was coming to an end because they heard it on the Radio.

Within hours of the program signing off, a Congressional investigation of was begun. With war in Europe almost assured, America had to do something quickly to insure that it's broadcasters adhered to strict standards of conduct, because Radio had proven to be the greatest vehicle yet known for the spread of propoganda and civil chaos.





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As an result of the government's intervention in the broadcast industry's operations, a national code was developed by the National Association Of Broadcasters. With oversight from the Federal Radio Conference, forerunner to the F.C.C., broadcasters became subject to strict standards of programming. As wartime propaganda outlets began spewing their lies with the likes of Lord Haw Haw, Tokyo Rose, and other enemy operatives, the broadcasting industry strived to maintain clear and accurate reporting standards so that Americans could be advised of exactly where the country stood in the war effort.



# THE HISTORY OF RADIO



*A 1942 model Westinghouse radio which was one of the last sets produced around the time of the Pearl Harbor attack and America's entry into the war.*

During the war, all manufacturing of civilian radios and appliances was stopped so that factories could concentrate on supplying the war effort. The 1942 model run of radios had just been introduced in the fall of 1941. When the bombing of Pearl Harbor brought us into the war, radio sets which were manufactured in the fall of 1941, soon disappeared from dealers' show rooms. This has resulted in an extremely high value placed on most of the antique 1942 model sets that may still exist.



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One of the most outstanding things regarding Radio during the War Years, is that it became a lifeline both to the men and women on the war front, and to their families back home. Many shows took on war themes. Drama productions began featuring war related stories. Characters in daily soap operas reflected real life as cast members and characters in the play went to war. Listeners with family members in the military readily identified with characters in shows like “One Man's Family,” which was an on-going 40 year running soap opera featuring the day-to-day lives of the fictitious Barbour family.

As evidence of America's ties to their favorite radio shows, Michael Rafetto, the producer and also an actor in the “One Man's Family” series, reported in an interview that NBC had hired staff whose job it was just to answer the thousands of letters sent to members of the fictional Barbour family as their “bewildering offspring” went off to serve their country.





# THE HISTORY OF RADIO



In addition to Radio keeping the folks here at home informed and entertained, a new broadcast service called the Armed Forces Radio Service was formed to broadcast information from home to military personnel stationed on the war front. This was before the days of satellites, and having this touch of contact with home gave many service men and women the stability to endure the horrors of war that they were witnessing.

One thing missing, however, was a means for GI's to listen to their favorite programs from home in real time. Short wave broadcasts could span the oceans at certain times, so this medium was relied on for reception of live programs from the USA. What was needed however was a durable and light weight radio that soldiers could carry along with their supplies and weapons. That issue was solved by a man named William J. Halligan.



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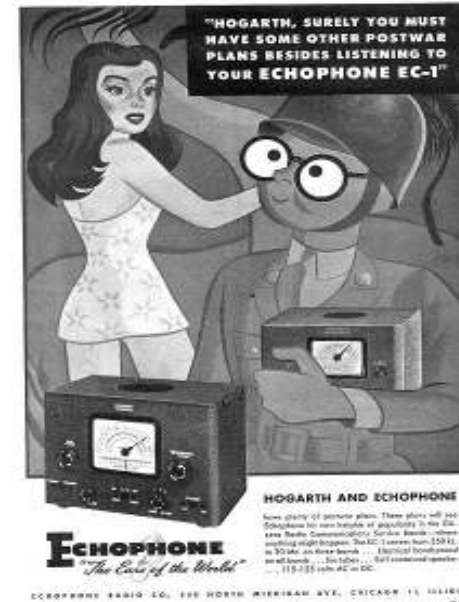
Halligan (seated) was the founder of the world famous Hallicrafters Radio Company, maker of high end ham and commercial radio receivers and transmitters since the company was formed in the mid 1930s.





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Halligan was a former salesman for McMurdo, who started his own company after McMurdo fell on hard times during the early Depression. The Hallicrafters Company, known for its dedication to building high quality communications radios, was heavily involved in government military contracts once the United States entered the war. Halligan had a brilliant idea. Since he was prevented by the War Department from making radios for civilian use, he set up a plan where a GI's family or friends could purchase an inexpensive radio, and Hallicrafters would deliver it to the intended service person overseas, which was allowed. The Hallicrafters' Echophone EC-1 was that radio, and it became known as the GI's Radio. To advertise this offering, Halligan bought the rights to a Sunday newspaper cartoon character called Hogarth. In the cartoon, Hogarth had been drafted, so he soon became the spokesperson for the Hallicrafters' Echophone EC-1, the GI's Radio.



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### Echophone Model EC-1

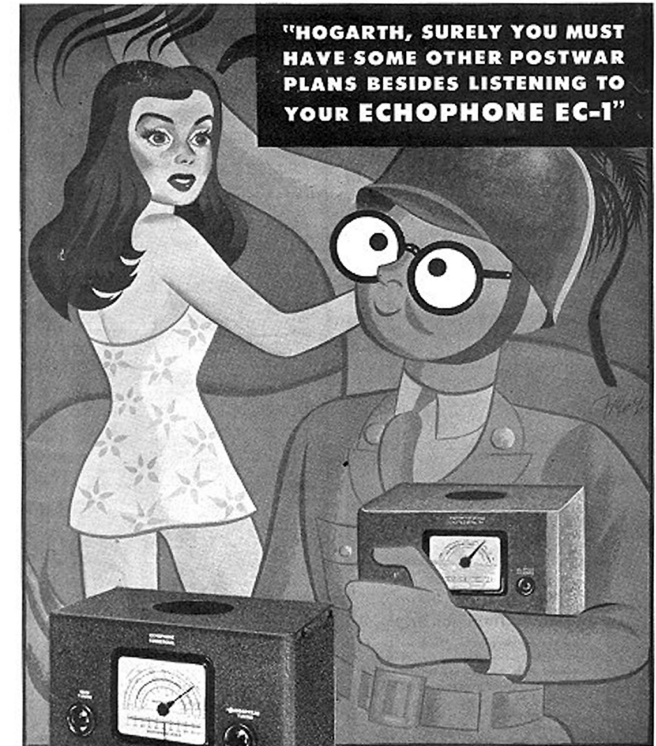
Illustrated is compact communications receiver with every necessary feature for good reception. Covers from 550 kc. to 30 mc. on three bands. Electrical bandspread on all bands. Beat frequency oscillator. Six tubes. Self-contained speaker. Operates on 115-125 volts AC or DC.

ECHOPHONE RADIO CO., 540 N. MICHIGAN AVE., CHICAGO 11, ILL.



### Echophone Model EC-1

6 tubes, 3 bands. Tunes from 550 kc. to 30 mc. Beat frequency oscillator. Bandspeed logging scale. Self-contained speaker. Electrical bandspread on all bands. AC/DC. 115-125 volts. ECHOPHONE RADIO CO., 201 EAST 26TH ST., CHICAGO, ILLINOIS



### HOGARTH AND ECHOPHONE

There are plenty of postwar plans. These plans will see Echophone hit new heights of popularity in the Citizens Radio Communications Service bands—where anything might happen. The EC-1 covers from 550 kc. to 30 Mc. on three bands... Electrical bandspread on all bands... Six tubes... Self-contained speaker... 115-125 volts AC or DC.

**ECHOPHONE**  
"The Ear of the World"

ECHOPHONE RADIO CO., 540 NORTH MICHIGAN AVE., CHICAGO 11, ILLINOIS

Here are some examples of Hogarth Echophone ads that indicated the progression of the War.





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*Left to right:  
Iva Toguri  
(Tokyo Rose),*

*William Joyce  
(Lord Haw-Haw),*

*and Mildred Gillars  
(Axis Sally).*

While the power of radio was beneficial to the morale of our soldiers, the enemy did not take long to realize that it could be used to their advantage by demoralizing military personnel and civilians alike. Native broadcasters were recruited to produce propaganda programs to undermine the war effort. Names such as Mildred Gillars, who broadcast under the name of “Axis Sally;” was soon joined by William Joyce who was known as “Lord Haw-Haw. On the Japanese side, “Tokyo Rose” (Iva Toguri who was a native of Los Angeles) did her best to undermine our soldiers and airmen in the Pacific arena.

Toguri's prominence gained her the reputation as one of the war's most dangerous propagandists. She was arrested and convicted of treason and sentenced to 20 years in prison after the Japanese surrender.



# THE HISTORY OF RADIO



While there is no argument that World War II resulted in drastic changes in the American culture, there was one major development from the war years that had a profound impact on the future of communications and would eventually deal the death blow to Radio.

Prior to the War, experiments were being conducted on a system for being able to transmit facsimile pictures to specially designed radios, so that pictures could be displayed along with sound. The early systems were mechanical, and required motors, spinning wheels and they would have been expensive to place into mass production. When the military had a need for a similar system to display images from M.I.T's newly invented RADAR, researchers went to work to develop a totally electronic method for displaying images.



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The researcher who came up with the solution was a physicist named Philo T. Farnsworth. While Farnsworth's name is buried in history, it was he who gave us practical television receivers and cameras. Using electro-magnetic deflection of electron beams inside of a vacuum tube, Farnsworth's discovery allowed actual moving pictures to be displayed on the face of the specially designed tubes. The Cathode Ray Tube as it was called, revolutionized Radar during the war, but its greater implication awaited us at the end of the war when the first affordable home television receivers were introduced.





# THE HISTORY OF RADIO



Within a year of the ending of the war, several manufacturers of electronics, who had now retooled their plants to again produce civilian radios and appliances, introduced the miracle of Television to America. Hallicrafters, a pioneer in radio developments for the war effort, was one of the first to market a 7" television receiver based on Farnsworth's radar display cathode ray tube. The 1946 model year set shown above, which resides in the Museum of Yesterday, is a prime example of the first sets released. In major cities such as New Orleans, New York and even Richmond, there was a massive effort to build television stations and place them on the air even though programming was still in the experimental stages.



# THE HISTORY OF RADIO



*One of the first producers to realize the potential of television was Jack Webb. His popular series Dragnet, which began in 1951, was written and produced for broadcast over both radio and television. The meticulous narration in the early shows was done so that mental images of the story set could be generated in the minds of radio listeners. While it appeared almost boring to the TV viewer, it was a way to present to both platforms.*

*Other shows took up this method including Groucho Marx's "You Bet Your Life", and some shows actually produced dual versions such as Gene Hersholt's Dr. Christian show and the popular "Gunsmoke" series which starred William Conrad on radio and James Arness on television.*



Astute broadcasters and network executives quickly realized that television was a threat to the future of radio. Given the yearly increase in sales of television receivers, and the continuing development of better sets with larger screens, the wise knew that it was only a matter of time before competition from television would drive network radio programming out of the market.

Writers and producers of radio programs scrambled to come up with better productions, scripts, and sound effects. Many producers turned out programs that could be enjoyed both on television and radio. At the same time, the popularity of the new FM method of broadcasting had gotten the attention of many music lovers since FM provided a better platform for broadcasting high fidelity sound.





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EDWIN H. ARMSTRONG  
1890 - 1954

Earlier, we spoke of Edwin Howard Armstrong and his contributions to early radio. As early as 1933, Armstrong had already made great strides in the improvement of radio receivers. Shortly thereafter, Armstrong discovered a totally new method of broadcasting that was superior to typical AM transmission. Frequency Modulation or FM allowed for greater audio ranges, which made it perfect for the reception of high fidelity sound. It also was almost totally immune to static and noise, so even a distant station would be received as a totally clean signal, free of static.

The improvements to electronics that resulted from the War, enabled the reliable use of the radio spectrum above the normal short wave bands. This uncharted radio spectrum gave Armstrong the needed bandwidth to transmit his high fidelity FM signals.



# THE HISTORY OF RADIO

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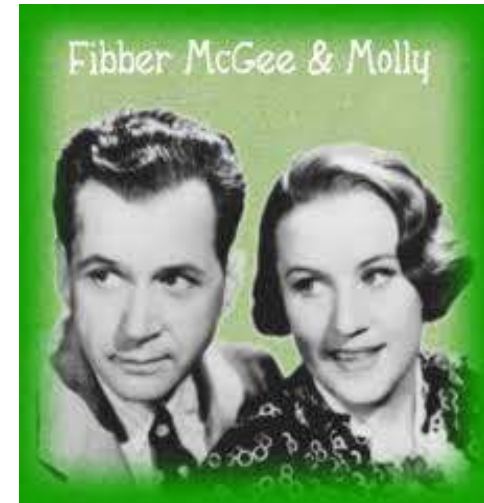


Armstrong convinced the Federal Communications Commission to allocate the 50 Megahertz band for the exclusive use of newly developing FM broadcasts. He and his partners built an elaborate tower and broadcast plant in Alpine, New Jersey at a cost of \$40 million dollars. When it became evident that FM was superior to AM, and would probably be the future of entertainment radio, David Sarnoff, using his vast political connections and the lobbying power of RCA, set out to destroy Armstrong. With the New Jersey station broadcasting quality programming, and the burgeoning sales of 50 Megahertz FM radios on the rise, Sarnoff convinced his cronies at the FCC to reallocate the FM frequencies to the present 88-108 Megahertz band, which immediately rendered the Armstrong system obsolete and put Armstrong's company out of business. Totally broke, both emotionally and economically, from decades of fighting Sarnoff in never ending lawsuits, Armstrong opened an eighth floor window of his building, and walked out, falling to his death.





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Although FM and Television were new players in the history of Radio, AM radio, and the various networks ABC, NBC, Mutual-Don Lee, and CBS had not yet given up the fight to dominate broadcasting. AM radio continued to compete by hiring the best writers, and employing popular motion picture actors as stars of radio productions. In this era, we saw shows such as “The Voice Of Firestone,” “Gunsmoke,” “Dragnet,” “The Philip Morris Playhouse,” “The Telephone Hour,” “Life With Luigi,” and a multitude of well produced dramatic and comedy shows. Other standards continued to draw ratings, and shows such as “The Maxwell House Showboat,” “The Chase And Sanborn Hour,” “The Bing Crosby and Rosemary Clooney program” and of course “Fibber McGee and Molly,” sustained themselves through the 1950s. During this era there was also a proliferation of “soap operas” with shows like “The Guiding Light”, “One Man's Family”, “Ma Perkins” and “Young 'Widder' Brown” to name just a few.





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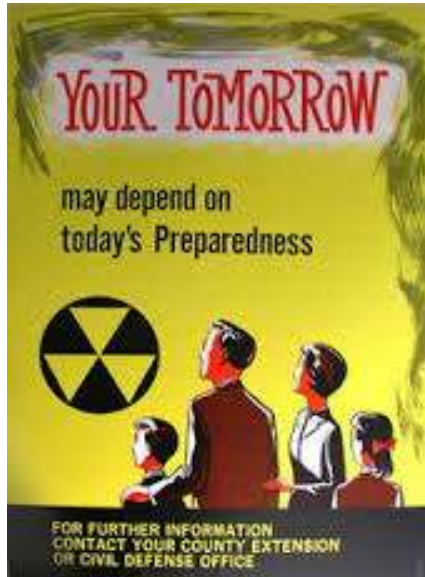
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By the late 1940s, another phenomenon had hit the airways. Prior to the end of the War, network radio, and most local broadcasters as well, prohibited African-American actors and announcers from performing on radio. Even Amos N' Andy, had white actors performing up until the time in the 1950s when the show went to television. In 1945, a program was spun off from the popular Fibber McGee and Molly Show. It featured a character who was the McGee's housekeeper, Beulah. The new show was called "The Marlin Hurt and Beulah Show," with Hurt being the White actor who voiced Beulah's character. Later that year, Hurt died of a heart attack, and a substitute was brought in. The response was negative, so CBS tried a revolutionary tactic to save the show. Hattie McDaniel, a popular actor who had attained fame for her supporting role in "Gone With The Wind," was given the role of Beulah, making her the first African-American to attain star billing in a network radio show.



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In the early 1950s, the “Cold War” and the awareness that the Soviet Union now had possession of the Atomic Bomb, caused great concern for most citizens. In an era of fallout shelters, and duck-and-cover drills in schools, the newly created United States Civil Defense Agency undertook a project to protect us from enemy attacks that used broadcast radio signals to home in on targeted cities. The system, which instructed all participating radio stations and listeners to switch to 640 or 1240 Kilocycles on the radio dial, then performed a “round robin” technique where each station would transmit for a few seconds. The signals kept switching locations as the round robin moved the signal from one transmitter to the next, which theoretically would confuse enemy bomber navigation. Of course, the system was made obsolete when internally guided ICBM missiles replaced aircraft as a means for delivery of nuclear weaponry.



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But by 1955, the proverbial handwriting was on the wall. Producers and sponsors were seeing their audiences moving to television, and many of the old popular radio shows were dropping like flies. NBC and ABC had cut their menu of shows beginning as early as 1955. CBS continued with a smaller lineup that included some of the more popular soaps, along with "Suspense", "Yours Truly Johnny Dollar", and even "Amos N' Andy" in an abbreviated version. But by Thanksgiving week of 1960, it was all over. In a dramatic tear-jerking fifteen minutes, Ma Perkins and her lumberyard crew bid listeners farewell after 40 years on the air. In their last show, "The Barbours, one of the last NBC holdouts in "One Man's Family," handed the family's future over to their proverbial "younger generation," and Freeman Gosden and Charles Correll, as Amos N' Andy, ended their 50 year careers on radio, never to return. It was a sad time for seasoned listeners of network radio, but the networks reminded us that bigger and better things awaited us through Television.



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The small segment of remaining avid radio listeners were unhappy with the idea that they had been left out in the cold by the industry. In a move to appease, and to fill in weekend voids in news programs, NBC instituted a new concept called “MONITOR.” Monitor originated from the Rockefeller Center studios of NBC, and featured news, moderators from radio and TV such as Dave Garroway, along with periodic appearances by old radio favorites such as “Bob and Ray,” popular bands and other personalities from the radio era. This went on into the early 1960s, but it was short lived and not self sustaining since most listeners were involved in other weekend activities involving television or leisure activities that did not involve broadcast media.





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Television had won the ratings war, and most former listeners of radio continued to move toward television, or toward the popular disk jockey programs of the 60s which offered “top 40” formats on local radio stations. This platform worked well with transistorized portable radios and car radios which had become standard equipment on most new cars.

As for network broadcasting, the great era of network radio shows was over, and the “Golden Age Of Radio” quietly faded into history.

Was it a better time? Do we have the same quality entertainment today? It's anybody's guess.



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# THE END

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