



Smithsonian

History of America in 101 Objects® and Then Some

Part 1, Session 4

the Atlantic



Band 9
Modern Nation
(1870s to 1929)

History Timeline [1970-1918]

Modern Nation (1870 -1929)

- 1911 Fire at New York's Triangle Shirtwaist factory kills 146 immigrant women workers.
- 1912 U.S. Chamber of Commerce founded; luxury liner R.M.S. *Titanic* sinks on its maiden voyage.
- 1913 **Sixteenth Amendment allowing income tax is ratified** ; Federal Reserve Bank is created; Armory Show, introducing European avant-garde art to the United States, opens in New York; women's suffrage march in Washington, D.C.
- 1914 **World War I begins in Europe**; death of Martha, the last passenger pigeon, draws public attention to need for wildlife conservation; **Panama Canal officially opens.**
- 1915 D. W Griffith's controversial silent film *Birth of a Nation* aids revival of the Ku Klux Klan; German submarine sinks RMS *Lusitania*.

History Timeline [1970-1918]

Modern Nation (1870 -1929)

- 1916 Jeannette Rankin of Montana is first woman elected to the House of Representatives; Margaret Sanger opens nation's first birth control clinic in Brooklyn, New York; Louis Brandeis is first Jewish justice appointed to the Supreme Court.
- 1917 **United States enters World War I** on the Allied side; first commercial jazz recording, "Livery Stable Blues," made in New Orleans; women's suffrage advocates stage march down Fifth Avenue in New York and silent vigil outside the White House.
- 1918 Allies win World War 1, about 116,000 American war dead, about a third from global influenza pandemic which ultimately kills 600,000 Americans in three years,
- 1919 Eighteenth Amendment on the **prohibition** of alcohol ratified; Treaty of Versailles rejected by U.S. Senate,

History Timeline [1970-1918]

Modern Nation (1870-1929)

- 1920 19th Amendment grants women the right to vote; KDKA begins radio broadcast in Pittsburgh; slight majority of Americans live in cities.
- 1924 American Indians granted citizenship; American Immigration Act passed.
- 1925 Scopes "Monkey Trial" in Tennessee.
- 1927 Charles A. Lindbergh flies nonstop across the Atlantic in the *Spirit of St. Louis*; Babe Ruth hits 60 home runs and the Yankees win the World Series; Supreme Court upholds constitutionality of forced sterilizations in *Buck. v. Bell*; **fast motion picture "talkie," *The jazz Singer*, released.**
- 1928 Walt Disney introduces Mickey Mouse in *Steamboat Willie*.

Modern Nation (1870s to 1929)

- 47. James Whistler's *Harmony in Blue and Gold: The Peacock Room*
- 48. Bernice Palmer's Kodak Brownie Camera
- 44. Air Conditioning
- 49. Helen Keller's Watch
- 28. Radio
- 50. Suffragists' "Great Demand " Banner
- 51. Ku Klux Klan Robe and Hood

Modern Nation (1870s to 1929)

- 52. World War I Gas Mask
- 53. Louis Armstrong 's Trumpet
- 54. Scopes "Monkey Trial" Photograph
- **41. Rocketry- Dr. Robert Goddard [Share]**
- 55. *Spirit of Saint Louis*
- 56. Babe Ruth Autographed Baseball

47. James Whistler's *Harmony in Blue and Gold: The Peacock Room*



A magnificently decorated room demonstrates creativity and an appreciation of cross cultural artistic influences. An example of the “Gilded Age” as America emerges proudly of the World stage

48. Bernice Palmer's Kodak Brownie Camera

She had it with her on her Titanic Voyage



No. 2 Kodak Brownie, Model B,
Manufactured In 1911. Cost \$3.00


- George Eastman in 1880 began to experiment with dry coated photographic plates. From this, he developed dry cellulose film rolls in 1885.
- In 1889 he produced hundred foot long strip of cellulose emulsion film that worked with Edison's new movie camera
- He embarked on a camera to use rolls of film and in 1900 he produced a new Brownie Camera that sold for \$1.00 with a roll of film for \$0.15
- From this base, Kodak was a major force in photography for over a 100 years only to be overtaken by digital processes.

Photography Comes of Age

- Ubiquitous and inexpensive
- Easy to use
- Universal picture taking and millions developing their pictures
- Images of everything
- First brown hues, then black and white and eventually full color
- Eventual transition from chemical to electronic, utilizing the charge-coupled device (CCD), an American invention brought out in 1969 by Willard Boyle and George E. Smith of AT&T Bell Labs.



Ubiquitous

- Photographs are everywhere and are so routinely folded into our writing, books, magazines, in electronic form in TV and now in digital movies that they are not even taken for granted—they are just there.
- The camera is inside. 
- Selfie anyone?

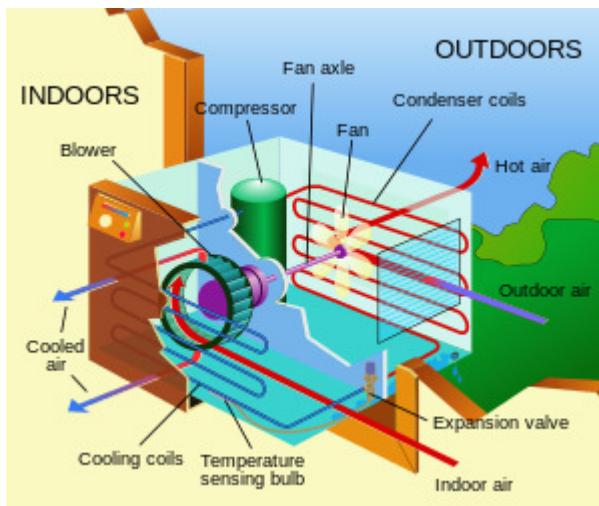


44. Air Conditioning

Would You Start a Business in Houston or Bangalore Without it?



Gorrie's 1844 Model



Cira 2014

- Air conditioning (often referred to as AC or A/C) is the process of altering the properties of air (primarily temperature and humidity) to more favorable conditions, typically with the aim of distributing the conditioned air to an occupied space to improve comfort.
- In the most general sense, air conditioning can refer to any form of technology, heating, cooling, de-humidification, humidification, cleaning, ventilation, or air movement, that modifies the condition of air.
- Often refer to as a godsend

Technological Advancement

- A/C is an extension of refrigeration
- In 1902, the first modern electrical air conditioning unit was [invented](#) by [Willis Carrier](#) in Buffalo, NY. After graduating from [Cornell](#), Carrier found a job at the [Buffalo Forge Company](#). There, he began experimenting with A/C as a way to solve an environmental problem for a Lithographing and Publishing Co.
- Evaporative cooling was used in refrigerators. The first real air-conditioning and shortly thereafter the first private home to have A/C (The Dubose House) was built in Chapel Hill, NC 1933.
- Realizing that A/C would one day be a standard feature of private homes, particularly in the South, David St. Pierre Dudoise designed an ingenious network of ductwork and vents, all painstakingly disguised behind intricate and attractive Georgian-style open moldings.
- Meadowmont community in Chapel Hill is believed to be one of the first communities in the United States equipped with central A/C.

Modern Systems

- Compressed refrigerants was the next advance in cooling.
- A refrigerant is a substance or mixture, usually a fluid, used in a heat pump and refrigeration cycle. In most cycles it undergoes phase transitions from a liquid to a gas and back again. This cools a radiator over which warm moist air is blown and thus cooled and dried.
- Many working fluids have been used for such purposes. Fluorocarbons, especially chlorofluorocarbons, became commonplace in the 20th century, but they are being phased out because of their ozone depletion effects.
- Large scale industrial applications use ammonia, sulfur dioxide, and non-halogenated hydrocarbons such as propane as these are more economical in large systems.

The Sad Tale of the Window Air Conditioner's Inventor

- **In 1945, Robert Sherman of Lynn, MA, invented the portable, in-window air conditioner that cooled and heated, humidified and dehumidified, and filtered the air (Patent # 2,433,960 granted January 6, 1948/ expired in 1960).**
- **Sherman worked for GE turbine division during the day and worked on his air conditioner design during the night. GE claimed that the effort belong to them, as he was employed by them. He was fired and they dared him to sue.**
- **Sherman did not have the resources to fight GE in court—they promised to "break him" if he tried - and thus never received any money or recognition. He died in 1962.**
- **Patent at http://navlog.org/patent_1.html**



AC Impact-How Many of You Drove Here With the AC on?

- **It can be argued that the US south and southwest flourished after WWII due in large measure to the almost universal use of AC.**
- **Many locations world-wide have been converted from tropical backwater to modern cities.**
- **Singapore is offered as an example of a location that has a middle class economy while sitting on the equator and surrounded by oceans with high temperatures and humidity.**

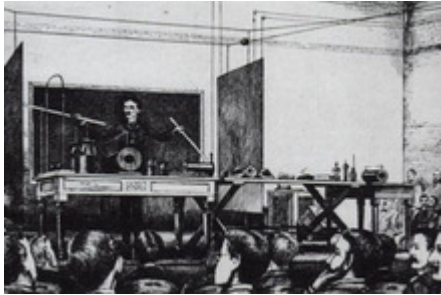
49. Helen Keller's Watch



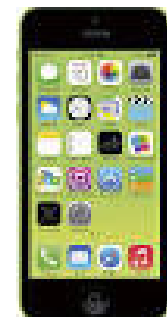
- A timepiece with a simple but special feature helps a remarkable woman lead the way to worldwide recognition for the disabled.
- With technology expanding with the industrial revolutions; aids for handicapped individuals begin to come into wide-spread use.
- Bell's initial work with the telephone was to assist deaf individuals

28. Radio

First demonstration of electronic media's power to spread ideas and homogenize culture



1906



2014



American Radio

- Radio Broadcasting began in many urban locations in the world in the 1920s. Often operated under Governments agencies.
- In the US, it was driven by a number of **private radio manufactures** who also began to assemble the broadcasting networks: Radio Corporation of America (RCA) and Westinghouse. GE, AT&T and others built broadcasting station equipment.
- Initial broadcasts were in Amplitude Modulation (AM). In the 1940s Frequency Modulation (FM) was introduces and became predominant in the 1960s.
- The 1926 Federal Radio Commission established frequency, interference standards and radiated power limits. Now the FCC.
- While there were many players, David Sarnoff and RCA was a major driver with it manufacturing base and ownership of two networks: the Red and Blue.
- The FCC forced divesture. The Red network became NBC and the Blue network became ABC. CBS, Mutual and other networks were also formed.

Explosive growth of Radio in the US

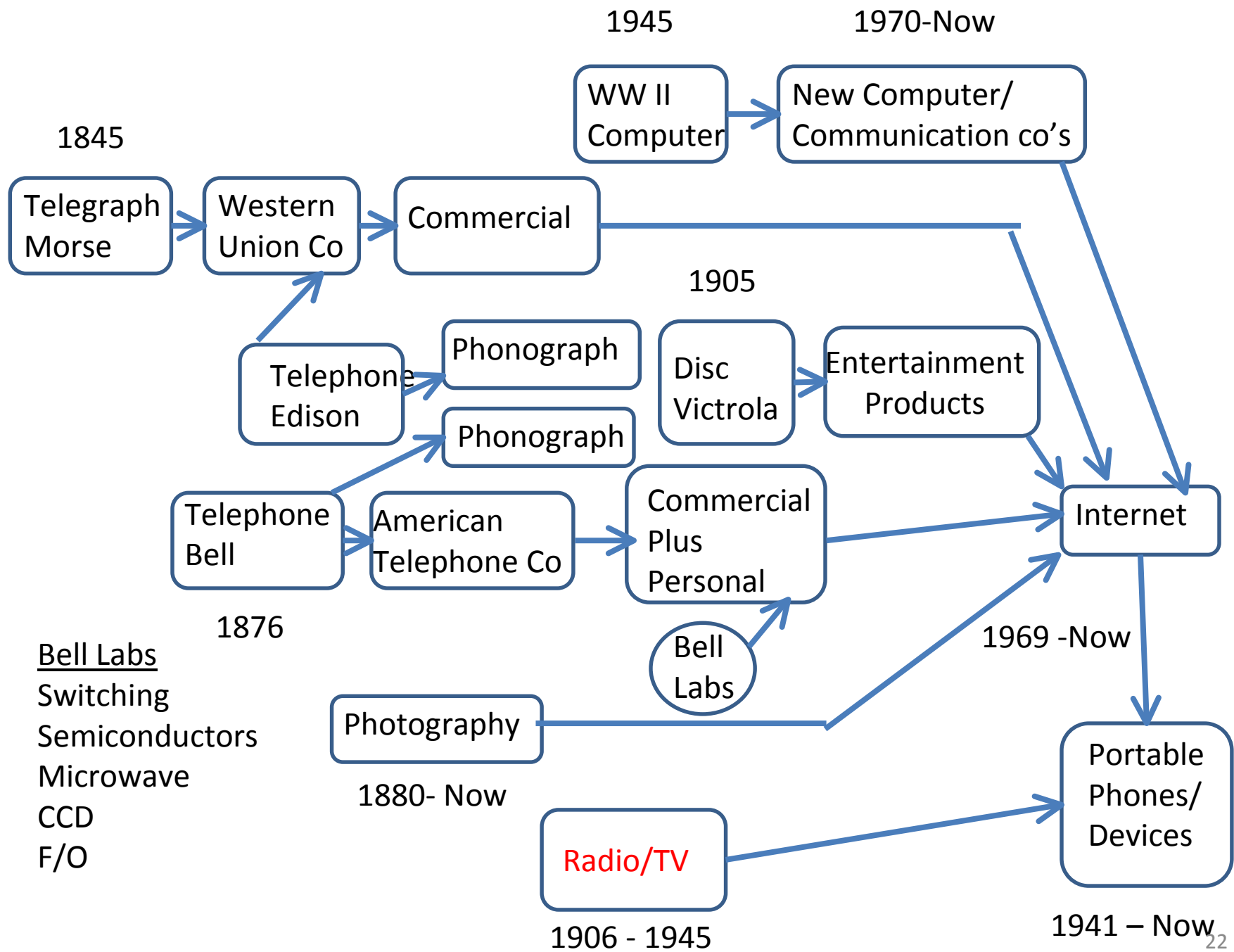
- 1922 60,000
- 1925 2,750,000
- 1930 14,000,000
- 1940 28,000,000 US population is 132,000,000

1920: The first U.S. radio broadcast license granted

On October 27, 1920, KDKA in Pittsburg, PA, obtained the first broadcast license. About a week later, on November 2, they aired the results of the Harding-Cox presidential election.

1930: Car radios go commercial

Galvin Manufacturing Company (now known as Motorola) introduced the Motorola 5T71 the first popular commercial car radio. The name “Motorola” is a combination of the words “motor” and “Victrola.”



50. Suffragists' "Great Demand " Banner



A 1917 protest banner unfurled by women picketing the White House asserting their right to vote.

A fifty year effort was finally accomplished with the ratification of the 19th amendment to the US Constitution in 1920.

"The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex."

Evolving Effect of the 19th Amendment

- In recent decades more women vote than men.
- Suffragette Jeannette Rankin first woman member of the House, 1916.

"I may be the first woman member of Congress but I won't be the last."

- Margret Chase Smith, first woman Senator, 1949
- Nancy Pelosi, first woman House Minority Leader, 2003-2007; first woman Speaker of the House, 2007-2011
- 2014: 20 Women Senators, 84 women House members

1984



2008



2016?



51. Ku Klux Klan Robe and Hood

~~Good~~, Bad and Ugly



Their own song

Disguises that wrought terror on generations, serve as a reminder of the Nation's legacy of intolerance. We are a work in progress.

The Klan promulgated a nostalgic view of a simpler time in a rural Southern America not corrupted by fears of loosening morals of the Jazz age, women's rights and their vote and the black population knew their place and were subservient.

Ku Klux Klan History in a “Nut” shell

- Federal troops and reconstruction reforms the South end in 1877.
- Angry planters and former Confederates banded together to form a number of secret societies to lash out against Northerners and Freedmen who they blamed for dis-empowering them.
- It grew, initially in the South, along “fraternal organization lines” to number 5 million in 1926. It is described as *Nativist* — mostly White Evangelical Protestants men opposed to a changing America.
- Positions: Keep the blacks in “their place,” anti-Catholic, Anti-Semitic, anti-immigrant except for those from Northwest Europe.
- Their voting block had large hold on the Southern Congressional Democratic Party and its seniority, now perhaps the New Republicans.
- The Klan diminished during WWII and in post war prosperity, but small resurgences started in response to civil right actions in the 1960s, including many murders.
- Now, they are aligned with White supremacists groups and assert the freedoms of free speech and public assembly enshrined in the first Amendment. Freedoms that they would strip away from many other Americans.

52. World War I Gas Mask, Ugly Too

World War I erupted in 1914 and ran for over four years. It engaged 70 million combatants and killed 9 million.



So, why would a gas mask be the object to represent the WWI? WWI is called the **first industrialized war**.

Technology and engineering produced weapons that over whelmed the human body and then built some counter-measures to these weapons.

It was also call the Chemistry War. Poison gas was one of its most terrifying weapons.

Before joining the Allied side in 1917, the US watched in horror, as gas weapons proliferated on the battlefield.

The US Industrialization of War

- **Observing gas warfare and building on European designs, the US in 1916 engaged the US Bureau of Mines to investigate a “gas mask” design.**
- **The National Academy of Science led by the Smithsonian established the National Research Council [NRC] which oversaw many WW I weapon developments and then extended into WW II.**
- **NRC experimented with gases in NW DC in farmland behind AU and developed a mask design.**
- **The Army began manufacture of what totaled 3 million masks for use by the US AEF.**

53. Louis Armstrong 's Trumpet



The instrument of a legendary Musician helps develop a uniquely American Music.

Jazz began as a uniquely American form of music, and the importance of Louie Armstrong (1901-1971) in its development is culturally and technically unequalled.

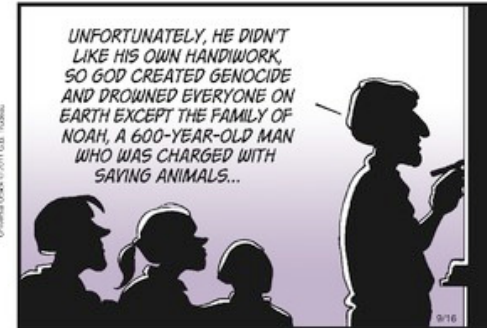
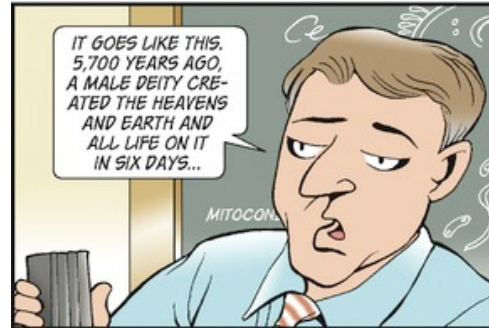
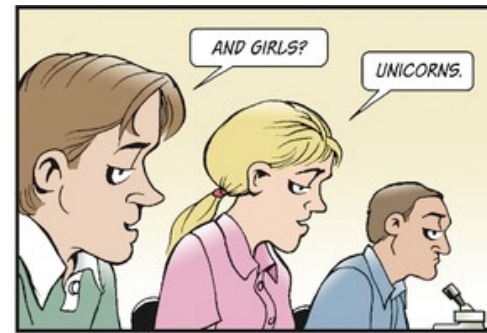
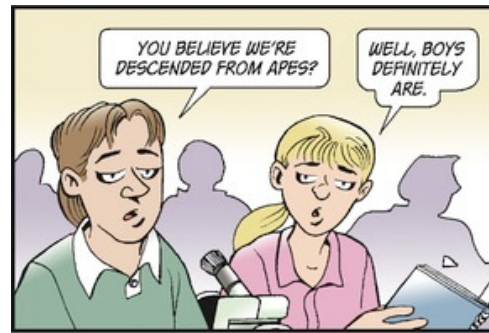
54. Scopes “Monkey Trial” Photographs

They look like they could have used #44-AC



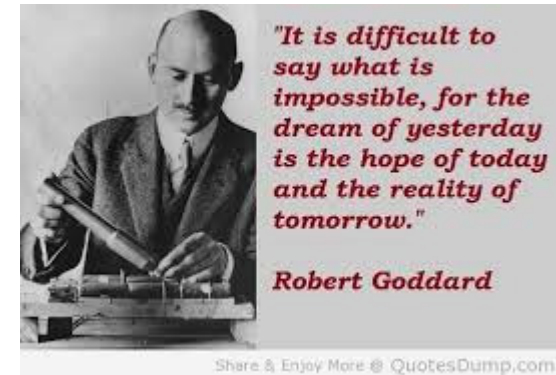
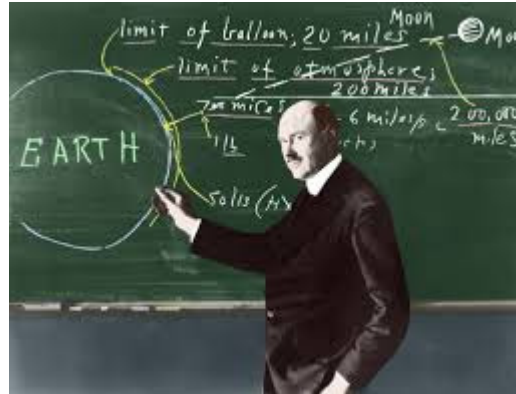
Photos by Watson Davis, Smithsonian Institute Archives

In 1925 in rural tiny Dayton Tennessee, two of America’s foremost legal experts, Clarence Darrow and William Jennings Bryant face off in court over the teaching of evolution in Public Schools.



41. Rocketry- Dr. Robert Goddard

[Shared]



Dr. Robert Hutchings Goddard is considered the father of modern rocket propulsion and space travel. A physicist of great insight, Goddard also had a unique genius for invention.

NASA's Goddard Space Flight Center in Greenbelt, Md., was established on May 1, 1959 as a memorial to this brilliant scientist.

By 1926, Goddard had constructed and successfully tested the first rocket using liquid fuel. Indeed, the flight of Goddard's rocket on March 16, 1926, at Auburn, MA, was as significant to US history as that of the Wright brothers at Kitty Hawk.

Rockets, the only way off the Planet so far!

Dr. Goddard's 1926 first liquid fueled rocket

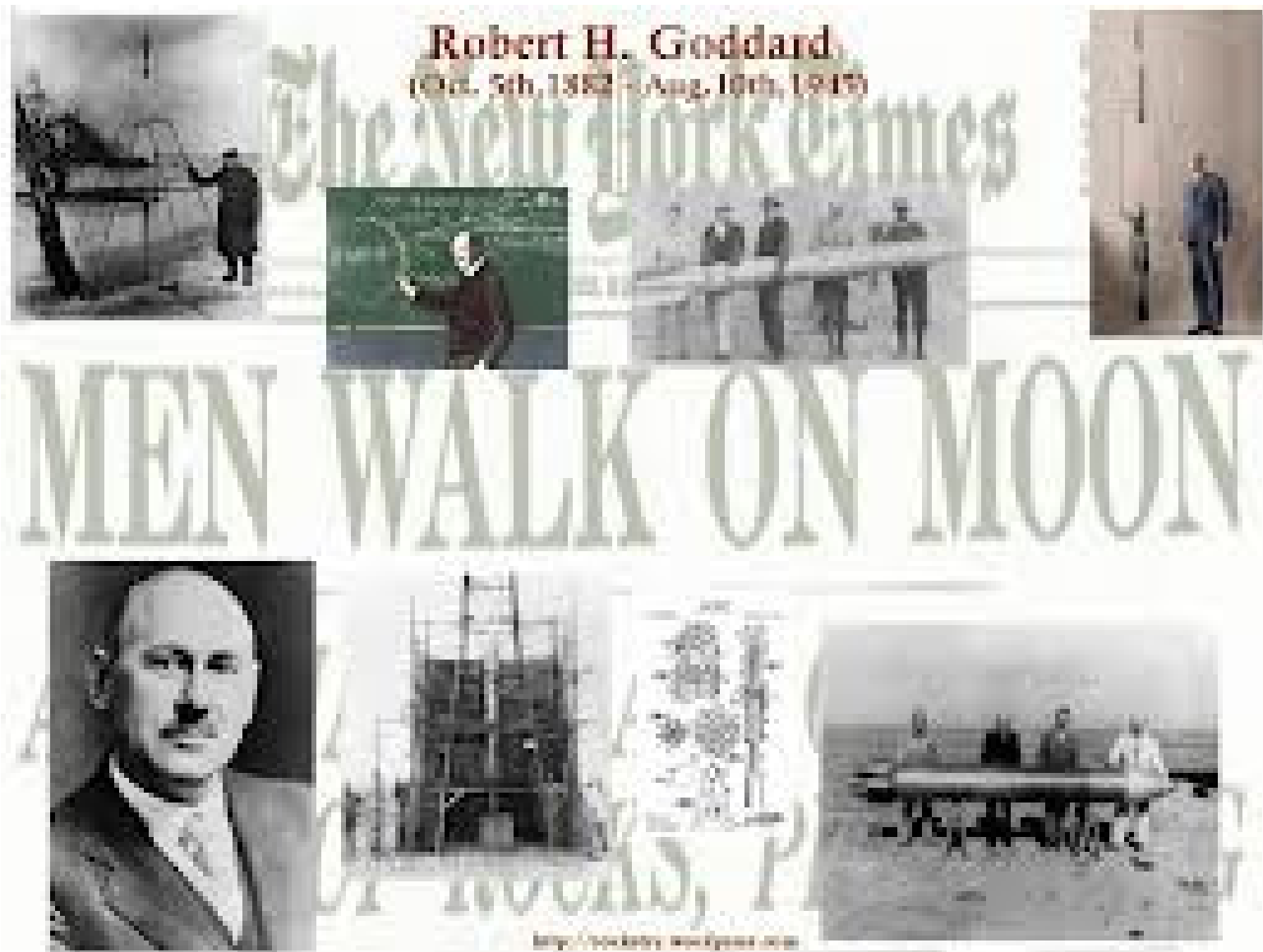


5 feet



Saturn V
37 Stories
370 feet

1969





Urban Myth



- **There is no conformation that Goddard in the US, Von Braun in Nazi Germany or Korolëv in the Soviet Union collaborated or spied on the other in their parallel development of liquid fueled rockets.**
- **All three were confronted with the same Laws of Physics and the state 1930s metallurgy and gyroscopes.**
- **Von Braun and the Nazi Germany developed the V-2 first, as they need a weapon.**

55. *Spirit of Saint Louis built on Airmail*



Lindbergh's solo non-stop flight 1927 flight was the inaugural of intercontinental air transportation.

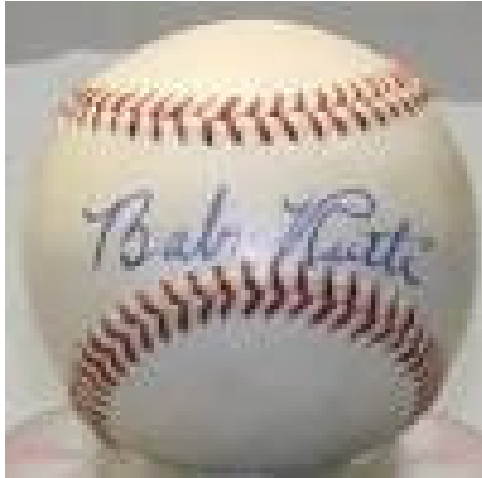
In 1954 more passengers flew across the Atlantic than went by ship—Air travel just soared from there.

Today, a traveler can go by air almost anywhere between two points on the Earth in less than 24 hours.

1927 New York to Paris non-stop in 33.5 hours



56. Babe Ruth Autographed Baseball



**A souvenir marks
America's embrace of
a supremely talented
sports hero.**

**He almost single
handily made Baseball
the nation's sport in
the 1920s**

**The Romans had Bread and Circus, we Americans
have Beer and Sports.**

**Babe Ruth was an amazing professional athlete
whose abilities formed a following that expanded into
the mega-billion dollar industries that makes up
professional sports.**

**Hundreds of teams, trillions of dollars spent on mega
stadiums, colleges trying to figure out if their roll is to
train the next generation of citizens or satisfy alumni
with semi-literate super athletes.**

**But, we have Title IX, ensuring that women's athletics
have nominal equality.**

**Even what is left of our newspapers still have entire
sections devoted to sports. Even The Olympics has
become a mega business.**