### Jet Propulsion
- Reaction Engine
  - Hero Of Alexandria - 3rd Century BC
- Steam Turbine Development
  - Italian Engineer - Giovanni Branca (1629)
  - Steam Jet Against Turbine Wheel
- Gas Turbine
  - British Inventor - John Barber (1791)
  - First Patent
- Jet-Propelled Biplane
  - French Scientist - Henri Marie Coanda
  - Took Off And Flew Under Own Power

### Frank Whittle - Britain
- Patent - 1930
  - First Practical Form Of Modern Gas Turbine
  - Published - 1932
- First Engine
  - Development - 1935/6
  - Test - 1939
  - W-1 Turbojet Engine
  - Shipped To US
- First Flight - May 15, 1941
  - Gloster E.28/38
  - Shipped To US
  - National A & S Museum

### Hans Pabst von Ohain - Germany
- Better Climate In Germany
- Better Engine Than Whittle's
- First Flight - August 27, 1939
- National Air & Space Museum

### German WW II Jets
- Hans von Ohain' First Flight
  - HeS 3b Engine In He 178 Plane
  - 360 mph
  - Engine
    - High Speed Turbine
    - Compressor
  - ME 262
    - Twin Engine
    - 1944
    - 525 mph At 40,000 feet
- Arado Ar 234 Bomber
  - Four Jet Engines
  - All Destroyed By Allied Bombers

### Jet Engines

### Bell XS-1
- Speed Of Sound
- Rocket Powered
- October 14, 1947
- Chuck Yeager
- Freak Machine
  - Non Swept Wings
Jet Airliners
- First Jet-Powered Airliner
  - British De Havilland Comet I
  - First Flight - 1949, Service - 1952
  - Structural Difficiencies - Withdrawn From Service 1954
- Boeing 707 - 1958
  - Over 1000 Built
  - Mach 0.82 At 30,000 feet

Historical Events
- First Free Flight By Humans
  - Montgolfiere Balloon - 1783
- First Powered Flight
  - Orville Wright - December 17, 1903
  - Flew English Channel
    - Louis Bleriot - July 25, 1909
  - First Successful Helicopter Flights
    - Heinrich Focke - 1936
    - Igor Sikorsky - 1939
- Crossing Atlantic - Newfoundland To Galway
  - Alcock & Brown - 1919
- Crossing Atlantic - New York To Paris
  - Charles Lindburg “Spirit Of St. Louis” - 1927
- Round The World
  - American Douglas - 1924
  - North Pole (South)
    - Richard Byrd - 1926 (1929)
  - Hindenburg Disaster
    - Lakehurst - May 6, 1937

- World War II
  - Whittle & Ohain - Jet Engine
- Sound Barrier
  - Chuck Yeager “Bell XS-1” - October 14, 1947
- Mach 1 - Level Flight
  - North American F-100 - 1953
- Mach 2 - Level Flight
  - Lockheed F-104 - 1958
- Mach 1 - Level Flight
  - Lockheed A-11 - 1963