100 YEARS OF SUSTAINED POWER FLIGHT HISTORY

Compiled By: Barbara Harris-Para

Before the Wright Brothers experience there were attempts for men/women to fly:

- 1793 A French balloonist, <u>Jean Pierre Blanchard</u>, became the first aeronaut in America. He ascended from Phila. & 45 minutes later landed in Deptford, NJ
- 1830 <u>Charles F. Durant</u> of Jersey City was America's 1st native-born aeronaut. He flew his balloon from Castle Garden (Battery Park) in Manhattan & landed in South Amboy, NJ
- Perth Amboy's <u>Dr. Solomon Andrews</u> built & flew America's 1st dirigible balloon. With a rudder but no engine the doctor flew his invention from NJ to Long Island by tacking in the cross winds like a sailboat.
- 1903 December 17th Kitty Hawk, NC Orville Wright makes the first controlled powered flight, flying the "Wright Flyer" 120' in 12 seconds
- 1905 Mrs. Hart O. Berg flew with Wilbur Wright, just two years after Wright's historic flight
- 1906 <u>Brazilian Alberto Santos Dumont</u> publicly flew a powered aircraft in Europe in his 14-bis plane
 - First Aero Exhibition, the NY Aero Show held with the auto show
- 1907 <u>International Aeronautic Congress</u> held in New York
- 1908 <u>Glenn H. Curtiss</u> finished his plane the "June Bug biplane". It was flown on March 12, for 300', he then improved upon it, flew it on July 4 over a measured kilometer <u>First Flying Club</u> established in New York City, "Aeronautical Society"
- 1909 <u>First private airplane</u> sold in U.S. a pusher sold to the Aeronautic Society of New York <u>First Aeroplane</u> dealership- Wycroff, Church & Partridge, auto dealers in NYC, acquired Curtiss line
 - <u>Dr. Wm. H. Green</u> in Greene biplane makes a passenger carrying record at Morris Park, NY carrying Leo Stevens & two other passengers for a short flight
 - <u>Louis Bleriot</u> takes off from Calais, France to Dover, England in his monoplane July 25 first aerial crossing of the English Channel in 37 minutes
 - First Monoplane was built by Dr. Henry Walden at Mineola
 - <u>Curtiss wins Scientific American Trophy</u> in his Golden Flyer at Mineola setting American distance record of 16 miles
 - <u>First air speed record</u> Rheims, France with an average speed of 43.385 mph in Curtiss biplane
 - Bolard Brothers of Rahway built the 1st fixed-wing "aero plane" in NJ.
- 1910 <u>Claude Graham-White</u> begins delivering airmail on an unofficial basis, between Hendon & Windsor, England
 - Wright Brothers exhibit four airplanes at Bellmont Park Air Meet. The Wright Model R (Racer) was built especially for the Gordon Bennett Trophy Race
 - Two shots were fired from Curtiss biplane at ground target with rifles (.30 caliber
 - Springfield) by Lt. Jacobs Fickel at Sheepshead Bay, LI
 - Henri Fabre takes off from & lands on water at Lake Berre, France
 - Long distance flying record is set during first successful flight between Albany to NYC 142.5 miles in 2 hours, 50 minutes
 - First demonstrated dropping of a bomb from an airplane
 - James McCurdy sends an air-to-ground radio message from a Curtiss biplane

<u>Curtiss plane</u> makes a successful takeoff from a Navy Ship the USS Birmingham flown by Navy Lt. Eugene Ely. The ship was stationed at Hampton Roads, VA

Blanche Stuart Scott first American female pilot

Walter Wellman, a newsman & explorer with a crew of 5 left Atlantic City in a dirigible to attempt to fly across the Atlantic Ocean. They made 71-½ hrs. covered 1008 miles before they were forced to abandon the craft off the coast of Maine. Both time & mileage set a record for a powered flight

<u>Glen Curtiss</u> hurled "Orange Bombs-Over Boats in Miniature Battle" in Atlantic City to show the public the potential of aviation in the military. He flew at a height of 200' he was decades before his time. Pilots were still called drivers at this time.

1911 <u>Curtiss designs the first American seaplane</u>, or hydroplane as it was called Jan. 26 made its first flight of 31 seconds landing smoothly on the water.

<u>Curtiss Albany Flyer makes 1st landing</u> on a ship on the USS Pennsylvania in San Francisco Bay

<u>Curtiss makes the first water takeoff & landing</u> at San Diego in his Hydro <u>Sale of the 1st US Navy airplane</u>: Curtiss D Triad as Navy A-1 first flown by Lt. T.G.Ellyson

<u>Pasadena, CA, Calbraith Rodgers</u> flew the Wright EX Vin Fiz, completes 4,321 miles in 49 days cross-country flight from Sheepshead Bay, NY

First military aviation school was established at College Park, MD

Invention of the first dual pilot controls and retractable landing gear

First issued U.S. pilot's license-number one

<u>San Francisco</u>, an <u>Army test</u>, Lt. Myron Chrissy drops a live bomb from an airplane <u>Harriet Quimby</u> received her license in 1911 her license number was 37, 1st women across the English Channel

<u>Harry Atwood</u> flies St. Louis to NY 1155 miles, longest cross country to date <u>First airmail delivery</u> in US; Earle Ovington flies mail from NYC to Mineola, 6 miles in a Bleriot

1912 First flying boat demonstration on Keuka Lake, NY

<u>First Air Mail</u> was flown from Dominguez, CA to Compton, CA by Martin, and to Catalina Island

<u>Pau, France, Louis Bechereau's</u> sleek Deperdussin racer piloted by Jules Vedrines is the first airplane to exceed 100 mph.

Wilbur Wright dies on May 30, 1912 from typhoid fever

Frank Coffyn takes automatic movie aerials over New York Harbor

<u>Boland Brothers</u> (of Rahway, NJ) biplane was the first to fly in Central & South America <u>Oliver Simmons</u> flew the 1st airmail in a Wright Flyer, owned by publisher Robert Collier, from South Amboy to Perth Amboy.

1914 <u>Tourist were flown</u> across Tampa Bay on 1st scheduled commercial flight from St. Petersburg, FL to St. Petersburg Tampa

Over the Seine River, France, Lawrence Sperry flew Curtiss Flying Boat fitted with four gyroscopes, demonstrates stable flying with no hands on the control.

<u>Russian Igor Sikorsky's</u> four engine Il'ya Muromets served a meal between Kiev & St. Petersburg

1915 <u>U.S. National Advisory Committee</u> for Aeronautics research, forerunner of NASA <u>Orville disposed</u> of his interest in the Wright Company, but consults for the company

- 1916 <u>Army aviation was given funds</u> by Congress to expand their fleet, WWI began 4/17 <u>Curtiss Co.</u> produced the JN-4 "Jenny" military trainer, which would become the airplane of choice for barnstormers & mail carriers after the war.
 - <u>High Intensity Arc Lamps</u> were installed for defense
 - <u>The Martin & Wright Companies</u> were joined together as the Martin-Wright Company <u>Ruth Law</u> flies Curtiss Pusher from Chicago to New York with 2 stops en route for new cross-country record
 - First Air Cooled Engine- developed by Charles Lawrence
- 1917 <u>America's entry into WWI</u>, Curtiss invests \$4 million to build the world's largest airplane factory in Buffalo, NY
 - <u>Pilot Licenses</u> were now being issued to everyone completing training Five New Jersey Pilots- became flying aces during World War I
- May 15, first Air Mail service was inaugurated, and Major Reuben H. Fleet U.S. Army was in charge of this service between Washington, DC to Philadelphia to New York City Germany Fokker D VII considered by many the best fighter of WWI, enters service August the U.S. Post Office Dept. took over airmail service from the Army September the first transcontinental airmail service was in operation from NY to San Francisco, CA
 - <u>Lawrence Sperry</u> test flies aerial torpedo over the Great South Bay; 1st U.S. guided missile
 - <u>First Army transcontinental</u> flight by Major Albert Smith, San Diego-Jacksonville, New York and return
- 1919 <u>In 19 days a six-man crew in a Navy-Curtiss flying boat completes the first transatlantic flight starting from Rockaway, NY to Lisbon Portugal.</u>
 - Lt. Cdr. Albert Read & pilot Lt. Walter Hinton fly first aircraft to cross the Atlantic, a US Navy seaplane leaves Rockaway Naval Air Station in Curtiss NC4 flying boat
 - Curtiss L-3 tri-plane piloted by Roland Rohlfs sets altitude record of 31,420'
 - <u>Albany, NY</u> becomes the first city to establish municipal landing site for airplanes at a former polo field in Latham named Quentin R. Roosevelt Field. It was later relocated to Westerio Island in Hudson River
 - <u>Bader Field</u> in Atlantic City became the world's *I*st "air-port" was coined by a local newsman
- 1920 <u>First attempt</u> at passenger comfort a two-place cabin installed in a DH-4 by air mail mechanics
 - September completion of the transcontinental airmail service
 - <u>Martin BM-1</u> America's first two-engine bomber, powered with 2-400 h.p. Liberty engines, with speeds of 118 mph wingspan of 71' came off the production line Four DeHaveland planes fly from NY to Nome, Alaska & return
 - Worlds Largest Plane the Barling Bomber, was built at Teterboro by the Wittemann
 - Brothers. It was three wings and six engines.

THE GOLDEN AGE OF FLIGHT 1921-1935

- 1921 <u>First transcontinental</u> airmail flight, Mineola, NY to San Francisco; takes 23 hrs. 20 min. The Navy built the world's largest hangar at Lakehurst, NJ
- 1922 The U.S. Navy commissions its first aircraft carrier, the USS Langley

<u>Thomas Midgely</u> of General Motors files patent for leaded gasoline, which leads to hightest aviation fuels

First Army Air Route from Mitchel Field to McCook Field, Ohio

<u>Lawrence Sperry</u> drops landing wheels from his plane in flight & successfully lands with skid device in Farmingdale, NY

<u>Bessie Coleman</u> makes an exhibition flight at Curtiss Field, Garden City; 1st public flight made by a black women in the U.S., she returned to France where she received her license & became the first women black pilot

1923 Two U.S. Army de Haviland DH-4B's conduct first in-flight refueling

Lt. Oakley Kelly & Lt. John Macready of the U.S. Army Air Service complete nonstop coast to coast flight from New York to San Diego in a Fokker T-2

<u>Patented beacon</u> system guiding pilots with mail between airports in the Chicago-Cheyenne leg of the first airmail service route

<u>Lone Eagle takes</u> off from DC in a Ryan Monoplane goes non-stop to Mexico City in 27 hours 10 minutes of flight time

<u>USN Lt. Alford Williams</u> sets speed record of 266.59 mph in a Curtiss Racer at Mitchel Field; record would stand until 1930

The 1st of the Navy's ill-fated dirigibles, the "Shenandoah," was built at Lakehurst NAS Charles Lanier Lawrence who perfected the 1st air-cooled aircraft engine in 1916, joined the Wright Aeronautical Co. in Paterson, NJ & developed the "Whirlwind" engine that would power many historic long distance flights over the next decade

Between April 6 & September 28, first flight around the world was made. Four Douglas Cruisers with 2 men started from Seattle, WA. Two planes completed the journey in 175 days, distance flown 26,345 miles total flying time of 363 hrs. 7 minutes. One plane was destroyed in a crash in Alaska; the fourth sank after a crash in the Atlantic on the last lap of the trip

<u>Continuous chain of lighted airway</u> beacons marked the airmail route from coast to coast A U.S. Army pilot flies from Boston to NYC in record 58 minutes solo.

<u>U.S. Postal Service</u>- established an airport on John Hadley's farm in South Plainfield, NJ. All transcontinental airmail to/from the greater NY metro area passed through Hadley Field. Pilot Dean Smith made the 1st night airmail flight over the Allegheny Mountains <u>First flight to use instruments</u> USAS Lts. E.H. Bardsdale & E. Jones fly 575 miles from Dayton, OH to Mitchel Field, NY

<u>First transcontinental</u> flight from dawn to dusk, Army Lt. Russell Maugham flies from NY to San Francisco in a Curtiss PW-8 makes five fuel stops

1925 <u>Kelly Act allowing Post Offices</u> to contract with private firms to sixteen companies held fly the airmail routes

<u>Ford Tri-motor</u> was flown first American all metal aircraft, 3-200 hp engines <u>Igor Sikorsky</u> builds his S-29 aircraft in a small building at Roosevelt Field, NY <u>Daniel Guggenheim</u> donates \$500,000. towards establishment of School of Aeronautics at New York University

1926 First liquid fueled rocket

<u>Admiral Richard Byrd</u> & Floyd Bennett flew to the North Pole, May 9 but controversy over who flew over the Pole first, Byrd & Bennett or Umberto Nobile & Ronald <u>Amundsen</u> in the dirigible "Norge" three days later. Also flew a trimotor monoplane designed by Anthony Fokker & built at Teterboro. Powered by Whirlwind engines

Admiral Byrd & three others flew the Ford tri-motor to France

<u>Amelia Earhart</u> & Wilmer Stultz flew a Fokker from Newfoundland to England. Amelia became the first women to cross the Atlantic in an airplane

- <u>US Army photographer</u> drop flash powder bombs over Rochester enabling them to take 1st night aerial photographs
- 1927 <u>May 21 Paris</u>: Charles Lindbergh lands at LeBourget 33 hrs. 30 min. & 30 sec. after leaving Roosevelt Field, Long Island first solo nonstop transatlantic flight. Powered by Whirlwind engine.

In June *Richard Byrd* & a 3-man crew flew another Fokker trimotor to France, which was the 1st official sack of mail between America & Europe

<u>Alcoa</u> research Edgar Dix introduces Alclad process for fabricating aluminum. Non-corroding airplanes soon take wing

National Air Transport & the Aeronautic Branch tested aural radio ranges at Bellefonte. First Radio Beacon commissioned & began the era of true air passenger service Clarence Chamberlain takes aircraft owner Charles Levine & flies non-stop to Berlin from Roosevelt Field; 1st passenger to cross the Atlantic & new distance record set Flight lasted 42 hrs. & 45 min. was 9 hrs. 15 min. longer than Lindbergh's a Paterson built Wright-Bellanca monoplane with a Whirlwind. This was done two-weeks after Lindbergh's historic flight.

- <u>Lt. Albert Hegenberger</u> & Lt. Lester Maitland makes first long-range Pacific crossing (Oakland, CA to Honolulu in an Atlantic Fokker C-2 Bird of Paradise using dead reckoning
- 1928 <u>Five feet of snow</u>, 18 degrees below zero, 32 men worked in October to light the "Great Salt Desert" portion of the Transcontinental route, the Collier Trophy was awarded <u>First solo</u>, round-trip transcontinental crossing by a woman, Amelia Earhart leaves from Rye, NY to Glendale, CA and returns

<u>Amelia Earhart</u> became the 1st woman to fly across the Atlantic as a passenger in a Fokker trimotor

Newark Metropolitan Airport – opens as the only major commercial airport in the greater NY area, it soon became the *busiest in the WORLD*, a title held throughout much of the 1930's

- Mitchell Field, NY, Lt. James H. Doolittle takes off in a Consolidated NY-2, reverses direction, then returns to point of departure solely by instrument readings
 <u>Link Trainer</u> developed by Edwin A. Link at Binghamton, NY first electro-mechanical flight simulator
 - <u>Captain Frank Hawks</u> flies from New York to Los Angeles in record 18 hrs. 22 minutes <u>Elinor Smith</u> seventeen years old, sets a women's solo endurance record of 26 hours, 21 minutes, 32 seconds in a Bellanca CH Monoplane at Roosevelt Field

<u>First Transcontinental</u> non-stop round trip Nick Marner & Art Walker fly a Buhl CA-6 <u>Special using air to air refueling</u> to travel 7200 miles from Spokane WA to NYC

Cleveland National Air Race took place with lots of women contestants

<u>The first organization</u> for woman pilots the Ninety-Nines is formed at Curtiss Field in Valley Stream, NY

Anne Morrow Lindbergh makes her first solo flight to Hicksville, NY

Two of Aviation's greatest names Curtiss & Wright joined forces forming the Curtiss-Wright Corp. based in Paterson, NJ

- <u>Leaving Lakehurst NAS</u>- the 775' German "Graf Zeppelin" flew around the world in 21 days
- 1930 <u>Charles Lindbergh & Ann Morrow</u> set transcontinental speed record L.A. to NY in 14. hours 45 minutes

Maiden flight of the first Schweizer glider takes place at Peekskill, NY, materials cost \$135.00

Glider pilot Captain Frank Hawks released from Seaplane, Port Washington, NY France's Costes & Bellonte first to link Paris to New York flying east to west First woman's solo transcontinental flight, Laura Ingalls flies a De Haviland Gypsy Moth from Roosevelt Field, NY to Glendale, CA with nine stops.

<u>First Transcontinental</u> commercial service began in New York City and Los Angeles. <u>Ellen Church</u> the first airline stewardess works a Boeing Air Transport flight from Oakland, CA

Cleveland Municipal Airport first in nation equipped with radios between tower &

First Soaring contest hosted at Elmira, NY "Soaring Capital of America"

<u>Anthony Fokker</u> built the largest passenger plane in the world at Teterboro. The F-32 would accommodate 32 passengers in a luxurious cabin.

- 1931 Wiley Post & Harold Gatty fly first single engine aircraft flight around the world, 15,474 miles from Roosevelt Field, NY in the Lockheed Vega "Winnie Mae"

 <u>Dirigible Akron</u> carries record number of 207 persons in flight over New York City

 <u>Charles & Anne Lindbergh</u> fly great circle route from NYC to China for Pan Am World Airways
 - <u>Notre Dame football coach Knute Rockne</u> dies in crash of TWA Fokker F-10A. Public concern over air safety leads to the demise of wood-wing aircraft.
- 1932 <u>Jackie Cochran</u> obtains her pilot license at Roosevelt Flying School, Long Island, after only 3 weeks of instruction. In 1980 she would hold more speed & altitude records than anyone else in the world man or woman.

<u>Airways both lighted & ranged by radio</u>, first passengers that boarded aircraft that were running on a schedule. There were 44 airlines flying the mail & passengers.

All aircraft equipped with 2 way radios

<u>Franklin D. Roosevelt is 1st</u> president to use air travel. After being nominated as the presidential candidate at the Democratic Convention he flies from Albany, NY where he was Governor to Chicago to deliver his acceptance speech.

First modern day airliner

Amelia Earhart- made her preparations for her solo Atlantic flight at Teterboro. *Ed Gorski* was her mechanic & *Bernt Balchen* taught her navigation. Both accompanied her to Harbour Grace, Newfoundland from where she departed to Ireland

Cassay Jones School of Aeronautics was astablished in Navyerk. During WWII the

<u>Casey Jones School</u> of Aeronautics was established in Newark. During WWII, the school produced more than 17,000 Air Corps mechanics & technicians. The school is now the College of Aeronautics at LaGaurdia Airport

1933 <u>First global solo flight</u>. Wiley Post flies 15,596 miles from and returns to Floyd Bennett Field, NY in the Lockheed Vega, "Winnie Mae"

<u>First Flight of Boeing 247</u>, a low-wing, twin engine, all metal monoplanes that revolutionized air transport design

<u>Teaneck High School</u> was 1st in the nation to offer an aviation course. Dozen of boys and girls learned to fly, 1st in a glider flown down the hill in front of the school, then at Teterboro Airport. Most went on to serve as aviators in WWII Atlantic City- Dr. Albert Forsythe with Alfred Anderson became the 1st African

Atlantic City- Dr. Albert Forsythe with Alfred Anderson became the 1st African Americans to fly across the U.S. and 1st to fly to Canada, & various Caribbean Islands

- American Airlines inaugurates sleeper service between New York & Chicago Col. Roscoe Turner flies from New York to Los Angeles in 10 hrs. 2 minutes U.S. Army Air Corps purchases six Link Trainers; also know as the Blue Box, the 1st flight simulator to train pilots for instrument flying.
 Glen A. Gilbert an American Airlines radio operator in Chicago starts "flight following" for American. It grows to include many other airlines in and out of Chicago Italy- Lake Garda, Marshall Francesco Angello flying a Macchi Castoldi MC-72 set speed record of 440 mph at the Schneider Cup seaplane race, an international competition
- that pushes the boundaries of aircraft speed. Early winners only made 100 mph

 Newark, NJ Airline companies organize & staff first air traffic control center. Federal

 Bureau of Air Commerce opens a tower in Chicago the following April

 First flight with the Rolls-Royce Merlin V-12 engine, the most important engine used by the Royal Air Force during WWII powering Hurricane & Spitfire aircraft.

 Pan American's Martin M-130 flying boat China Clipper delivers first trans-Pacific airmail following six-day flight from San Francisco to Manila, Philippines. Passenger

Army planes diverted lava flow in Hawaii by aerial bombardment

Mass flight of 20 bombers completed flight from California to Florida in 21 hrs. 50 min.

Douglas DC-3 introduced, the most popular passenger airplane of its era

<u>Don Luscombe</u> the innovative builder of pleasure aircraft moved his company from Kansas City to Mercer County Airport in West Trenton. The new plant was organized on a production line basis, a revolutionary concept for the aircraft industry

<u>Thor Solberg</u> a native of Norway, became the 1st aviator to fly from NY to Norway. His plane was a Wright Cyclone powered Loening amphibian. *Paul Oscanyan* of Bogota, NJ accompanied Solberg on the 5,300 mile flight. Upon returning to U.S. Solberg established an airport in Readington, NJ where the state's balloon festival is held yearly

1936 First rocket airmail flight made at Greenwood Lake, NJ

service to Asia begins 11 months later.

<u>Aerial traffic report</u> broadcast from the Goodyear Blimp over NYC <u>First practical flight of a helicopter</u>, the German Focke-Achgelis FW-61 (French helicopter pilot Paul Cornu had hovered one foot off the ground for 20 seconds, in 1907 <u>First Rocket Plane</u> to carry 50 times its own weight was launched across Greenwood Lake to Hewitt, NJ

Zeppelin Hindenburg made the 1st regularly scheduled passenger flight between Germany & the U.S. Lakehurst NAS became our nation's 1st transatlantic air terminal. The airship made 10 round-trip flights that summer

<u>Chester Decker</u> 19 yrs. Old of Glen Rock, NJ became the National Soaring Champion in Elmira, NY. At the next meet Decker established a new soaring record of 246 miles from Elmira to Atlantic City in his motor less craft. Again national champion in 1939

1937 <u>The Hiddenburg</u> catches fire, killing 35 people with 97 survivors & ending the era of commercial travel in rigid airships this was the 1st summer voyage May 6

<u>First regular commercial transatlantic</u> airline service in America – Pan American Martin & Boeing Flying boats departed & arrived at Port Washington.

<u>Control of approach & departures</u> became critical during peak times with 50-60 departures or arrivals. Federal ATC was used in Newark, Chicago, and Cleveland. Glen <u>Gilbert became</u> the first chief of the organization.

1938 First non-stop transcontinental bomber flightArmy B-18s from Mitchel Field

Ailine Pat Rhonie becomes first American to obtain an Irish Commercial pilot's license.

She was also the first woman to fly solo from New York to Mexico City and return.

Howard Hughes & a crew of four leave from Floyd Bennett Field, fly northern course for record breaking around the world flight 14,791 miles in 3 days, 19 hrs. & 8 minutes.

A flight plan to California on file, Douglas "Wrong Way Corrigan" flying a Curtiss Robin lands in Dublin, Ireland after non-stop flight from Bennett Field, Brooklyn, NY Berlin to NYC non-stop flight by Capt Alfred Henke.

<u>First Piper J-3Cub</u> produced a name that would become synonymous with light aircraft. <u>Johnnie Jones</u> makes first transcontinental non-stop light plane flight in an Aeronca KCA from L.A. to NYC.

<u>Test pilot Edward Elliott</u> makes first flight of Curtiss XP-40 at Buffalo, NY. Almost 14,000 P-40's will be built before production ends in 1944

1939 <u>First long range aerial reconnaissance</u> – Lt. Curtis Lemay flies 750 miles out to sea from Mitchel Field & intercepted Italian Ocean liner "Rex"

<u>Elimira's Schweizer-Aircraft Corp.</u> oldest privately owned aircraft company in the US is incorporated; originally formed in 1937 as the Schweizer Metal Aircraft Company.

<u>Transcontinental speed record</u> set by USAAF Lt. Ben Kelsey from March Field, CA to Mitchel Field, NY average speed was just under 400 mph.

<u>Pan American Airways first</u> transatlantic scheduled airlines flies NY to Portugal & France in a Boeing 314 Yankee Clipper.

<u>First flight of Lockheed P-38</u> fighter, equipped with Allison V1710 engines, which could function well at high altitudes

<u>Kasumigaura Airfield</u>, Japan, first test flight of the Zero, the carrier-borne Japanese <u>Fighter used to attack</u> Pearl Harbor

AOPA Aircraft Owners & Pilots Association is formed

<u>Marieneke, Germany</u>: first flight of a jet aircraft the Heinkel He-178, with engine designed by Hans von Ohain

1940 Republic Aircraft delivers 9,000 of 15,000 P-47 Thunderbolts which is the largest producers of fighter aircraft. Wildcat (F4F) & Hellcat aircraft were produced by Republic & Grumman for the war effort. First Super marine Spitfire First anti-aircraft defense area set up at Mitchel Field.

<u>First airport to have shops</u> & services for waiting passengers – LaGuardia The Mitsubishi A6M2 Type O Model 11 carrier-based fighter known as a "Zero" was

The Mitsubishi A6M2 Type O Model 11 carrier-based fighter known as a "Zero" was used in the war between Japan and China

Oct. 25 first flight of P-51 Mustang fighter (prototype), which escorted allied bombers over Germany.

<u>July 8, Los Angeles: Boeing 307</u> Stratoliner with a pressurized cabin that made air travel at high altitude possible, debuts with a 12 hour TWA flight from New York. TWA & Pan American Airways flew these aircraft.

Goal to build 50,000 aircraft was set in early 1940 as the U.S. was off to a late start.

- The B-17 weighing sixteen tons grew to a giant of twenty-two ton bomber w/1,200 hp. Curtiss-Wright Corp became the leading builder of aircraft engines & propellers. The Bendix Aviation Corp's Eclipse Aviation Division at Teterboro developed & built electronic starters, sextants, generators, drift meters, voltage regulators & other aircraft instruments. They also had facilities in Hackensack, North Bergen & Little Falls. Aircraft radios designed & developed by NJ technicians at the Aircraft Radio Corp. in Boonton were used by both the Army & Navy. The General Motors plants in Linden & Trenton built more than 13,500 Grumman Wildcat & Avenger fighter planes. Bayway refinery, Standard oil of NJ (now Exxon) developed 100/130 octane aviation fuel that gave allied fighter planes a power edge over enemy aircraft
- 1941 Bombing by the Japanese of Pearl Harbor
- 1942 <u>Pan American "Pacific Clipper</u>" arrives in New York having completed the first around the world flight by a commercial airplane.
 - <u>July 19 Germany Messerschmitt</u> Me 262 Schwalbe, world's first operational JET fighter & the first airplane with a swept-wing design, takes off under jet power. About 300 would see combat, but too late to affect the outcome of the war.
 - Oct 1, Muroc, CA: Robert Stanley pilot's flys U.S. Jet aircraft the Bell XP-59A Airacomet with a G.E. engine copied from British jet pioneer Frank Whittle's W.IX.
- 1943 <u>Jan 13: Germany</u>: First emergency ejection from an aircraft. From the prototype of the Heinkel He 280 V1
 - <u>July 27: Bryan, TX</u>, Acting on a dare Army flight instructor Maj. Joe Duckworth pilots a single-engine AT-6 trainer into the eye of a hurricane twice on the same day. Scientific "hurricane hunting flights begin soon after.
 - Oct. 3: Cleveland, OH: Trailing their German counterparts, U.S. engineers build the first afterburner for jet engines at the NACA's Lewis Flight Propulsion Laboratory in Ohio Six hundred fifty B-17's & B-24"s made first major strike on German V-Weapons sites
- 1944 The Coast Guard flies blood plasma to 100 crewman burned in an explosion aboard a US Destroyer a few miles out of NY harbor, 1st recorded mercy mission by a helicopter.

 <u>Dec 7, Chicago</u>: Convention on International Civil Aviation establishes principle of a nation's sovereign airspace.
- 1945 March, Japan: Hundreds of Boeing B-29's the most ferocious bomber of the war; begin devastating night attacks of Japan's industrial & economic infrastructure.
 - P-80 became the United States Air Force's first Jet fighter
 - <u>August 6 & 9: U.S.</u> using the first atomic bomb bombed Nagasaki & Hiroshima. <u>Major Thomas McGuire</u> of Ridgewood, NJ became America's 2nd leading flying ACE with 38 enemy aircraft to his credit
 - <u>Capt. Bob Lewis</u> of Ridgefield, NJ was the co-pilot aboard the B-29 "Enola Gay" that dropped the 1st atomic bomb on Hiroshima, Japan, thus ending WWII
- 1946 <u>U.S. Civil Aeronautics Administration</u> (CAA) introduces VHF omni directional radio range (VOR) stations, enabling pilots to stay on course by watching a needle on their instrument panel
 - <u>First radar-equipped control tower</u> for civilian aviation demonstrated by CAA in Indianapolis, IN
 - Intercontinental ballistic missile research starts in U.S.
 - Jet propelled P-80 sets non-stop transcontinental record 4hrs.-13 min. Long Beach-NY

<u>Schweizer Aircraft</u> organizes a commercial glider school; still active it's the oldest commercial glider school in the world.

1947 <u>Longest flight</u> by a fighter 4,968 miles Honolulu to NY 14 hrs.- 32 min.

<u>First Supersonic flight</u>- Chuck Yeager breaks the "sound barrier" in Bell X-1

U.S. Air Force was established. The rocket engines that powered the sleek craft was designed & built by Reaction Motors in Denville, NJ. In 1959 the company developed the XL99 rocket motor that propelled the experimental North American x-15 in excess of 4,000 mph. The X-15 was the 1st plane to fly into space.

<u>Howard Hughes'</u> Spruce Goose, the largest airplane ever built (wingspan 319'-11") makes its only flight

First flight of Soviet MiG-15, the intimidating Korean War Fighter.

Two Light, single engine Piper Cub Super Cruisers were flown from Teterboro Air Terminal around the world by *Clifford Evans & George Truman*. They took off August 10 & returned Dec. 10 flying 25,162 miles in 123 days, a feat that had never been accomplished in light aircraft.

1948 Berlin Airlift

<u>DuPont begins commercial</u> production of titanium a lightweight metal that will revolutionize

<u>Commercial aircraft industry operations</u> begin at a major new airport built on the site of Idlewild Golf Course. It was later renamed to John F. Kennedy Airport in 1963 Jamaica, N.Y.

<u>Convair XF-92A</u> is first U.S. jet with a delta wing, a shape that will become standard for supersonic aircraft from the F-102 to the space shuttle

A B-36 completed a 9,300 mile non-stop flight without refueling

C-47 using rocket boosters rescue twelve USAF pilots from Greenland Icecap

1949 <u>Air Force B-50 Superfortress</u> Luck Lady II lands after nonstop round-the-world flight aided by aerial refueling, proving ability to deliver nuclear weapons anywhere in the world

<u>Berlin Airlift ends</u> after delivering 2.3 million tons of food, coal and supplies over 15 months

<u>William P. Odom</u>- flew nonstop from Honolulu, HI to Teterboro Air Terminal in a single-engine Beech Bonanza. The flight was 4,957 miles established the International distance record for a light aircraft.

1950 New transcontinental record Burbank to LaGuardia-4 hrs. -52 min. –Paul Mantz in P-51 Mustang

<u>Late 1950's</u> the age of flight became the *Jet Age* & throughout the nation science turned its attention to the conquest of outer space. Again NJ scientists, technicians & craftsmen were in the front ranks of avionic development. Their workshops were the Bell Labs in Murray Hill, RCA Astro in East Windsor, ITT of Nutley, the Army Signal Corps Labs at Fort Monmouth, the Navy Air Turbine Test Center in Trenton, the Forrestal Center at Princeton, the Bendix/Allied Signal Corp. at Teterboro, Marotta Scientific Controls in Montville and similar research & development centers in the Garden State.

Annual air passenger-miles (10,679,281,000) exceed traveled Pullman (train) car passenger miles (10,225,714,000)

<u>In NACA wind tunnels</u>, aerodynamicist Richard Whitcomb verifies, "area rule", a key to reducing drag, which hampered supersonic jets. Northrop F-5 was on design of this principle

An Arro jetliner flies from Chicago to NYC in 1 hr. 42 minutes

<u>Charles Blair</u> flying a converted Mustang fighter sets NY to London record 7 hrs. 48 min. <u>First Electronic Flight Simulator</u> invented by *Richard Dehmal* of Short Hills, NJ was produced at the Curtiss-Wright Carlstadt, NJ plant.

1952 <u>First flight of a Boeing B-52</u> Stratofortress bomber, cold war icon & star of the film Dr. Strangelove

<u>Johannesburg</u>, <u>South Africa</u> first passenger jet, Britain's de Havilland Comet, inaugurates services from London. A series of crashes in the early 1950's due to metal fatigue leads to a redesign, & forever tarnishes the Comet's reputation.

<u>Pan American Airlines</u> inaugurates first all cargo air carrier service across the North Atlantic from New York to England

<u>Transcontinental light planes</u> record by Max Conrad, L.A. to NY nonstop 24 hrs –54 min.

1953 Paul Poberezny starts the Experimental Aircraft of America EAA

<u>Air Force B-29</u> flies cross-country on autopilot, verifying reliability of MIT researcher-Charles Stark Draper's new inertial navigation system

First flight of F-100 supersonic fighters

<u>Powered by Pratt & Whitney</u>'s fuel-efficient J-57 engine, the YF-100A becomes first fighter to reach supersonic speed in level flight.

1954 First Mach 2 flight

American Airlines DC-7 sets L.A. to NY commercial speed record 6 hrs. – 10 min.

1955 <u>First transcontinental round trip</u> flight in one day. USAF Lt. John Conroy flies a North American F-86 from NYC to Los Angles & return over 5085 miles in 11 hrs. – 33 min. <u>Delta Air Lines</u> pioneers the hub & spoke system for routing flights through a central airport.

First flight of U-2 spy airplane

1956 <u>G.E.'s J-79</u> jet engine propels the F-104 Starfighter to speeds & altitude previously achieved only by rocket planes.

<u>Midair collision of TWA Super 'Constellation</u> & United Air Lines DC-7 over the Grand Canyon kills all 128 passengers & leads to improved air traffic control system. The FAA Federal Aviation Administration was an outcome of this incident.

First Mach 3

First use of computers for air traffic control- FAA taps Sperry-Univac for this use

1957 <u>First transcontinental supersonic flight</u>, USAF Major John Glenn flies from Los Alamitos, CA to Floyd Bennett Field, NY in a Vought F8U in 3 hrs. – 22 minutes. <u>Sputnick 1 was launched by Soviets</u> signals received from world's first artificial satellite

1958 Pam Am flies first Boeing 707 jetliner NY to Paris 8 hrs. 41 minutes

First U. S. Satellite Explorer & NASA established

<u>Michael Strokoff</u> – built the largest aircraft,(YC-134A) up to that time at his Trenton, NJ base- Mercer County Airport

1959 First hypersonic flight & microchip invented

<u>Five Air Traffic Control centers</u> use computers for flight information Charles Fletcher of Franklin, NJ invented, and flew the world's first hovercraft.

- "Take me to Cuba" first series of aircraft hijackings in the U.S. begins when a passenger on a flight to Key West, FL forces the pilot to fly to Cuba.
 Love Possessed is the first film shown as part of regular in-flight movie services offered by TWA (Deutsche Luft Hansa was the first airline to show a film in flight 4/6/25)
 First Man in Space Russian & first American to orbit the earth John Glenn
- 1962 <u>Astronaut Walter M. Schirra, Jr.</u> of Oradell, NJ circles the globe in the Mercury spacecraft for nine hours, 13 min. In 1966, he would again fly in space in the Gemini 6 & Apollo 7 capsules. He was the only astronaut to fly in all 3 original spacecraft.
- 1963 NASA pilot Joe Walker sets unofficial world altitude record of 354,200' in the X-15 rocket powered aircraft

 First Learjet model 23 makes first test flight, inaugurating a brand that would become synonymous with "business travel"

 First Women in Space Russian
- 1964 First flight of SR-71 Blackbird the world's fastest & highest flying production aircraft Two Univac 1218 Computers bring automation to Air Traffic Control in Atlanta, GA. Called ARTS used advanced electronics to tag radar blips with symbols, letters, and number alphanumeric

 Mitsubishi uses American ATC knows how goes overseas as ARTSIII system for installation at two Japanese airports, Hameda in Tokyo and Itami in Asaka

 Beginning of the Vietnam War
- 1965 <u>First Gemini Flight</u>
 <u>Gay Dalby Maher</u> Medford, NJ became the 1st person to fly a helicopter from coast to coast
- 1967 <u>FAA begins requiring Cockpit Voice Recorders</u> in large passenger aircraft. In Sept. the agency publishes new air cabin safety rules, dictating everything from number of exits to stowing of carry-on baggage

 <u>Hugh Dennis Wisely</u> of Kearny, NJ was the 1st American fighter pilot to shoot down two enemy MIG aircraft during the Vietnam War.
- 1968 After a wave of hijackings, the FAA announces that "sky marshals" have begun flying on Florida-bound flights

 Soviet Tupolev TU- 144 is first supersonic airliner to fly, beating the European Concorde by two months

 First C-5 flight
- Boeing 747 jumbo jet with a capacity of 452 passengers makes first flight

 The FAA certifies the first airplane made entirely of composite materials, the Widecker Eagle AC-7

 Apollo 11 landed on the Moon/Astronauts sent live photos from the moon. Month's prior to this landing Russell Schweickart of Neptune, NJ, was 1st astronaut to test the Apollo space suit outside a spacecraft.

 Col. Francis "Gabby" Gabreski retires from the Air Force commanding the 52nd Fighter Wing at Suffolk County AFB. At the time he is the greatest living Air Ace with 34.5 kills during WWII & Korean War.
 - Edwin "Buzz" Aldrin, Jr. of Montclair, NJ was 1st man to land a vehicle on the moon.
- 1970 <u>Gallup poll finds that about half (47%) of American</u> adults have flown on a scheduled airline
- 1971 First mission to orbit another planet, Mars Mariner 9

- D.B. Cooper disappears in Washington state after parachuting from a Boeing 727 with \$200,000 in extortion money. Still history's only unsolved hijacking
- Beechcraft Baron pilot suffers heart attack while making an approach at Shrevesport, 1972 Regional Airport, LA a passenger manages to pull him off the voke, ATC managed to get the aircraft on the ground using ARTSIII approach tool Edwards AFB, NASA F-8 research flight demonstrates a computerized, "fly by wire" flight control system. First put to service in a F-16 fighter, widely used by planes today ranging from airliners to the space shuttle.
- FAA anti-hijacking regulation takes effect, requiring all U.S. carriers to inspect carry-on 1973 luggage & scan passengers with metal detectors First U.S. manned orbital workshop flights (Skylab 1 & 2) Malcolm Forbes- of Far Hills, NJ, flew the 1st hot air balloon from coast to coast
- 1975 Apollo & Soyuz flight
- 1976 Concorde Service begins from France to U. S. or Great Britain
- 1977 Laker Airways pioneers Cut-rate air fares with its Skytrain service from London to NY Human powered aircraft experiments
- 1978 First transcontinental Balloon flight President Jim Carter signs the Airline Deregulation Act of 1978, leading to dramatic fare reduction & a still-ongoing shakeup in the airline business
- 1979 Raytheon Corporation takes over the Beechcraft Company Cyclist Bryan Allen pilots a human-powered vehicle, the 70-pound Gossamer Albatross, across the English Channel Voyager encounters Jupiter
- 1980 Leo Loudenslager of Sussex, NJ became the world's aerobatic champion. He won seven national aerobatic titles
- Newark, NJ: People Express begins cheap passenger service, becomes the 5th largest 1981 airline by 1986, and then files for bankruptcy later that year First flight of F-117A stealth fighter in Nevada First Space Shuttle - Columbia NY tracon handles its first aircraft a Lockheed Electra, ATC later landed over 1200 aircraft from three major NY area airports. Most modern equipment anywhere
- Ruton & Yeager 1st flight of Voyager 1983 First Women in Space in U.S. Supersonic Concorde makes record flight, NY to London in 2 hrs, 56 minutes
- 1984 Kathryn Sullivan of Paterson, NJ, became the first woman to walk in space
- 1986 Executive Jet pioneers the concept of business jet timeshare with its NewJets Program
 - Space station Mir was launched Jeana Yeager & Dick Rutan land their homebuilt Voyager after completing the first nonstop refueled flight around the world.
- Stealth F-117 fighter made its' depute 1987
- First flight of Antovonv AN-225 Mriya transport at 1.3 million pounds the heaviest 1988 aircraft ever built.
 - Around the world in 37 hrs. 8.5 minutes faster than previous records. Record held by 747 Jumbo iets
- 1989 Space probes Magellan & Galileo launched in 1989
- Persian Gulf War & beginning of GPS navigation 1991

<u>First project under the FAA's Military Airports Program</u> –Stewart Airport

<u>Major Marie Rossi</u> of Oradell, NJ, became the 1st American woman to fly in combat during the Gulf War

- <u>Rick Trader</u> of Elwood, NJ (southern half) flew his fragile ultra-light aircraft from NJ to California, and on to Alaska in nine months.
- 1993 Global Position System (GPS) network goes into operation, initially with 24 satellites, revolutionizing global navigation

 <u>Citation X</u> business jet hits Mach 0.92
- 1994 <u>First flight of Predator Unmanned Aerial Vehicle (UAV)</u> Era of pilot less military aviation begins with reconnaissance flights over Bosnia a year later
- 1995 <u>Mooney Aircraft Corporation delivers its 10,000 aircraft</u>
- 1996 Mars Pathfinder lands on Mars & Atlantis docks with Mir
- 1997 <u>First test flight of the half-helicopter, half-airplane V-22</u> Osprey Arlington, TX <u>Mars Pathfinder lands on Mars</u> & International Cassini Space proble launched Lunar Prospector launched, The International Space Station agreement was signed
- 1998 <u>First flight of the high flying Global Hawk UAV</u> reconnaissance aircraft <u>Hubble Space Telescope</u> sends images of planets outside of our solar system
- 1999 <u>First comet sample return mission launched- Stardust</u>
 <u>Colonel Eileen Collins</u> becomes the first woman space shuttle commander commanding
 The Shuttle Columbia She is a native of Elmira, NY
- Airbus begins production on A380 "super jumbo" passenger jet, capable of seating 840 passengers
 International Space Station begins assembly process
 First airport to be privatized under federal privatization pilot project, Stewart Int'l Airport Newburgh, NY
- 2001 <u>Lockheed Martin X-35B takes off</u> vertically, flies a supersonic "dash" then lands vertically at Edwards AFB, CA

 <u>Remotely piloted Helios flying</u> wing sets altitude record (96,863) for propeller-driven airplane in Hawaii
- 2002 NASA/F/A-18 be gins testing Active Aeroelastic Wing (AAW) technology for flight control, a 21st century twist on the wing warping technique pioneered by the Wright Brothers

MATERIAL WAS GATHERED FROM ONE OF THE FOLLOWING SOURCES:

Wm. J. Hughes Technical Center – displays

Aviation Hall of Fame of New Jersey – H.V. Pat Reilly

Aviation 100 Yrs. Celebrating a Century of Manned, Power Flight-Vol. 1

Air & Space Smithsonian Magazine 100 yr. Edition

The Challenging Skies- Years 1903-1966 by C. R. Roseberry

Empire State Aviation Newsletter Winter 2002-2003 Joseph H. Boardman

The Wright Brothers -

AOPA Web page First Powered Flight

Celebrating A Century of Powered Flight- U.S. Centennial of Flight Commission