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History of Radio

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A Brief History of Radio

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A Brief History of Radio.

The year was 1920- over 85 years ago. He is working on his radio receiver - and like you, is one of those pioneers exploring and defining what the new media will become.

From its early theory, to a hobby for the 'techies' of the early 1900's - radio became our first mass medium - able to disseminate information instantly from one to many. It has been a technology that has influenced our growth as a nation, and planet. Radio changed the world!

The Internet - with all of its capabilities - is still in the defining years of its life - similar to the twenties of radio's growth. Its ultimate possibilities will only be realized when, like radio, individuals of vision drive the process

Pre-1900 - The Theory and Foundation

1831

Michael Faraday discovers electromagnetic induction - the action of induced electrical current in a wire crossing lines of magnetic force.

Faraday

Samuel F.B. Morse sends the first message of any distance by Telegraph - about 40 miles. The message -"What hath God wrought!" The wired Telegraph and Morse Code are the first long distance, instant communication system the world has known.

Morse **Morse**

1870

1876

Alexander G. Bell demonstrates the telephone.

1877

Thomas A. Edison records sound on cylinders.

The first recording - "Mary had a little lamb." 134K Wav

1878

Edison begins work on the electric light.

1879

The Berlin Academy of Sciences offers a prize to the scientist who can show experimentally that a changing electric field generates a transient electric field, and vice-versa.
The challenge is taken up by, among others...Heinrich Hertz.

Early Experiments

1887

Heinrich Hertz proves Maxwell's theory that electricity can travel through space in waves. He went on to show that these waves shared the same physical properties as light.

Hertz

1891

Edison receives a patent for wireless telegraphy.

Edison

1894

Guglielmo Marconi reads about Heinrich Hertz's discovery of electro-magnetic waves.

1895

Marconi succeeds in signaling across the family estate by radio - a distance of about 1.2 miles

1899

Marconi installs wireless equipment on three British battleships.

Marconi *in one of his*

earlycommercial stations

1901

Marconi receives the letter "S" by Morse code (35 K Wav of a spark transmitter) in St. Johns, Newfoundland. **John A. Fleming** was at the transmitter in England.

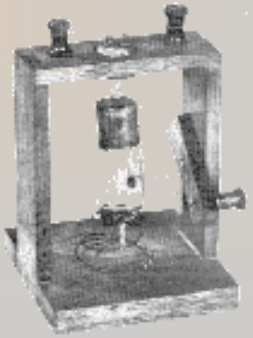
Marconi's antenna farm at **Poldhu, England**

1904

J.A. Fleming serves as a scientific consultant to the Marconi company,
and designs many pieces of early wireless apparatus.
He is charged to develop a new detector for wireless signals.
Fessenden commissions GE to develop a high frequency alternator.
E.F.W. Alexanderson is put on the project.
John Ambrose Fleming invents the first tube, the "Fleming Valve",
or as he called it..an **Oscillation Valve.**

Fleming

His valve is a two element rectifier, made by inserting a metal plate in one of
Edison's electric light bulbs.



*The **Fleming Valve***

Early Broadcasting

1910

DeForest broadcasts Enrico Caruso from the stage of the Metropolitan
The French Army Signal Corps installs a wireless station in the Eiffel Tower, operating on 30 khz, 111 khz, and 120 khz.

1920

Marconi establishes the first short-wave radio link between London and Birmingham, England on 20 Megacycles.
Although most experimenters and pioneers used the longer waves, Marconi never did fully abandon his efforts to use the short-wave bands.
Westinghouse builds a 100 watt radio station in a little shack atop its nine story factory in Pittsburgh... KDKA.
November 2, 1920, **Frank Conrad** and **Donald Little** broadcast election returns from 8:00PM till after Midnight- an event that is credited with starting a rush to build stations, and purchase receivers. (91 K Wav) *not the actual broadcast, but an interesting re-creation)*

1923

1923

US President Harding has a radio installed at the White House.
The first Network broadcast was made, as WEAF, WJAR and WMAF are linked by phone.
New radios became obsolete in 3 to 6 months time.
Approx. 500,000 radio sets are produced this year.
Vladimir Zworykin applies for his first patents which formed the basis of his iconoscope.

Edwin Armstrong invents the first 'Portable' radio. A wedding gift to his wife

1930

1934

Armstrong develops his theory to use FM.
'All-Wave' receivers are a hit this year, bringing in radio from foreign broadcasters.
WLW increases to a half million Watts of power.
The Federal Communications Commission (FCC) is created by congress thru the "Communications Act".

Clarion *This radio has front doors that hidethe knobs and tuning dial. It is a beautiful piece of furniture, and I was very impressed with the layout and design of the chassis - it seemed to be very well thought out, and was a joy to work on. Very well made all around. Obviously, the picture does not do this radio justice. I apologize to Mr. Clarion...whoever he may be. ;)*

1940

1941

FCC authorizes FM broadcasting on 42-50 MHz.
13 million radio sets are made this year, and 130 million tubes.
Color TV was demonstrated for the first time.
30 commercial FM stations are now on the air.

The Japanese attack Pearl Harbor. 40 K Wav FDR 

speaks to the nation.

That evening, Eleanor 

uses radio to speak to the women of the nation.
All amateur radio communication is halted by the war.

1945

The FCC changes the FM band from near 50 Megacycles to the present 88 to 108 megacycles.
This rendered many sets obsolete,
and set back Armstrong's development of FM as an alternative to AM.
This may (!) have been the plan all along by those involved with AM broadcasting.
The "Ashbacker" decision.
The Supreme Court orders the FCC to hold "Comparative Hearings" to decide
who would be awarded a frequency when there were two or more
filings for the same area. This process is used by the FCC for over 50 years.

1950

1950

People are talking about Transistors for the first time, saying they just might replace the tube.
4 million TV sets are in use in the U.S. on January 1st.

10 Million TV sets are in use by December 31st.

Some 90 million radio sets are in use in the United States - an average of 2 radios for every home in the nation.
Regular color television transmission begins.
The Korean War begins. Shortages begin to develop for receiving equipment

1955

Over 7 million Radio sets are produced.
That number, although less than the peak of Radio production in 1947 climbs steadily through 1961 when over 11 million sets are made in the US.
IBM invents the computer 'Hard Drive'

1960

1960

The manufacture of portable AM/FM or FM sets grows at 750 percent between 1960 and 1965.
The Tape Cart (Soon to become the 8-Track Tape) is introduced

1961

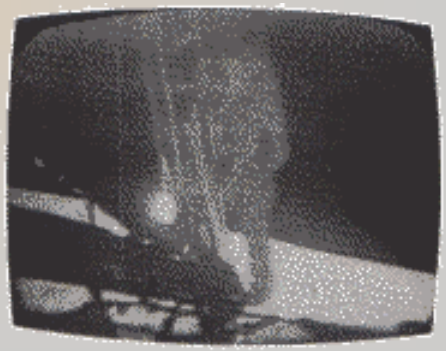
FM Stereo Broadcasting is authorized

1963

Cassette tape is introduced.
The first communications satellite is placed in geo-synchronous orbit.

1969

Astronauts send the first live pictures and audio(102k Wav) from the moon



Stereo

1979

The FCC reports there are 8,651 radio stations on the air.
4,549 AM, and 4,102 FM. Over 400 million receivers are in US homes and automobiles.
In Japan the worlds first cellular phone network starts

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1982

A.M. Stereo is first authorized in the United States.
5 competing systems struggle for dominance - as the FCC refuses to settle on a standard.

July 23, 1982 KDKA becomes the first station in the world to broadcast AM stereo.

1983

Cellular phone network starts in U.S.

1992

As of November 30th, 1992 the FCC reports 4961 AM stations,
4766 commercial FM stations, and 1585 Educational FM stations,
for a total of 11,312 radio stations on the air in the United States.
There are also 1509 television stations broadcasting.
New station ownership rules go into effect - a single group may
now own up to 18 AM and 18 FM broadcast stations.

1998

FCC and Broadcasters begin to heat up the debate over low power local FM radio stations.
FCC shuts down many unlicensed broadcasters,
but the tide may be turning toward some sort of truly local broadcast service being allowed.