

# The History of Radio

- The **history** of radio can be traced through the lives of these people:
  - Maxwell
  - Hertz
  - Heavyside
  - Marconi
  - DeForest
  - Armstrong
  - Farnsworth
  - Sarnoff

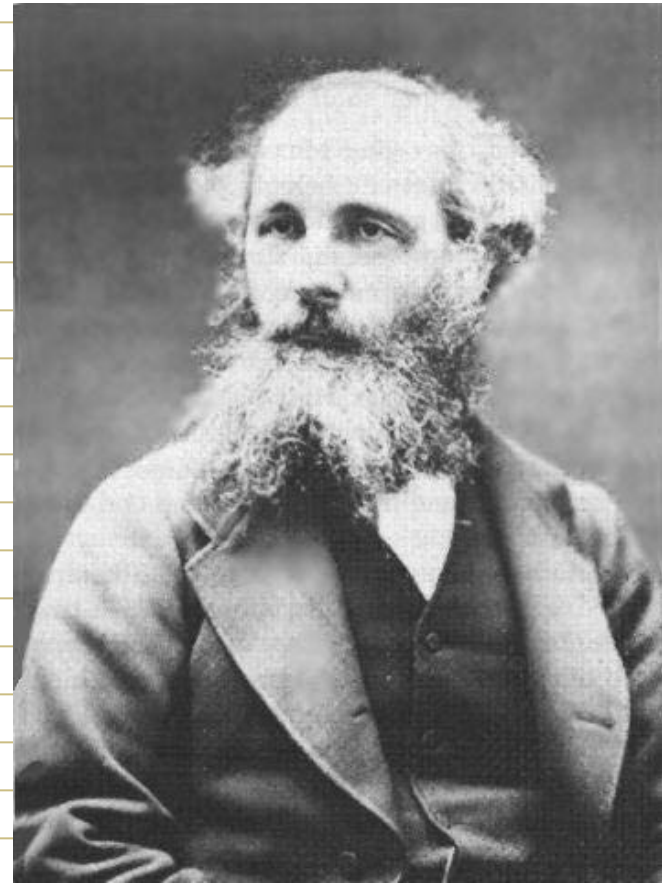


Married on December 1, 1923, Howard and Marion Armstrong went to Palm Beach for their honeymoon. Here on the beach Howard tunes in the world's first "portable" radio, a wedding gift to his bride.

*European*

# James Clerk Maxwell

- **Unified** Electric and Magnetic Theory.
- Predicted Electromagnetic **Wave Propagation**
- Theorized that **light** was an electromagnetic wave.
- Could "**low-frequency**" waves be generated ?



James Clerk Maxwell (1831-1879)

# Heinrich Hertz



Heinrich Hertz (1857-1894)

- Experimentally **verified** Maxwell's Theories.
- Generated and propagated "**radio waves**"
- Built **first** transmitter, antenna, and receiver apparatus.

# Guglielmo Marconi

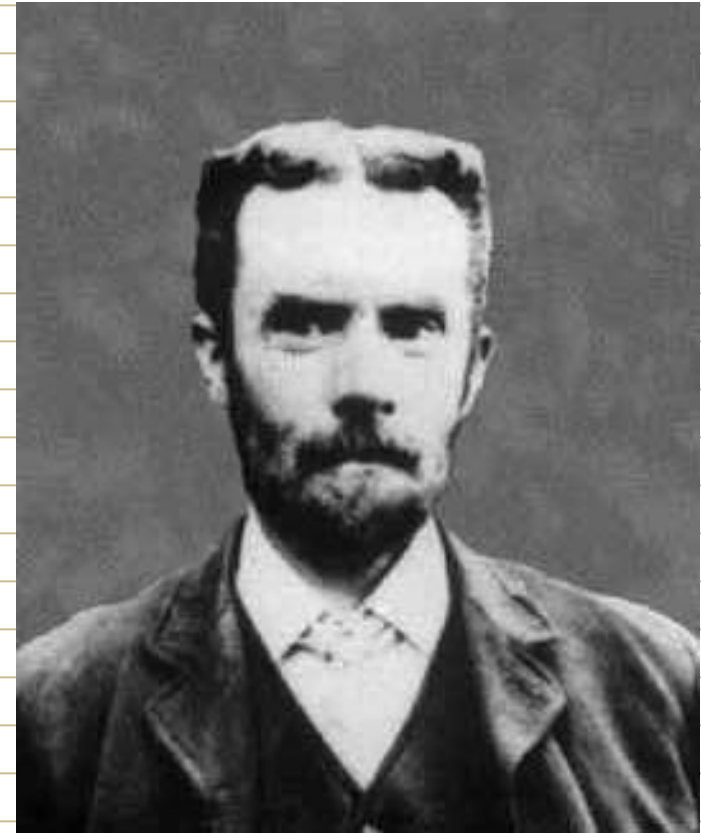
- The “**inventor** of radio”.
- Improved and **commercialized** Hertz' apparatus.
- Used for radio **telegraphy**.
- Among the first **radio engineers**.



Guglielmo Marconi  
(1874-1937)

# Oliver Heavyside

- Mr. Heavyside was perhaps the first true **electrical engineer**.
- He was an **odd** recluse, who was entirely **self taught**!
- Although unappreciated in his time, he provided **mathematical** solutions to important problems.
- Among his accomplishments are **transmission line theory** and Heavyside (**Laplace**) Transforms.



Oliver Heavyside

1850-1925

# Lee DeForest



- Invented the “audion” **vacuum tube**.
- Allowed for **ampflication** and **detection**.
- Led to first transmission of **voice and music**.

Lee DeForest (1873-1961)

# Edwin Howard Armstrong



Edwin H. Armstrong  
(1890-1954)

- Perhaps the **greatest** EE in history.
- Inventor of the:
  - feedback **amplifier**
  - electronic **oscillator**
  - super-hetrodyne **receiver**
  - **FM** radio.
- These inventions allowed for the transmission of **voice and music**.
- His ideas are still **widely used** today!



# Philo T. Farnsworth

- Inventor of electronic **television**.
- Largely **self-taught**.
- Developed initial design while in **high school!**
- A victim of **bad timing** and small capital.



Philo T. Farnsworth (1907-1971)



# David Sarnoff



RCA mastermind  
David Sarnoff

- Began as telegraph operator for Marconi.
- Originated idea of "broadcasting."
- Became president of the Radio Corporation of America
- Was not an engineer — but the only guy who became rich!