Glenn Curtiss
Born at Hammondsport NY, May 21, 1878. Died 1930.

The love of high speeds and mechanical devices led the gifted Glenn H. Curtiss of Hammondsport, New York, to become the first U.S. competitor in international air meets and a pioneer in the development of aircraft in the early 1900s. Curtiss began his high-speed career by racing and building bicycles. His next step was to buy and improve one-cylinder bicycle engines. Then, as motorcycles started being developed, he began building and racing them. By 1902, Curtiss was manufacturing customized motorcycles under the trade name Hercules.

Curtiss entered his first motorcycle race in 1902 and although he did not win, his mechanical talents were recognized, and many motorcycle enthusiasts ordered his rugged, well performing machine. In 1903, Curtiss entered two races in two different cities on Memorial Day and won both. The two-cylinder engine that he used to power his cycles soon began to draw attention from motorcyclists and from early aircraft builders as well.

Curtiss continued improving his engines and competing in races. In 1907 at Ormond Beach, Florida, he reached the record speed of 136 miles per hour (219 kilometres per hour) on his motorcycle powered by a 40-horsepower (30-kilowatt), V-8 engine. He began to be called "the fastest man alive."

Thomas Baldwin, a balloonist, saw Curtiss race and recognized how good his engine was. He realized that the engine could work on an aircraft as well as on a motorcycle. He ordered one for his balloon from Curtiss, who delivered a modified motorcycle engine. In 1908, Curtiss made his first flight piloting the new airship, the California Arrow, powered by a Curtiss engine. He was hooked on flying.

Soon Curtiss' reputation for mechanical skill, developing superior aircraft engines, and his love of high speeds attracted Dr. Alexander Graham Bell, the wealthy inventor of the telephone. Bell had caught the aviation bug and had specific ideas for improving aircraft flight performance. He had heard about Curtiss' talents and was hoping that Curtiss could help him test and improve a variety of theories and aircraft. When the two met, they realized they had a lot in common--both their technical aspirations and their interest in helping their deaf relatives communicate better. It was the beginning of a close relationship.

Bell established the Aerial Experiment Association (AEA) in October 1907 to bring bright young engineers together in a creative environment. The AEA, composed of Bell as mentor, Douglas McCurdy, Frederick Baldwin, Lt. Thomas Selfridge, and Glenn Curtiss, went on to build aircraft as a team and test and perfect each other's theories and methods for improving flight performance. One member led the design team for a specific plane, and each one, except Bell, who was too old, piloted at least one plane.

Aerial Experiment Association (AEA) Aerodrome No. 3, the June Bug, in flight with Glenn Curtiss at the controls, summer 1908.

Bell designed the first AEA craft--a 42-foot (13-meter) tetrahedral kite named Cygnet. Selfridge led the second aircraft design team and Baldwin the third. Both were biplanes powered with Curtiss 40-horsepower (30-kilowatt) V-8 engines. The first biplane was named the Red Wing because of the red silk covering its wings. The second was called White Wing because of its white muslin covering. Curtiss made his first airplane flight in the White Wing on May 21, 1908--his 30th birthday. The plane was the first to be controlled by ailerons instead of the wing warping used by the Wright brothers and the first plane with wheeled landing gear in America.

Curtiss led the design and build team for the fourth AEA aircraft. He selected a biplane and used the same 40-horsepower (30-kilowatt) engine as the earlier biplanes. The yellow-winged craft was called the June Bug. After four days of test flights in June 1908, Curtiss had made record flights of more than 3,000 feet (914 meters). The AEA decided that the June Bug, with Curtiss as pilot, was ready to compete and notified the Aero Club of America that it would go after the first Scientific American trophy and its $2,500 purse. Its primary requirements: a take-off by wheels from the ground and a minimum one-kilometer (0.6-mile) flight. On July 4, 1908, in Hammondsport, New York, Curtiss took off but failed on his first try. But just minutes later, after making some adjustments, he took off again.

The June Bug flew for two kilometres (1.25 miles)--twice the required distance. The result: Curtiss won the first U.S. aviation cash prize and the large Scientific American trophy to keep for a year. The flight was photographed, and Curtiss and the AEA received valuable national and world publicity.

In late 1908, Dr. Bell announced that the AEA had achieved its goals in heavier-than-air aircraft research and would disband at the end of March 1909. Curtiss promptly formed a company with Augustus Herring (the former partner of Octave Chanute) and built a new biplane for the Aeronautic Society of New York, the Golden Flier (or Gold Bug). It had a 28.75-foot (8.8-meter) wingspan, was 33.5 feet (10.2 meters) long, weighed 550 pounds (250 kilograms), and used a 25-horsepower (19-kilowatt) inline 4-cylinder Curtiss engine. In July 1909, Curtiss piloted this plane to win the Scientific American trophy again with its cash prize of $10,000.

With its top speed of about 45 miles per hour (72 kilometres per hour), Curtiss was encouraged to enter the Golden Flier in the first international air show to be held that August at Reims, France. With support from the Aeronautic Society, Curtiss entered the competition for its four major prizes. But about a month before the competition, the Golden Flier crashed and was heavily damaged. Instead of repairing it, Curtiss and his team assembled a new craft, eventually called the Reims Racer. Its design was similar to the Golden Flier, but it had a more powerful 51-horsepower (38-kilowatt) Curtiss V-8 engine, a wingspan that was 2.5 feet (0.8 meter) shorter, and it weighed about 150 pounds (68 kilograms) more because of its larger engine.

Crowds came to see him fly--almost 200,000 paying customers and another 100,000 perched on a nearby hillside. And they weren't disappointed. Curtiss won two races at the air show with his Reims Racer. The first was the Gordon Bennett Cup Race on August 28, 1909, with its purse of $5,000 and trophy, which he won with a top speed of 46.5 miles per hour (75 kilometers per hour). The next day, he took the "Prix de la Vitesse" for winning a 30-kilometer. (18.6-mile) race. Curtiss received worldwide press acclaim for his victories. He went on to win three more prizes that summer in Brescia, Italy, including a purse of $7,600.

When the next flying season began in 1910, Curtiss was looking forward to racing again. He and his team built a new aircraft, the Hudson Flier, with a larger airframe and wingspan than the Reims Racer. It housed a 50-horsepower (37-kilowatt) engine and had flotation gear so the craft could land safely on water. He planned to compete for the $10,000 prize that the New York World was offering for flying 152 miles (245 kilometres) along the Hudson River from Albany, New York, to Governors Island in New York City within a 24-hour period. Two landings would be allowed along the way. The flight had to take place by October 1910.

On May 29, a bright Sunday morning, Curtiss took off from Albany. He made one planned landing in Poughkeepsie, New York, and an unplanned one on a large lawn in Manhattan, where he received gas and oil. Three hours later, he circled the Statue of Liberty and landed on Governors Island. He carried the first piece of U.S. airmail--a letter from the mayor of Albany to the mayor of New York City. Curtiss received the cash prize, wide public praise, the opportunity to speak at a banquet at the Astor Hotel, and permanent possession of the Scientific American trophy.

With these successes, Curtiss went on to develop aircraft for transportation and military purposes in World War I, specializing in training, observation and patrol, seaplanes, and flying boats. The second company that Curtiss established, the Curtiss Aeroplane Company, would become the world's largest aircraft manufacturer during the war.

Doug Davis

Doug Davis receiving
the 1929 Thompson Trophy

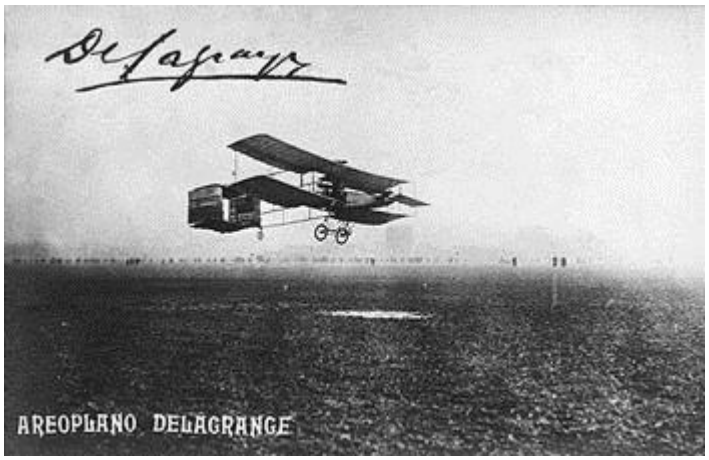
In 1917, eighteen year old Douglas H. Davis volunteered for the United States Army Air Service becoming it's youngest pilot. After World War I, Davis travelled throughout the United States "barnstorming" in a Curtiss "Jenny". Making a name for himself in the aviation industry by performing stunts like dropping Baby Ruth candy bars over Coney Island, Davis, was hired as a sales distributor for the Travel Air Company. Walter Beech, the president and founder of the Travel Air company, selected Davis to pilot the new Travel Air "Mystery Ship" in the 1929 National Air Races. Davis flew the "Mystery Ship" to victory in "Event No. 26", the predecessor of the Thompson Trophy Race.

Leon Delagrange (1873-1910)

Ferdinand Léon Delagrange (1873-1910) bought one of the first Voisins at the same as Henry Farman in 1907. In March 1908 he carried the first passenger in Europe, who was Henry Farman himself.

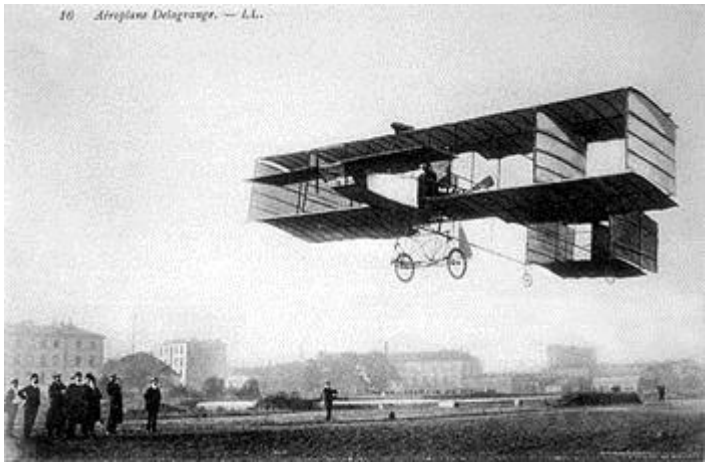
He also took up the first woman to fly, Madame Peltier, in July 1908 at Milan. She took several lessons which culminated in piloting the Voisin solo, but she did not take her interest any further. Delagrange set several distance and endurance records during 1908.

He purchased a standard Voisin in 1907. However he was less technically-minded than Henry and had made only a few modifications to the basic design. Gabriel Voisin remarked that in contrast to Farman, Delagrange "was not the sporting type" and knew nothing about running an engine. Nevertheless a sporting rivalry seems to have developed between the two fliers. Delagrange went south to Italy to demonstrate the art of flying while Farman went north to Belgium. On 23 June Delagrange set an endurance record of 18 minutes, 30 seconds at Milan: Farman retaliated with 20 minutes, 20 seconds at Ghent, on 6 July. On 6 September Delagrange flew for 25km (15 miles) at Issy: Farman bested that with 40km (25 miles) at Champ de Chalons on 2 October.



1910 opened with tragedy, for on January 4th Ferdinand Léon Delagrange, one of the greatest pilots of his time, was killed while flying at Pau. The machine was the Bleriot XI which Delagrange had used at the Doncaster meeting, and to which Delagrange had fitted a 50 horse-power Gnome engine, increasing the speed of the machine from its original 30 to 45 miles per hour. With the Rotary Gnome engine there was of necessity a certain gyroscopic effect, the strain of which proved too much for the machine.

Delagrange had come to assist in the inauguration of the Croix d'Hins aerodrome, and had twice lapped the course at a height of about 60 feet. At the beginning of the third lap, the strain of the Gnome engine became too great for the machine; one wing collapsed as if the stay wires had broken, and the whole machine turned over and fell, killing Delagrange. On January 7th Latham, flying at Mourmelon, first made the vertical kilometre and dedicated the record to Delagrange, this being the day of his friend's funeral.



James Doolittle
Born in Alameda CA, Dec 14, 1896. Died Sep 27, 1993.

James "Jimmie" Doolittle is today most famous for his audacious B-25 bombing raid on Tokyo in the opening months of America's entry into World War II, an attack featured in the 2001 movie Pearl Harbour. But Doolittle's aviation legacy is much greater than this military attack. Doolittle was a true renaissance man of aviation, a daredevil aviator and racing pilot, an aviation executive, a military commander, a scientist, and a presidential advisor. He was also an inspirational figure to many young people in the early days of aviation.

James Harold Doolittle was born in Alameda, California, on December 14, 1896. His father was a carpenter and set off to Alaska in search of gold. Doolittle's mother brought Jimmie with her to join his father in Nome, Alaska, when he was three-and-a-half years old. When he was 11, he moved with his mother to Los Angeles, California, where he developed an interest in flying. He became a professional boxer and entered the University of California's School of Mines in 1915. In 1917 he enlisted in the Army Signal Enlisted Reserve Corps to train as a pilot and was soon promoted to lieutenant. Doolittle served in the United States Army Air Corps from 1917 until 1930, when he became a major in the Army Air Corps Reserve, where he served for the next ten years.

After he learned to fly, Doolittle served as an instructor pilot and began engaging in acrobatics. He started thinking of breaking aviation records. In 1922 he made the first cross-continental crossing in less than 24 hours, taking 21 hours and 19 minutes to fly in his De Havilland DH-4 plane from Pablo Beach, Florida, to San Diego, California, with only one refuelling stop.

In 1923 Doolittle enrolled in the Massachusetts Institute of Technology (MIT) to obtain a master's degree and then a Ph.D. in aeronautical engineering. When he received his degrees in June of 1925, fewer than 100 people in the world held comparable advanced degrees. In his doctoral dissertation, "Wind Velocity Gradient and Its Effect on Flying Characteristics," he combined laboratory data with test flight data to determine that a pilot needed visual aids or instruments to know the direction and speed of the wind and the direction in which the plane was flying. His dissertation countered the theory that many contemporary pilots held that they could "know" this information instinctually.

Over the next several years Doolittle continued his flying exploits. In 1927 he was the first person to execute an outside loop, where the cockpit (and pilot) remain on the outside of the loop (previously thought to be a fatal manoeuvre because of the stresses encountered). Carried out in a Curtiss fighter at Wright Field in Ohio, Doolittle executed the dive from 10,000 feet (3,048 meters), reached 280

miles per hour (451 kilometres per hour), bottomed out upside down, then climbed and completed the loop.

Flying a Curtiss P-1B Hawk biplane, Jimmy Doolittle performs the first outside loop in 1927.

Doolittle was the first person to win all major aviation racing trophies. He won the Schneider Trophy in 1925 for flying a Curtiss Navy racer seaplane equipped with pontoons the fastest it had ever been flown, averaging 232 miles per hour (373 kilometers per hour). In 1931, after leaving the military and going to work for Shell Oil Corporation, he won the Bendix Trophy, flying from Burbank, California, to Cleveland, Ohio, and establishing a new record with his Laird "Super Solution." He crossed the country in 11 hours, 16 minutes, and 10 seconds, beating the record set earlier that year by 1 hour and 8 minutes.

In 1932 he won the Thompson Trophy race at Cleveland in a Granville Gee Bee R-1 racer, averaging 252 miles per hour (406 miles per hour) and established the world landplane speed record. In the early 1930s, he also conducted tests for the Army.

His academic credentials, combined with his aviation exploits and military experience, enabled him to serve as a go-between for scientists and aviators and military officers. He also participated in numerous aviation design contests for youngsters and inspired many of them to pursue careers in aviation engineering. During this period, he worked with the Guggenheim Flight Laboratory in developing instruments for flight in poor weather. On September 24, 1929, he was the first person to take off, fly and land an airplane entirely by instruments. Also while at Shell, he urged the company to greatly increase its ability to manufacture high-octane aviation gas, which proved to be extremely important for high performance airplane engines.

In 1940, Doolittle returned to active duty as a major in the Army Air Corps. He was quickly promoted to lieutenant colonel. Soon after the bombing of Pearl Harbour in December 1941, Doolittle hatched a bold and dangerous plan to launch Army Air Corps B-25 twin-engine bombers from an aircraft carrier to bomb Japan.

General Jimmy Doolittle in 1944. The series of Doolittle raids on Tokyo in 1942 was a public

vindication of his belief that long
range bombing was going to be a decisive factor in the war.

On April 18, 1942, the aircraft carrier USS Hornet sailed toward the Japanese coast. Doolittle's plan was to move to within 450 miles (724 kilometres) of the coast, but a radio-equipped Japanese fishing boat discovered the task force, forcing Doolittle and his men to launch earlier than planned. Shortly after noon, Tokyo time, Doolittle arrived over Tokyo and dropped his bombs. The other planes followed at staggered intervals and also dropped their bombs. Then they all headed individually for China, but because they had been forced to launch early, they were low on fuel when they finally reached the mainland and were unable to find their designated airfields. One plane landed in Vladivostok, Russia, where its crew was arrested and held prisoner for 13 months. Four other planes crash-landed. The crews of the other eleven planes all parachuted out. Of the 80 men on the 16 planes, three had died, four were badly injured, and eight were captured by the Japanese, who later executed three of them and starved a fourth to death. Roosevelt promoted Doolittle from lieutenant colonel to brigadier general, skipping the rank of colonel, and presented him with the United States' highest military award, the Congressional Medal of Honour. He also received the Silver Star and the Distinguished Flying Cross.

Doolittle was soon promoted to major general and then lieutenant general. He was the commanding general of the Twelfth Air Force in North Africa, the Fifteenth Air Force in Italy, and then the Eighth Air Force in England and then again on Okinawa.

After the war, Doolittle returned to civilian life and became a vice president at Shell Oil, where he served from 1946 until 1958. He left to become director of the Space Technology Laboratories and then a director of TRW Inc. Doolittle also served as a director at Shell Oil until 1967.

Although Doolittle's Tokyo raid and his pre-war aviation exploits are well known, what is less widely known is his post-war service as an advisor to the Air Force, intelligence agencies like the Central Intelligence Agency (CIA), and presidents. From 1955 until 1958 he served as Chairman of the Air Force Scientific Advisory Board (SAB), advising the U.S. Air Force on future aviation and space technologies. From 1955 until 1965 he was a member of the President's Foreign Intelligence Advisory Board, evaluating intelligence operations. In 1958 he was offered the position of first administrator of the National Aeronautics and Space Administration (NASA), which he declined. His scientific knowledge, combined with his military record, meant that he could bring together fellow scientists and military leaders to develop new aviation technology, and he had unique insights because of his work in both these communities.

At one point in the 1960s, while visiting a top-secret CIA facility, photo-interpreters showed Doolittle a spy satellite image taken over the Soviet Union that had been stumping them for quite a while. Doolittle took one look at the picture of the large, odd-looking seaplane and identified it as a "wing-in-ground effect" vehicle, a type of airplane that stayed close to the surface, riding on the cushion of air that built up between its wing and the ground. Doolittle's extensive aviation experience and scientific training had allowed him to recognize the unusual aircraft.

An avid sportsman, fisherman, and hiker, he went on frequent hiking trips with his fellow scientists. In 1985, although long retired from active duty, he was promoted to four-star general.

In June 1985, retired Lieutenant General James H. Doolittle became General James H. Doolittle when President Reagan and Senator Goldwater pinned on the same four-star insignia that General George Patton had given him on the occasion of Patton receiving his fourth star more than 40 years earlier.

Doolittle died in 1992. After his death, Howard W. Johnson, former chairman of the MIT Corporation, remembered: "Once when he was asked to sum up his philosophy, he said it was simply a matter of trying to leave the earth a better place than he found it. He certainly did that, and he did it with grace and good humour."

Amelia Earhart

Born Atchison KS, July 24, 1898. Disappeared July 2, 1937

Amelia Earhart, nicknamed "Lady Lindy" because of her achievements comparable to those of Charles Lindbergh, is considered "the most celebrated of all women aviators." Her accomplishments in the field of aviation inspired others and helped pave the ways for those that followed.

Born on July 24, 1897, in Atchison, Kansas, Amelia Earhart's parents encouraged her from a young age to participate in activities usually left to boys, such as football, baseball, and fishing. Their encouragement, watching numerous air shows in Los Angeles, and paying a pilot a dollar for a 10-minute airplane ride all contributed to her decision to become a pilot and join this predominantly male field. After her first ride, she wrote, "By the time I had gotten two or three hundred feet off the ground, I knew I had to fly."

From 1921 to 1922, Earhart was taught to fly by Neta Snook, the first woman to graduate from the Curtiss School of Aviation. In October 1922, Earhart received her pilot's license from the Federation

Aeronatique Internationale. Soon after, on October 22, 1922, Earhart set a women's altitude record of 14,000 feet (4,200 meters) in a Kinner Canary, an open-cockpit, single-engine biplane.

Charles Lindbergh made his record-setting solo flight across the Atlantic Ocean in 1927. One of the people inspired by his feat was flying enthusiast Amy Guest, who hoped to be the first woman to cross the Atlantic. She purchased a plane but her family vetoed the trip. Earhart went in her place and became the first female to cross the Atlantic Ocean. Leaving Newfoundland, Canada, on June 4, 1928, Earhart joined Wilmer L. Stutz and Louis E. Gordon in their bright red Fokker F.VII named the Friendship on their 2,000-mile (3,219-kilometer) trip to Wales. Earhart had no part in piloting the plane during the 20-hour, 40-minute trip and was, in her words, "just baggage," making her even more eager to cross the Atlantic on her own.

In 1929, Earhart co-founded an organization whose goal it was to advance women's participation and opportunities in aviation. Called the Ninety-Nines, the organization was composed of 99 charter members, representing 99 of the 117 licensed women pilots in the United States at the time.

Earhart continued setting records. On July 6, 1930, she set a woman's speed record of 181 miles per hour (291 kilometres per hour), in a Lockheed Vega, a single-engine monoplane. On April 8, 1931, she set an autogiro altitude record of 18,451 feet (5,623.8 meters).

On May 20-21, 1932, Earhart accomplished her goal of flying solo across the Atlantic Ocean. She took off from Newfoundland, Canada, at 7:12 p.m. on May 20, in her Lockheed Vega. Her flight was filled with dangers, from rapidly changing weather to a broken altimeter so she could not tell how high she was flying, to gasoline leaking into the cockpit. At one point her plane dropped almost 3,000 feet (914 meters) and went into a spin (which she managed to pull out of) and flames were shooting out of the exhaust manifold. She brought her plane down on the coast of Ireland after a harrowing trip lasting 15 hours and 18 minutes The flight was the second solo flight across the Atlantic and the longest nonstop flight by a woman--2,026 miles (3,261 kilometres)--as well as the first flight across the Atlantic by a woman. President Herbert Hoover awarded her the National Geographic Society Medal on June 21, 1932, for her achievement, and the U.S. Congress awarded her the Distinguished Flying Cross, the first woman to receive such an honour. Earhart's accomplishment meant a great deal to the entire world, but especially to women, for it demonstrated that women could set their own course in aviation and other fields.

Amelia Earhart surrounded by news personnel after landing in Londonderry, Northern Ireland following her transatlantic flight.

Her next major achievement was to set the women's non-stop transcontinental speed record. On August 24-25, 1932, she flew from Los Angeles, California, to Newark, New Jersey, in a record 19 hours, 5 minutes, flying a Lockheed Vega, also becoming the first woman to fly solo coast-to-coast. The next July she set a new transcontinental speed record, making the same flight in a record 17 hours, 7 minutes.

In January 1935, Earhart became the first woman to make a solo long-distance flight over the Pacific Ocean, flying from Honolulu, Hawaii, to San Francisco, California. This complicated flight in her second Lockheed Vega occurred in adverse weather conditions and demonstrated Earhart's courage as well as her stubbornness. She followed that flight with two more first solo flights--one on April 19-20 from Los Angles, California, to Mexico City, in 13 hours, 23 minutes and the second on May 8, 1935, from Mexico City to Newark, New Jersey, in 14 hours, 19 minutes.

Earhart wanted to be the first of either gender to fly around the world at its widest, close to the equator. She acquired the most advanced long-range, non-military aircraft available--a Lockheed Model 10E Electra. The all-metal, two-engine plane had been reconfigured with extra fuel tanks replacing the passenger seats, allowing the plane to travel farther between refuellings.

Her first attempt at the world flight began on March 17, 1937, in Oakland, California, but ended abruptly with a runway crash in Honolulu, Hawaii, after a tire blew and a shock absorber on the landing gear failed. Earhart decided to repair the damaged plane and try again.

Map of route of Amelia Earhartïs second, and final, world flight attempt, June 1, 1937 - July 2, 1937.

The flight began again on May 20, 1937, this time heading from Oakland to Miami, Florida. But it was plagued with mechanical problems along the way that resulted in further delays. Eventually she and

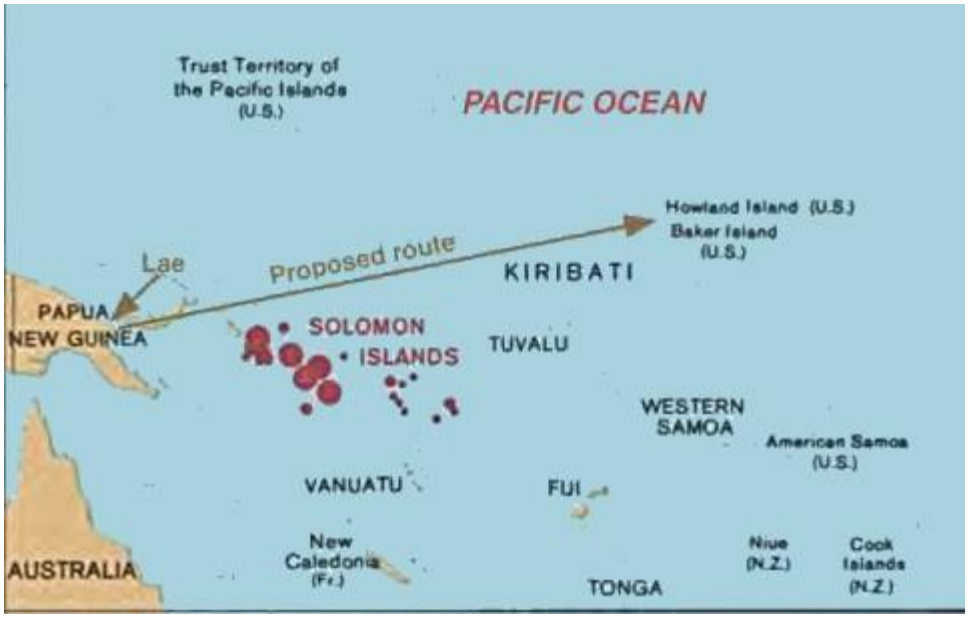
Fred Noonan, her navigator, reached Miami and made final adjustments to the plane's engines and instruments. Finally, Earhart and Noonan were ready to depart.

Amelia Earhart discussing her world flight plans with George Putnam and Fred Noonan.

What turned out to be the final flight of Earhart's career, and, ultimately, her life, began on June 1, 1937. Earhart and Noonan left for their round-the-world flight from Miami, Florida, in her twin-engine, red-winged Electra. From Miami, they flew to San Juan, Puerto Rico. Right before taking off on this leg of the flight, Earhart was quoted as saying, "I have a feeling there is just about one more good flight left in my system and I hope this trip is it. Anyway, when I have finished this job, I mean to give up long-distance 'stunt' flying."

Map of route of Amelia Earhart's second, and final, world flight attempt, June 1, 1937 - July 2, 1937.

As Earhart's journey continued, news of her flight made the front page of newspapers around the world. She sent reports of the land, cultures, and people she encountered. On June 30, 1937, Earhart and Noonan arrived in Lae, New Guinea. They had travelled 22,000 miles (35,406 kilometres) and had 7,000 miles (11,265 kilometres) left to go.



Amelia Earhartïs proposed route from Lae, Papua, New Guinea to Howland Island.

Their next destination, and the most dangerous stop of the trip, was Howland Island, a tiny island in the Pacific Ocean, 2,556 miles (4,113 kilometres) away. Before Earhart took off from Lae on July 1, there was confusion about which radio frequencies were to be used, which remained unresolved before she took off. As the scheduled time neared for Earhart to approach the island, several transmissions were received from her, demanding to know the weather. A new weather report describing heavy clouds and rain northwest of Howland had been issued, and Earhart had apparently run into the storm. Earhart transmitted several more times but never reached her destination, disappearing somewhere off the coast of the island. A large search party was quickly organized, but no remains of the crew and the plane were ever found.

There are many theories surrounding the controversial disappearance of the plane on July 2, 1937. The most commonly accepted theory is that the fliers got lost, ran out of gas, and went down somewhere in the Pacific Ocean. However, as war between the United States and Japan was imminent, there were rumours that Earhart had been on a spy mission for the United States and was supposed to photograph Japanese military installations. This theory says that she crash-landed and was captured by the Japanese, who imprisoned or executed her. A third theory was that her disappearance was staged to allow the U.S. Navy to conduct a search in the South Pacific.

Although only 39 when she disappeared, Earhart accomplished a great deal and is considered a true hero of the 20th century, especially for women. She demonstrated courage, integrity, and an independent spirit. She used her fame to advance the cause of women and showed that a determined woman could achieve anything. Her efforts led a generation of women to seek new horizons and new roles for themselves. It is also probably true to say that she represented the triumph of spin over real skill and preparation. Her choice to set off on her circumnavigation with a known drunk as navigator was to say the least ill judged.

Robert A. C. Esnault-Pelterie (1881-1957)

Mr. Esnault-Pelterie made his first flight in the spring of 1907 at his own Aerodrome Toussus-le-Noble (Seine et Oise). He held French Pilot License N.4 (1908). Saw military service in Sapeurs-Telegraphistes Mont-Valerien Paris under Commandant Ferrie's command and made an Officer de la Legion d'Honeur. He was one of the best known early French aircraft designers and had several inventions to his credit.

Gordon Bennet Race, 1909

For the Gordon Bennet Race in 1909 lots had been drawn for the order of start and priority had fallen to the R.E.P. establishment of Robert Esnault-Pelterie.

A dark-haired man of great personal magnetism, he was a graduate of the Sorbonne and a sculptor, engineer, and inventor whose thoughts were often in the clouds.

He had been born in Paris on 8 November 1881 and was the fourth person to obtain a pilot's license in France.

In 1904 he had started to experiment with gliders, and by late 1907 he was making brief essays on a monoplane of advanced design with internally braced wings and enclosed fuselage of steel tubing.

He had also invented a four-bladed propeller and a lightweight motor whose fan-shaped "magic seven" cylinders delivered from 30 to 35 horsepower.

But Esnault-Pelterie's career as a pilot had ended in a crash on 18 June 1908. After that, fearing the effect of his injuries might cause him to make an involuntary movement of the controls, he flew only as a passenger.

Robert Esnault-Pelterie's 'R.E.P 2'

Although his contributions have been obscured by subsequent developments, Robert Esnault-Pelterie continued in Verne's tradition of French leadership in the interplanetary project. Esnault-Pelterie was one of the pioneers of French aviation, whose contributions include the first all-metal monoplane, which he built in 1907.

REP's work culminated in 1930, with the publication of his Astronautics, which constituted a landmark review of the problems and prospects of space travel. A subsequent edition in 1934 gave considerable attention to interplanetary travel, including the applications of nuclear power.

On 15 November 1912, Esnault-Pelterie presented a paper to the Physics Society of France. In one of the first scientific discussions of the problems of space travel, he suggested that atomic energy would hold the key to solving the problem of reaching the Moon and other celestial bodies.

Although long a proponent of nuclear propulsion, by the early 1930s the work of others on the potential of chemical propulsion had convinced him that nuclear propulsion would not be required to accomplish lunar missions.

Esnault-Pelterie's greatest contribution was the publication in 1930 of a book entitled L'Astronautique (Astronautics), which, together with its 1934 supplement, L'Astronautique-Complement, covered virtually all that was then known of rocketry and space flight.

Although Esnault-Pelterie's major interest was theoretical astronautics, he was well aware of the military implications of rocketry. On 20 May 1929, he proposed to French army general Ferrie a plan for the development of ballistic bombardment missiles against which he could imagine no defence. We wrote such weapons could deliver "over several hundreds of kilometres...thousands of tons" of destructive payload, all within a few hours. (He was obviously thinking in terms of salvo firings like the World War II V-1 and V-2 offensives) "Moreover." he added, "the necessary ground installations would not entail great expense and would doubtless be infinitely less burdensome than if it were a question of delivering the same load by aeroplanes."

His proposal resulted in the appointment of ingenieur general J.J. Barre to his laboratories in 1931, which in turn led to work approved by the Commission des Poudres de Guerre at Versailles first on liquid-oxygen-gasoline motors, then on nitrogen peroxide-benzene motors, and one powered by liquid oxygen and tetranitromethane. In October 1931 (during) tests of the last, an accident occurred, causing Esnault-Pelterie to lose four fingers.

In 1934 a study contract was let to Esnault-Pelterie by the Direction des Etudes et Fabrications d'Armement under the general supervision of ingenieur general Desmazieres. There, in addition to liquid rocket work, 80-mm solid-fuel rockets were developed whose application was to have been to accelerate bombs. Elsewhere, the Services de l'Armement Fracaise studied, in 1939, the use of 1,000-pound-thrust JATO units for assisting heavy bombers to take off. Air Liquide, a private concern, worked for a short period of time on a 100-pound-thrust test motor under Air Ministry contract at Champigny and at Seyne. French rocketry continued sporadically, and without conclusive results, until the outbreak of war."

Also, in 1929, Esnault-Pelterie proposed aero-braking: using atmospheric drag to slow a spacecraft for gravitational capture by a planet.

Steve Fossett

Steve Fossett with Richard Branson

Steve's name is synonymous with record breaking. His eight-year quest to become the first person to achieve a Solo Balloon Flight Round the World captured the public's imagination and made him a household name. In July 2002, he achieved his dream at the helm of the "Bud Light Spirit of Freedom" and in-so-doing set an Absolute Round the World Speed Record, a new record for the Fastest Speed by a Manned Balloon and a new 24 Hour Balloon Distance Record.

His reputation as one of the world's most accomplished private jet pilots is founded upon the 10 world records he has set, which include records for U.S. Transcontinental, Australia Transcontinental, and the fastest flight ever in a non-supersonic airplane of 742.02 mph. With co-pilot Terry Delore, Steve has set 9 of the 21 Glider Open records.

Alongside aviation, Steve has made speed sailing a specialty and, since 1993, has dominated the record sheets, setting 21 official world records (14 standing) and 9 distance race records (8 standing).

On the maxi-catamaran "Cheyenne" Steve has twice set the prestigious 24 Hour Record of Sailing, and in October 2001 Steve and his crew set a TransAtlantic record of 4 days 17 hours - not so much beating as obliterating the previous record by a whopping 43 hours 35 minutes - an increase in average speed of more than 7 knots!

Record breaking is Steve's life. And if you want further proof, when most normal people would be preparing for the challenge the Global Flyer will place upon them, Steve broke the Absolute Round the World Sailing Record on "Cheyenne" and before he embarks on his non-stop flight around the world, he's going to have a stab at the Glider World Altitude Record, too.

His resume reads like a history book of the last decade of record breaking. But if you thought record breaking was all Steve does, you'd be wrong. In his spare time he's swum the English Channel, taken part in the Ironman Triathalon, and raced at the Le Mans 24 hours? twice.

Solo non-stop around the World

touchdown at Salina, Kansas

This warm and bright day in Salina, Kansas will go down in history as the day that Steve Fossett set a great aviation world record for speed around the world solo, non-stop and non-refuelled.

After 67 hours and 1 minute of gruelling sleep deprivation and 12 unappealing diet milkshakes, Steve finally touched down in front of an excited crowd of public and press at Salina Municipal Airport at 19:48:56UTC, despite having some very worrying problems earlier in the flight.

At the start of the flight, Steve experienced intermittent failures with the Global Positioning System and then, as the flight continued, fuel readings indicated that the aircraft had lost a significant amount of fuel shortly after take-off. Both of these problems were serious threats to the flight's continuation. It was 'touch and go' at times, but Steve seemed to have luck on his side, with good tailwinds pushing him along across the last leg of the Pacific Ocean.

As Steve exited the cockpit and waved to the crowds, he managed to gingerly stand up and walk even though he, as expected, appeared to be weary and tired. His happiness at completing the attempt and getting back on the land to see his wife Peggy, however, was obvious and his smile said it all.

When asked how he was feeling, Steve remarked: "That was a difficult trip. I mean it was one of the hardest things I've ever done. To be on duty for three days and night with virtually no sleep." Steve added: "I was in control and I think I was able to make rational decisions and didn't make major

errors, which is a great danger when you get this tired." He was very relieved and added, "It happened successfully and on the first attempt."

Despite admitting that he did not sleep at all in the first day and only had half a dozen naps for the rest of the time, Steve said: "I feel great. Well, yes I could do with a shower and I could do with a little sleep, but I really do feel great."

Steve added that he was looking forward to having a real dinner after all those milkshakes.

Of the crowds Steve said: "I do these things because I want to do them for my self esteem and my personal satisfaction, and this is the first time a big crowd has come out to support me on a project and in the records that I do. I think that's a really good sign that all these people share the enthusiasm and excitement for an airplane adventure."

Steve said the record was "the most important aviation record yet to be done, but it's not the last important record...I'm not ready to announce any new projects, but, in fact, I have three projects in planning right now."

Sir Richard Branson, who was there to congratulate Steve immediately on disembarking from the aircraft, gave him a high five and soaked him in champagne. Later Richard, who can now have his watch back, said: "I poured the champagne over him to try and cool him down a bit...he stinks to high heaven."

Of Steve's condition Richard added: "He is wide awake. I just asked him whether he might go back and have a sleep and he said "no I plan to party," so I suspect he'll still be going for another 24 hours."

Richard also maintained that Steve is just relieved to be alive and thought that Steve began to relax and enjoy the flight when he had crossed the Pacific Ocean.

The entire Mission Control team was there on Steve's arrival. Jon Karkow, from Scaled Composites, thanked everyone involved in the project and said: "It's been a real team effort." And when Steve was reunited with Kevin Stass, Mission Control Director, all he needed to say to the man who has guided him throughout the flight was "what a job".

Although the flight has been recognized as the first solo trip around the world by Guinness World Records, it is still to be sanctioned by the National Aeronautique Association (NAA). When it is, it should be recognized as the fastest non-stop, non-refuelled circumnavigation ever.

the Virgin Atlantic Global Flyer (built of course by Burt Rutan of Scaled Composites)

Frank Fuller

Frank Fuller in the cockpit of his modified P-35 after winning the 1937 Bendix race

Frank Fuller learned to fly in 1927. After only 20 hours of instruction, Fuller was issued the first commercial pilots license in Hawaii. In 1932, Fuller became fascinated with the cross country Bendix race. In 1936 he asked Alexander de Seversky to build him a civilian version of the Seversky P-35 to fly in the Bendix race. Seversky took a military P-35 and had the guns taken out and extra fuel tanks added. With his modified P-35, Frank Fuller won the Bendix race in 1937 and 1939.

Roland Garros (1888-1918)

Roland Garros was an early sport pilot, coming second in the Paris-Rome and Paris-London-Paris races. He then made the first crossing of the Mediterranean in 1913. Just before the Great War he won the Monaco seaplane race.

On the outbreak of the First World War, Garros was sent to serve on the Western Front.

Garros realised that he would have more success in dogfights if he could find a way of firing a machine-gun through the propeller. Working with Raymond Saulnier, a French aircraft manufacturer, Garros, added deflector plates to the blades of the propeller of his Morane-Saulnier. These small wedges of toughened steel diverted the passage of those bullets which struck the blades.

Now able to use a forward-firing machine-gun, went out searching for his first victim. On 1st April 1915, Garros approached an German Albatros B II reconnaissance aircraft. The German pilot was surprised when Garros approached him head-on. The accepted air fighting strategy at the time was to take 'pot-shots' with a revolver or rifle. Instead Garros shot down the Albatros through his whirling propeller.

In the next two weeks Garros shot down four more enemy aircraft. However, the success was short-lived because on 18th April, a rifleman defending Courtrai railway station, managed to fracture the petrol pipe of the aircraft that Garros was flying. Garros was forced to land behind the German front-line and before he could set-fire to his machine it was captured by the Germans. After finding out about Garros' invention, German pilots began using these deflector plates on the blades of their propellers.

In 1918 Garros escaped from Germany and returned to active service on the Western Front. Roland Garros was shot down and killed at Vouziers on 5th October 1918.

Today Roland Garros has a tennis tournament named after him although he seems never to have had a connection with this sport!

Louis William Greve

We have included Louis Greve because of his commitment and involvement in air racing during the Golden Age.

Louis William Greve was a prolific inventor, an aviation pioneer, an industrialist and a civic leader. Louis Greve was also known as Lou, L.W. and in the aviation arena many called him "Papa Greve" for his generosity and support.

He was born in Cleveland, Ohio on November 2nd, 1882 to Claus and Clara Greve. In 1900, he graduated from Cleveland's Central High School. Two years later, he went to work in his father's company Cleveland Pneumatic Tool. Claus Greve noticed early on that his son had a great aptitude for mechanical devices and design. Combined with a modest and hard working personality, Lou began his career at Cleveland Pneumatic Tool as an office boy. He progressed to mechanic and continued to learn the pneumatic device field from bottom to top.

In 1931, Louis Greve succeeded his father as president of Cleveland Pneumatic Tool and Cleveland Rock Drill. Other titles he would hold include; president of the National Air Races, president of the Cleveland Chamber of Commerce, director of Central National Bank, president of the American Drop Forging Institute and advisor to the Presidential War Advisory Board.

His father fully supported Lou's innovations and product improvements. In 1903, Lou began submitting the first of his 46 patents. His first patent was awarded in 1904 for his impact tool design, now widely known as the "jack hammer".

Some of his other personal patents include; early automotive shock absorbers (air springs), shock absorbers for aircraft (3), aircraft struts, aircraft shock absorbing pedestals, amphibian shock absorbers, aircraft shock absorbing struts(2) and landing wheel mountings for aircraft. One of Lou's shock absorbers for aircraft was manufactured as the "Aerol Strut". In 1927, Lou sat on a board attached to the bracing struts of a taxiing plane to take motion pictures of the action of the first experimental set of Aerols. This particular landing gear apparatus made take-offs and landings smoother and safer. Aerols would make landings for bombers and military aircraft viable on the limited, unsteady deck space of carriers. The first take-off of a bomber from a carrier at sea was aerol-equipped.

Aerols would become widely accepted and standardized for all sectors of aviation. Admiral Byrd's aircraft was outfitted with Aerols for his flight to the South Pole.

In 1935, the first successful retractable landing gear units were Aerols. In 1929, Lou was appointed to the position of president of the National Air Races in Cleveland. He had played a major role in securing "the races" and he would continue to hold the position of president through 1939. This enterprise would become one of the leading aviation events in the world.

Lou firmly believed that women's increased participation in the field of aeronautics was imperative to aviation's progress and acceptance. In 1929, Lou established the Cleveland Pneumatic Tool Race/Aerol Trophy Race for women pilots. This race was a derby that began in Santa Monica, California and concluded in Cleveland, Ohio. In 1930, the derby began in Long Beach, California and finished in Chicago, Illinois. Today it is also known as the

Women's Air Derby/National Women's Derby and the victor was awarded the Aerol Trophy, named after Lou's patented shock absorber. At the 1931 races, it was established as a perpetual classic free-for-all closed course women's race.

Winners of the Aerol Trophy included; Phoebe Fairgrave Omlie (1929), Gladys O'Donnell (1930 & 1932), Maude Irving Tait (1931), and Mary "Mae" Haizlip

(1933). In 1934, he also sponsored the $25,000 Louis W. Greve Trophy Race. The Greve Race was a high-speed closed course event. All airplanes "ships" were required to have a 550 cubic-inch (or less) engine
displacement. The engine size restriction was implemented to encourage greater speed and efficiency in the lower-power airplane groups. This would also encourage other aviation innovations other than sheer engine size and power.

A victory would be dependant on pilot skill, airplane design and luck.

Winners of the Greve Trophy included; Lee Miles (1934), Harold Neumann
(1935), Michael Detroyat (1936), R.A. Kling (1937), Tony Levier (1938), and
Art Chester (1939).

The aviation arena was a tight knit group of pioneers. Jimmy Doolittle, Roscoe Turner, Amelia Earhardt, Charles and Anne Lindbergh and many foreign aviators were some of the guests at the Greve summer home located at Mentor-on-the-Lake during "The Nationals".

Louis Greve presenting the Putnam Trophy to Florence Klingensmith for Amelia Earthart

Louis William Greve passed away suddenly on February 2nd, 1942 with his wife, Elsie, at his side. Telegrams and letters poured in from around the world to his wife and his three children Janice Roberts, Fred Greve, and Doris

Wagenlander. Cleveland Pneumatic Tool was in the midst of an $8,000,000 expansion to fill WWII war orders, primarily for landing gear.

The Cleveland News Obituary, on February 3rd 1942, quoted Frederick Crawford as saying "Mr. Greve was very thorough in detail and far-seeing in his planning. His was the inspiration, which brought the air races here and kept them going.

Despite his accomplishments, he was completely unassuming". Major John Berry,
who also worked closely with Lou in conducting the races said, " Mr. Greve was one of the most vital factors in the development of aviation. Cleveland and aviation owe a great deal to Mr. Greve".

All individuals involved in the National Air Races were valuable and significant to the development and advancement of aviation. The races were a launching pad for aviation innovation and acceptance. It is important to recognize the contributions of the companies, civic leaders, organizers, pilots, designers, sponsors, volunteers, and patrons. Many pilots lost their lives. They were brave visionaries with a passion for flight. May they rest in peace and forever be remembered for their heroisms and contribution.

Note: The Western Reserve Historical Society (Crawford Museum) Library in Cleveland, Ohio holds the National Air Race archives, donated by managing director, Mr. Clifford Henderson.

Researched and written by Elizabeth (Betsy) Kidd
E-mail - FlyRight65@aol.com -

Jimmy and Mae Haizlip

After World War I, Jimmy Haizlip enrolled in college and started a flying service to help with expenses. There he met Mae, a flying student, and fourteen days later they were married. Soon the two were flying on the air race circuit. In 1932 they both piloted the Wedell Williams 92, Jimmy won the Bendix race and Mae placed second in the Cleveland Pneumatic Tool Company Race for Woman. Later Mae set a new worlds speed record for women in the Wedell Williams 92.

JAMES G. HAIZLIP
PACIFIC PALISADES, CALIFORNIA
April 27, 1980

Mr. Henry Haffke
Vineland, New Jersey 08360

Thank you for your letter of April 17 and the fine photo of your flying model of the Gee Bee Racer. It is a beautiful replica and looking at it takes me back to those days many years ago at Cleveland and Springfield when a few of us were in and around the original full-scale articles. Reading of your childhood I am tempted to reminisce at length about the first time I met the Granville Brothers and their sponsors, the Tait Family; one cold damp Sunday afternoon at the original Springfield Airport in May of 1930 when I had been requested by our Eastern Division of the Shell Oil Company to represent the Company by flying our Shell Travel Air Mystery S in the coming week's New England Air tour. During the next eight days I became well acquainted with the Granvilles, especially Zantford who was nearer my age, and Lowell Bayles who, at the time, was emerging into a pretty sharp pilot. Since from your account you were in the three-year old age bracket at the time much of the detail of that event must have escaped your notice. Some good write ups of the day-to-day activity appeared in the Boston Transcript of that week, written by one of their better reporters who accompanied the Tour. For my part, I returned the little Travel Air to our home base at St. Louis, but continued to meet Zantford and his brothers at the Cleveland and Chicago air races during the next three years.

About my brief but memorable experience flying the Gee Bee No. 7; were I to repeat my introductory flights in the light of what I learned later I'm sure the outcome would be different. Unmistakably, it was a good airplane. I can see now that had I been less sure of myself in believing that I could jump into a strange single seater with slightly less than what we regarded conventional configuration, and start right away demonstrating sideslip landings over obstacles, the airplane and I would have had a longer and less embarrassing association.

Actually, by the time I was making my third landing that warm windless July morning at Bowles Agawam Airport after ferrying No. 7 up from Roosevelt Field, Long Island, where Russell Thaw had left it. I had adapted, so I thought, to the slight handling differences the other experimental racers that I had flown, and was prepared to shoot a few more landings of the kind I might have to make should it

be necessary to get into a short field.

I had been on the ground at Burbank Airport the summer before and watched Lee Gehlbach make four passes at the north/south runway before almost overshooting on his final landing. That scene had lingered in my mind and I think that a bit of cockiness on my part prompted me to try to prove that all that space wasn't necessary just to land. My considerable flight time in the Travel Air S in the summer of '30 and my Wedell-William, experience two years later spliced on to many dozens of sideslip landings with Nieuports and Moranes during the war years in France, made me a devotee of that form of getting a small airplane into a short field. My short stature made a sideslip a good way to have a clear look at the ground right down to the last few feet below the wheels. The essential move at the last before touch down was to rudder into any drift resulting from the sideslip so that both wheels (and the tail skid, in the case of a three-point landing) would be moving straight with the ground racing below. That was a carry over from the days of no brakes with which to correct a possible ground loop.

This time at Springfield, I decided to use the least possible length of field for this particular landing. The no-wind condition would be a good test. My big mistake, as I relive the moment was that I hadn't practiced stalls and a few kicks back and forth without the trailing edge flaps. Those had been recently installed when the Wasp Junior had been replaced with the big Wasp. As I've told on more than one occasion, everything went smoothly over the boundary trees, with the airspeed comfortably above stall and the airplane and I were speeding just above the sod at an indicated 110mph when I gave a final and maybe too vigorous kick to the right rudder to correct the last leftward drift.

Had the airplane and I been a few thousand feet up I would have just had a momentary surprise and would have set about to learning some more of its unique characteristics in a nose high stall. But. like poor Russ Boardman in No.11 at Indianapolis, we were too near the ground for such a sudden surprise.

The rest is history: an all too short one at that. The sequence as I recall it was that with the wheels no more than two feet off the ground the left wing tip slapped the turf with enough force to jerk the whole airplane sideways. The forward ground speed, still at least 100mph, snatched off both landing gear struts then the right wing. By this time the propeller and engine dug in and tumbled the rest of the wreckage into a forward somersault This disposed the entire empennage, the fuselage, gallons of fuel and a cringing pilot came to rest on the right side blocking the little access door. During the sequence I hadn't been able to reach the ignition switch, so my immediate preoccupation was getting clear before the fuel might flash. The space directly behind the pilot's seat was an open array of fairing strips like the top of a large unfinished willow basket. When I popped the transparent canopy overhead to go out that way, I couldn't squeeze through until I unstrapped the three parachute straps and went out clean.

After a short dash to be in the clear in case of fire, I took stock of the results. I had one scratched elbow where I'd braced my bare arm against the side of the cockpit, and a small nick in my forehead where the flap control crank below the instrument panel had met it as I ducked for cover. The instrument panel, by design placed far enough forward to miss the pilot's head, hadn't touched me. A three inch welt across my thighs like a heavy sunburn gave proof to what had held me in the saddle. But as the fellows dashed down from the hangar almost a half mile away, it was a terribly crestfallen pilot that had to tell Zantford Granville that he didn't really mean to bend his nice airplane.

My wife's experience with one of the smaller Gee Bees was confined to one race at Cleveland in 1931. Zantford came to us hurriedly one afternoon and asked if Mary would fly one of their airplanes in a Woman's Race. We were across the field from the starting line and the race was due to start in

less than ten minutes. One of the boys taxied the Gee Bee across while we went by car. I showed Mary the ignition switch and the throttle and reminded her that after the race there was plenty of fuel to fly a little familiarization before landing which it turned out she didn't need. She placed in the race ahead of the other identical Gee Bee and turned the airplane back to the Granvilles in perfect condition. That year she had competed in seven different race events for women and had flown six different airplanes in them including one of her own that she flew in the Coast-to-Coast Derby. In all the contests she entered she placed either first or second to the delight and admiration of the other airplane owners.

Summing up the little bit I learned about the senior Gee Bees, I'd say that they were remarkable examples of forward looking design, but because of the unusually large diameter fuselage in proportion to its length, it had stall characteristics that merited more study than the urgency of the times and the availability of funds permitted. In those days of un-subsidized experimental aircraft development, the builders working most of the time without precedent or example to follow had to have more than the genius that some like the Granvilles and Bob Hall displayed. They needed pilots who could keep up with the advanced designs, since a pilot, no matter how willing had no simulator to practice on before he tried the finished article. Whether he would admit it or not he was constantly having his experience and skill challenged.

Altogether, it was stimulating and fun when you could win, and for those of us who have survived, a pleasant experience now that it has been mellowed by time.

Mary and I wish you the best for your Gee Bee book and if I can be of further assistance (within the limits of the time at my disposal) let me hear from you again.

Sincerely,
James G. Haizlip

Harry Hawker

Harry George Hawker.

Harry George Hawker, the second son of a Moorabbin blacksmith of Cornish blood was born in a small rented terrace cottage in Wickham Rd., on January 22, 1889. When he was born, John King and his wife Deborah, the original settlers of the Moorabbin district were still living on the land which they had pioneered as the first white settlers to take up residence.

Australia itself had only been established 101 years and already there was a new era which in turn heralded a crisp challenge to a coming generation to face up to the machine age. Harry Hawker although still a schoolboy was ever eager to accept that challenge so much so in fact that he

disregarded the essential pre-requisite of a sound primary education.

His first tuition was gained at the Worthing Road State School, Moorabbin, but the depression coupled with his own lack of interest in basic education saw him move to another three schools in the six short years of learning that represented the only schooling he was ever to enjoy. The fourth and final school that he attended was at Brighton and it was from here that this lad with the great mechanical mind finally decided to abscond from school for all time to accept five shillings per week from the motor firm of Hall and Wardens at a time when the adult wage had reached an all time high at six shillings per day. But to Hawker a paid job in the field of mechanical engineering was all that mattered.

Moorabbin State School at Worthing Road, C1910.

He became known through the local districts as a man who could set the most stubborn of motors in action within a very short space of time. The monetary reward was excellent but success as it was later to be proven always brought restlessness to Hawker who was ever eager to improve upon his immediate lot.

The automobile trade has been a valuable one for him. It had been the means of gaining jobs outside his normal employment hours. He had no fears about leaving the trade as he could always come back to it, but to become an aviator in his own country – the thought was almost laughable.

In 1910 an aviation event which stirred the air-minded people of the whole world – caused a restlessness amongst the keenest of the keen that was hard to overcome. It was the London to Paris air race. In London the great pioneers of world aviation, first known as aeronauts and later as aviators, assembled to prepare for the first massed attempt at crossing the English Channel by heavier than air machines. England became the centre of attraction of thousands of would-be British flyers, including many Australians, who realised the hopelessness of waiting for the new mode of adventure to reach their own shore.

Hawker believed that in England he would soon learn to fly and the young man of scarcely 22 years of age left his native shores hoping of success in the new sphere and perhaps at the same time wondering if he was doing the right thing. With three other Australians, Hawker arrived in England in May; and in the spring of 1911, he felt the need for a holiday more urgent than of the task of looking for work. However when after a short rest he foresaw the difficulty involved, he regretted having taken the break, as the employment position was not what he believed it to be. As he was to find out later

the problem that facing him was a general one which also confronted the English mechanic as well as those from various parts of the globe.

The position was created by the enthusiasm of England's own youth who were already working as motor mechanics and were lining up at airport employment offices eager to break into newer mechanical field. Anyone without references just did not stand a chance and Hawker, 10,000 miles from home, had not the word of one referee in writing. Then as he moved from one workshop to another, first in the aircraft industry and then in the motor car trade, he began to realise what his neglect was costing. Without documentation, he couldn't even get a trade test let alone a job.

One of his main disadvantage s was that by this time he was an adult and as such his services were more costly to the employer. As an 'unknown' he was considered a risk and what was needed was someone to explain, how his ability had always kept pace with the remuneration he received for his services at home and, with a pool of employers only too anxious to place him on the payroll. But towards the end of July 1911, when he had fully made up his mind to return to Australia, he received an offer of steady employment from the Commer motor firm and decided to postpone the plan.

By February 1912, things were again improving through a new job at the Mercedes Company at two and a half pence an hour more. Next thoughts were 'should I go home as planned or spend the money I have on flying lessons?' Later an invitation came to visit the foreman of the Austro-Daimler Company. This led to a better position again than his previous one, although he had still to break into the somewhat exclusive aircraft industry.

The temptation to return to Victoria as a top rate mechanic presented itself but was overwhelmed by another urging him to stay on until the opportunity to enter a cockpit presented itself. That opportunity came to him per medium of the Sopwith Aviation Company at Brooklands early in the summer of 1912 after he had been advised by a friend to call on Mr Sigrist at the company's airport hangar. Actually the Sopwith Company had a work force of 14, and Hawker became the fifteenth member. The business of the company centred around a flying school and the building of the Howard Wright biplane, but to Harry Hawker it was the opening of a complete world of aviation.

Harry Hawker was employed as a mechanic with the small Sopwith company and scarcely had he been placed on the payroll when he began lessons in flying as a pupil of Sopwith, his employer. He paid for his tuition from £40 which he had managed to save from wages during the time he had been employed by the various automobile manufacturers. Hawker was an outstanding pupil who was ready for solo four days after receiving his first lesson.

Here was a natural pilot who had learned so much from merely watching others take their machines into the air and land them at Brooklands that everyone came to him quite readily, and in September he was granted his flying ticket. Then within a matter of days he was giving instruction to other newcomers to the craze and gaining success as a tutor. But like all routine practices, that of flying instructor soon became a bore to Harry once he had recouped the cost of his own lessons, and he was again in search of adventure, this time in the form of competitive flying.

The British Empire Michelin Cup was his first attempt in this field. Taking advantage of the calm atmosphere Hawker glided his machine gracefully but carefully in order to maintain the greatest possible altitude, then, drifting into a side slip, the plane into a banking exercise to the renewed sound of the clattering airscrews and motor, only to be silent again and repeat the previous act.

The Sopwith Company men had gone to the trouble to rebuild the American Burgess-Wright biplane which had had a twin propeller, and to modify it to their own design in order to meet the competition

requirements. He had to stay aloft as long as was humanly possible. After eight hours and 23 minutes after take-off the casual, smiling pilot lifted his frame from the cockpit as the new duration flight champion. He had gained the Michelin Cup No 1 and won the £500 prize money. Hawker had shattered the record.

Despite the fact that Hawker had left school at the age of 12, he managed to gain his ambition to become an aviator. After suffering the hardships that meet the technically unqualified he reached another goal, but still his mission was far from complete in that he wanted to fly his machine high above the trees and farms that flourished in his native soil in the Parish of Moorabbin.

Hawker was fully convinced that the aeroplane had a definite future but there was still a lot of others, important people like heads of government and those with capital to finance production who were sceptical about the whole idea. Too many ordinary people, even among his own admirers, regarded the machine as something of an aerial bicycle on which the rider performed his feats in the sky instead of at a velodrome.

With the offer of prizes now being made Hawker saw the means of making flying a paying proposition. Geoffrey De Havilland's endurance record of 10,650 feet was his first target in this new plan to prove the ability of his machine. The £50 offered by the Brooklands Automobile Club as a prize to anyone who could go higher provided the incentive to meet the challenge.

Hawker climbed into the Tractor Biplane (another of Sopwith's products) and the aircraft rose into the calm wind of the day and circled above the heads of the crowd. When it finally landed there alighted the new solo height champion, Harry Hawker, with 11,451 feet to his credit. But it was not good enough for Harry. He was soon to be seen taking off with a passenger whom he took higher than he had gone solo. He later followed up by taking two passengers to another record breaking effort, then in July of the same year four men rose to a height of 8400 feet with Hawker again at the controls.

That was good enough in any man's book, it had proven beyond all doubt that given the correct design and power to match it, an aircraft could extend itself beyond the one-man carrying stage and lift a good number of passengers safely having at the same time ability if required to rise in inclement weather to the safety of a higher altitude.

More than two years passed since his arrival in England and now that his mission had been achieved Harry George Hawker felt the need to return to his native Australia and the Parish of Moorabbin where he had planned to make his first flight in his own country. He had funds – enough to buy his own aircraft to crate back to Melbourne, pay his fare and keep himself until orders for machines from Australians could perhaps set him up in business in Victoria.

Hawker was met by friends soon after the 'Maloja' had berthed and was taken to the St Kilda Town Hall, where he was greeted by the Mayor of St Kilda and citizens and councillors from St Kilda, Brighton and Moorabbin. After the reception the aviator had one thought uppermost in his mind and that was to again experience the thrill of flight, but first of all the Sopwith was scheduled for a ground display at the C. L.C. Motor and Engineering Works in Melbourne. Then came the long awaited flight over Melbourne's suburbs, the first of which began from a paddock in New St., Brighton, as a solo test flight, but eventually took in an aerial display over the whole of the Parish of Moorabbin, which included the City of Brighton and the Shire of Moorabbin.

The first flight was intended to be something of an unofficial take-off and landing in the shape of a 'circuit and bump' affair but by the time that Harry had carried out a ground run to check his 'revs' people were beginning to gather in anticipation of a flying performance and Hawker was not the kind

to ignore their interest. Climbing to about 1000 feet he circled the near vicinity, intending to land, only to see the pupils of the Sandringham State School in the south assembling in the playground to greet him, so with a swift bank at about 200 feet, the plane swooped low over the school with the pilot's arm clearly visible returning the waves of the teachers and the pupils. Further south again, the Mordialloc State School was ready and received the same exchange of greetings.

Never was a welcome more sincere and never was one more appreciative. There was not a school nor a home nor a farm or business premise where the occupants did not turn out in force to greet the successful aviator. What was to be a five minute circuit and bump test flight ended after 50 minutes of furious waving.

After the exchange of greetings came the business side of the adventure and the triumphant airman found no difficulty, as he turned his attention towards barnstorming, in bringing in passengers at £20 at a time.

On February 7, 1914 a Saturday, Hawker had signed himself up to a promoter, Albert Soulthorpe, of Swanston Street, Melbourne, to give 'a public display of aviation at Caulfield Racecourse or other suitable grounds'. Proceeds were to be equally divided between the promoter and the aviator. Again the Moorabbin people turned out in full force, but only to become insignificant in their numbers against the thousands who arrived from other parts of the metropolitan area and beyond.

Harry Hawker's plane the Tabloid Sopwith on the Elsternwick Golf Course. In the foreground is Harry's father, George. 1914.

The following Friday was in fact Friday 13, but it was not regarded as unlucky by Harry and his intended passengers. It was a V.I.P. day for Hawker and the plane with 'SOPWITH' boldly printed along the fuselage. One passenger was the Minister for Defence, Mr Millen, who thereby became the first Australian Defence Minister ever to go aloft. He was of course suitably impressed, but recorded no comment that was strong enough to bring forth aircraft orders on behalf of the Commonwealth Government.

Hawker could not wait. He had to be back in England in time for the flying season which would reach its height in June, and after a few short weeks in Australia he was off on the return journey. At Caulfield everything was back to normal, although it has since been noticed that there is a bent lightning conductor on the tower of a convent, which a number of people say lost its straightness when Hawker's Sopwith struck it on a landing approach.

The Sopwith ‘Tabloid’ as the plane which Hawker brought to Melbourne was known, was produced at the Kingston factory of Sopwiths for the first time in November 1913, and in bringing it to Australia, Hawker was giving his people the opportunity to see the very latest in aircraft design. But there was something very special about the ‘Tabloid’ in that it was to prove a point that eventually led to the biplane being produced in preference to the monoplane for a number of years to follow. It was Hawker who proved by looping the loop in the Sopwith ‘Tabloid; that in the long run biplanes were more manoeuvrable and (when properly designed to the correct wing stagger) were also faster.

It was largely due to the ultimate proof presented by Harry Hawker that World War I was fought with biplanes rather than their single winged counterparts, monoplanes. But in his efforts to prove this theory, Hawker suffered a permanent injury when looping the ‘Tabloid’ with the motor idling. In one of a series of loops designed to test the machine to its utmost, the airframe stalled and went into a tailspin to land with a clumsy thud among the trees adjacent to the aerodrome. Harry suffered a back injury which although only appearing to be slight at the time, gradually became worse during the few years of life that followed.

But the war was close at hand and Hawker became the chief test pilot of the Sopwith group. This was his wartime occupation and three months before the cessation of hostilities the name of Harry George Hawker appeared in the Birthday Honours list as a Member of the Order of the British Empire. The citation referred to his work in the development of a number of aeroplanes such as the ‘1 ½ Strutter’, the ‘Camel’, the ‘Pup’, the ‘Triplane’, the ‘Dolphin’ and the ‘Snipe’.

Mr Tom Young, the Mayor of Moorabbin, Cr H Stevens, Mr Arthur Saunders, Mr Harry Hawker, Mr Tom Sheehy, Messrs Bill and Bob Chamberlain and Mr Leo Whelan with a propeller believed to come from plane which Hawker flew at his demonstration over Caulfield race course, 1966. Leader Collection.

In the ‘Atlantic’ a Sopwith plane, Hawker set out with Commander Grieve in Newfoundland to fly the Atlantic. The ‘Atlantic’ was a single-engine biplane with 350 horsepower Rolls Royce engine weighing 850 lbs. The all up weight of the plane was 2850 lbs and it had a maximum speed of 118 miles per hour.

Frustrated by bad weather, which delayed the flight from the very beginning, Hawker and Grieve decided to chance the elements on May 18, 1919, after a seven weeks’ wait for improved weather conditions. Before leaving Hawker saw reason to exchange the four-bladed propeller for one with two blades, and after take-off he also dropped the under cart, the idea being to reduce the load as well as

cut down the air resistance. But predictions went astray and the inclemency of the day sent winds from the north instead of the anticipated north-easterlies. Thus they were blown 150 miles off course; ‘fog, cloudbank and ice formation on the wings added to the dilemma of the trip’; then an over heated radiator forced them to fly in search of a ship with a view to ‘ditching’ the machine. A two and a half hour search found the ‘Mary’ which was bound for Lentland Firth from the Gulf of Mexico, and Hawker set down on the sea about a mile in advance of the ship and awaited rescue.

There seemed to be a jinx on Hawker as far as prizes offered by the Daily Mail were concerned. Just as misfortune had cost him the chance of winning the prize for the flight around England in earlier years, history had repeated itself in the Daily Mail £10,000 Atlantic offer. Hawker might well have waited for better weather conditions when he arrived at the flying base near St Johns aboard the S.S. Digby had it not been for the British pride that was part of his make up. Two days before he decided to set out on his venture he had been informed of three American flying boats, the NC1, 3 and 4, having left Newfoundland and arriving at Portugal. He accepted the American rivalry as a challenge and took off prematurely, only to become reported as ‘missing at sea’ while the American NC4 in the meantime went on to claim and win the £10,000.

The evening paper on Sundays was the ‘Sunday Telegram’, and through its columns England learned of Hawker’s safety. The ‘Mary’ had picked up Hawker and Grieve, but had left the Sopwith to the mercy of ‘Davey Jones’, and perhaps it was adding insult to injury that the Americans picked up the floating ‘Atlantic’ and carried it aboard ‘Lake Charlottesville’ to Falmouth. In the meantime Hawker was transferred to a British destroyer as a guest of the Royal Navy. Leaving the ship with it reached Scotland, he and Grieve began their train journey to London which began with massive crowds turning out to cheer them on their way. Later in May both the airmen were called to Buckingham Palace where King George V, a keen admirer, presented them with a new award, as jointly they became the first recipients of the Air Force Cross.

But with the war over there were difficult times ahead for the Sopwith Company, which in 1920 went out of business. Hawker’s name came into prominence when, with the aid of his former Sopwith colleagues, the H.G.Hawker Engineering Company was formed. Hawker filled in his time during the next few months by participating in motor racing events as well as flying. But on July 12, 1921, the tragedy that shocked an empire came suddenly when a Nieuport ‘Goshawk’ in which Hawker was flying caught fire in the air. Hawker remained skilful to the end. Although badly burnt he managed to extinguish the fire and was attempting a forced landing when the plane hit the ground and threw him clear of the machine; but with the burns and possibly because of the added injuries he received in impact. Hawker lived for only a few minutes.

Unveiling a plaque to honour Harry Hawker at the Moorabbin Primary School. Cr D Blackburn (left) Mr Wheeler of Hawker de Havilland, Tom Sheehy and Mr Shannon with Alan Biggs, Graeme Wilson, Robert Wheelar, Guy Coape-Smith, Robert Ellis and David Clottu, 1966. Leader Collection.

Frank Hawks

Frank Hawks (1897-1938) circa 1930

Frank Hawks was one of the aviation legends of the golden era of flight. He set speed records and demonstrated new techniques. Through his association with Texaco, he also contributed to the commercialization of aviation

1917
Once a flight instructor at Love Field in 1917 and a captain in the fledgling Air Service, after the Great War, he made his living as a barnstorming pilot, and demonstrated the first in-flight refueling as early as 1921.

1927
In 1927, the Texas Oil Company (Texaco) organized its own Aviation Department to market aviation

products. The division soon ordered its first plane, "Texaco One", a custom built Ford Trimotor (NC3443), delivered in February, 1928. Texaco hired Frank Hawks to advertise the company across the country. He embarked on the tour which he described, in his autobiography "Speed", "In the course [of the tour]. I visited 175 cities, carried 7,200 passengers, and did 56,000 miles of cross-country flying. All of this without a mishap to plane and passengers."

The Trimotor was destroyed in a crash at Floresville, Florida, in December, 1928. Texaco bought a Lockheed Vega, known as "Texaco Five." In February 1929, Hawks flew it from the Burbank factory to New York in 18 hours 22 minutes, a new transcontinental record. Four month later, Hawks and Texaco Five bested their own record by 43 minutes. It flew some 90,000 miles before being lost in a January 1930 accident in West Palm Beach, Florida.

1929
Captain Hawks in 1929 established a record roundtrip flight between New York and California. in 1929 he set a transcontinental speed record of 18 hours and 21 minutes...

1930 - The Glider Flight
He made the first transcontinental glider flight in 1930. he also piloted a towed glider for 2860 miles across the US...

Frank Hawks had recently become interested in gliding when he saw a Franklin glider, "9491," perform at the Detroit Glider Carnival in 1929. When "9491" was still impressing crowds around the country, its designers, R.E. and Wallace Franklin, had begun building an improved model. They offered it to Hawks, who oversaw its completion. Hawks' employer, Texaco, endorsed Hawks' gliding activities because they thought the sport would attract people to aviation. Company officials believed that glider pilots would eventually move to flying powered aircraft fueled and oiled by Texas Company products. Hawks purchased the glider using company funds.

Before the new Franklin glider was completed, Hawks and Texaco had devised a spectacular stunt to stoke public interest in both motorless and powered flight. Hawks planned to fly the glider coast to coast, in tow behind a Waco Ten biplane. During the flight, the glider would land frequently, and at every airfield, Hawks would meet with reporters.

Construction of the new glider. The fuselage was framed by three steel tubes, welded and riveted at both ends. A brake was added to the main wheel. The wings were of fabric-covered wood, both removable for transport. The basic instrument panel consisted of an airspeed indicator, altimeter, and slip/skid indicator. The completely enclosed cockpit included a radio and a telephone. A stylized eagle and the Texaco logos decorated the craft. Hawks christened it the "Eaglet" but it was renamed the "Texaco Eaglet" after the transcontinental flight. The glider's maximum speed was 125 mph, and flight tests pegged the stall speed at 15 mph. Total cost of the "Texaco Eaglet" came to $2,500.

A 500 ft tow rope was selected and carefully tested to be just strong enough, so that it would break before the wings of the "Texaco Eaglet" or the Waco Ten tow plane. Both aircraft could release the rope in an emergency.

Piloting the glider, Hawks took off from San Diego's Lindbergh Field on March 30, 1930. A Waco Ten biplane, "Texaco No. 7," powered by a 220 hp Wright J-5 engine, and piloted by J. D. "Duke" Jernigin, Jr., towed Hawks' glider. Jernigin carried one passenger, Wallace Franklin. They stopped daily for fuel, following the same routine. Hawks released the tow rope when over the airfield, and performed a short air show for the crowd below. Meanwhile the Waco Ten landed and refueled. and waited to hook-up to the "Texaco Eaglet" and takeoff on the next leg. This routine kept ground time to a

minimum, allowing them to keep to their aggressive schedule and meet the large crowds (5,000 - 10,000 people) at the next stop.

Their itinerary included Yuma (Arizona), Phoenix, Tucson, El Paso, Midland, Wichita Falls, Oklahoma City, Tulsa, Springfield (Misouri), East St. Louis, Terre Haute, Indianapolis, Columbus (Ohio), Cleveland, Buffalo, Syracuse, and Albany. The flight ended at Van Cortlandt Park in New York City on April 6. They broke a coouple tow ropes, but otherwise made good time.

During the eight day flight, the pilots logged 44 hours of air time and covered 2,860 miles. They carried twelve pounds of "glider" mail and a palm tree seedling from the city of Los Angeles to the citizens of New York. After a few more flights, they donated the airplanes to the Smithsonian.

1930 - The Travelair Mystery Ship

Frank Hawks (1897-1938) piloting the Travel Air Mystery Ship, NR-1313; and Bill Stout of the Stout Metal Aircraft Company

In the late 1920's the Travelair company built a few "Mystery Ships," racing airplanes whose details of construction were closely guarded secrets. In 1930, Texaco bought the fourth "Mystery Ship" from the Travel Air company, for Hawks to fly in the National Air Races.

"Texaco 13" was identical to the other "Mystery Ships", but included a cockpit full of special instruments for long distance flights, so the ship was heavier than the other three. The cockpit was fully enclosed and almost flush with the top of the fuselage. The racer was painted a Stearman vermilion and white, with a blue stripe separating the red and white. On two occasions he cracked the ship up, one time injuring himself very, seriously. He never did well at the Nationals as his plane was not set up for pylon type racing. However, he raced at the 1930 National Air Races, his "Texaco 13" wearing their Texaco shorter racing wings - race No. 28. This wing switch was made at the factory prior to the races. Hawks entered the Thompson Trophy Race but pulled out of the race on the third lap. A piece of masking tape placed over the gas cap (for streamlining) caused a loss of pressure and the engine would not operate at full throttle.

Even so the "Texaco 13", with Frank Hawks at the controls, did set many long distance records both in the United States and in Europe. then beat his own speed record flying the legenday Travel Air mystery ship Texico No. 13 which now hangs in Chicago's Museum of Science.

He published Speed, his 314 page autobiography, in 1931.

1932

Frank Hawks (1897-1938) in 1932 next to NR12265, with the Texaco Sky Chief logo

Frank Hawks to Amelia Earhart. June 18, 1932. Congratulatory telegram."When you made your marvelous flight I was a pretty sick hombre in Boston and though belated my congratulations are, none the less sincere. Am being honored to be among first to greet you on your arrival . We are all very proud of you."

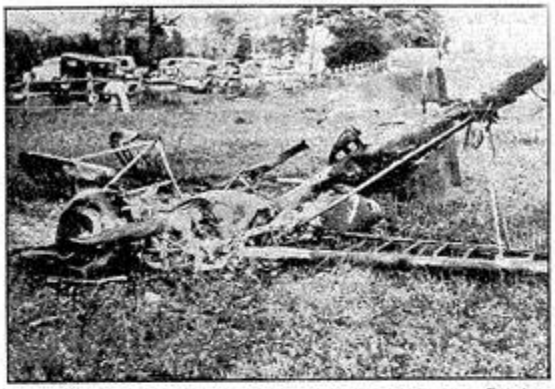
One of the first products of the new Northrop Corporation was the Gamma special-purpose and mail-carrying aircraft. The first two examples built were known as the Gamma 2A and Gamma 2B. The Gamma 2A was built for the well known pilot Frank Hawks and the Gamma 2B was built for the Lincoln Ellsworth Trans-Antarctic Expedition. Each plane had an enclosed cockpit set on top of the fuselage aft of the wings. The two planes were completed in August of 1932. The Gamma 2A was purchased by Texaco on December 6, 1932 and was put at the disposal of Frank Hawks for record-breaking and advertising purposes. It was given the civilian registration NR12265, and flew with the Texaco Sky Chief logo prominently displayed.

1933
On June 2, 1933, Hawks set a west-east nonstop record in his Northrop Gamma, flying from Los Angeles to Floyd Bennett Field, Brooklyn, N.Y. in 13 hours, 26 minutes and 15 seconds, at an average speed of 181 mph.

Commercial Endorsements
He didn't limit his commcerial endorsements to Texaco. You can still find "FRANK HAWKS "AIR HAWKS" CLUB PIN 1930'S" on Ebay. A cereal box prize for budding aimen of the the 1930's...(many members went on to become WW11 combat pilots)...1 1/2 inch span gold metal wings with likeness of famed pilot Frank Hawks in helmet and goggles with legend, "FRANK HAWKS AIR HAWKS" and "Post Bran Flakes"..."It's not too late to join!"....

Hawks was killed in 1938 flying a Gwinn Aircar that many aviation experts considered a far safer aircraft than those that he normally flew.

FAMED SPEED FLIER KILLED



Frank Hawks died several hours after his small plane crashed in flames near East Aurora, N. Y. This is the wreckage of his plane, equipped with all the latest safety devices.

FRANK HAWKS, FAMED SPEED FLIER, IS KILLED IN CRASH

BUFFALO, N. Y., Aug. 24 — (AP)—Death came last night to Lieut. Commander Frank M. Hawks, world famous speed flier, as he had predicted—in an airplane.

The 41-year-old aviator who had turned a year ago from speed flying to the aviation business struck some wires and crashed in flames on a polo field a few miles from Buffalo.

Hawks, who told a friend some years ago "I expect to die in an airplane," and J. Hazard Campbell, upstate socialite and sportsman who had accepted an invitation for a trial spin in a small plane Hawks' company sells, were injured fatally.

Horrified friends, who had watched the take-off from the small field, heard the plane crash behind a clump of trees. They saw a flash of flame shot high in the air.

They pulled Hawks from the controls of the blazing ship and dragged Campbell from beneath a crumpled wing. The injured men were taken to a Buffalo hospital but neither regained consciousness.

Hawks was flying a small Gwinn Aircar, a plane designed for private flying. He carried a four-leaf clover a friend had given him for "good luck" a few minutes before the takeoff.

Edmund F. Rogers, from whose estate Hawks and Campbell took off, described the crash:

OFFERED RIDE TO GUESTS

Commander Hawks landed on our field about 2 p. m. and offered to take myself or any of our guests for a ride. Campbell climbed in first.

"The plane lifted in the air and Hawks tilted it 50 feet above the ground to enable it to pass between two tall trees. As he passed out of sight it looked as tho he had not been able to gain sufficient altitude and was trying to bring the plane down.

"Just as the plane disappeared we heard a loud swish and a flash of flame shot up behind the trees. We knew he had struck the electric wires and telephone poles.

"We ran to the plane and found Hawks inside the burning machine on the seat. His clothes were in fire so we stripped him and pulled him away."

Rogers said Campbell was thrown from the plane and pinned under a crumpled and blazing wing.

The crash had ripped down all telephone and light wires serving the community and Rogers and his friends had to go several miles to summon aid.

HELD NUMEROUS SPEED RECORDS

Hawks established himself as one of the nation's greatest speed pilots about 10 years ago, when he set a record for non-stop flight from Los Angeles to New York.

Then in five years he blazed a trail of records across the United States and Europe that gave him claim to no less than 214 point-to-point records.

Hawks lived in Redding, Conn., and had planned to return home last night. His wife was notified of the accident and left Redding immediately for Buffalo. Hawks died after she left Redding.

Besides his speed records, Hawks had a number of glider marks to his credit. Towed by a plane, he once piloted a glider from the west coast to New York.

Campbell, a director in the Gwinn Corp was active in the East Aurora Hunt. He was the husband of the former Miss Marjorie Knox and a brother-in-law of Seymour Knox, an international polo star.

CRASH VICTIM

Frank Hawks, above, was injured fatally when his small airplane crashed in flames in New York State. He was the holder of numerous speed records.

Lima News, Lima, Ohio, August 24, 1938

Alex Henshaw

Alexander Adolphus Dumfries Henshaw was born on 7th November 1913, the son of a well-to-do Lincolnshire businessman. As a young boy he was presented with the Royal Humane Society Award for rescuing a youth from the River Witham.

Henshaw showed an early affinity for engineering, and arrangements were made for an apprenticeship with Rolls Royce. However, before starting this, he worked for a time as a salesman for one of his father's businesses, and he proved so successful at this that he never returned to the apprenticeship.

While still a young teenager, Henshaw learned to fly in a Gypsy Moth, and soon afterwards with his father's assistance, acquired a Moth of his own, G-AALN. This was followed by a Comper Swift G-ACGL. Only two days after this was delivered, Henshaw at the age of 19 won the Siddely Trophy at the 1933 Kings Cup, thereby starting his racing career in earnest on a highly auspicious note.

In 1937 Henshaw acquired a Percival P6 Mew Gull, formerly ZS-AHM *The Golden City*, in which Major Allister Miller had entered the 1936 Schlesinger Race from Southampton to Johannesburg. Sadly, Major Miller did not complete the race, having been forced to withdraw in Belgrade. The aircraft was subsequently re-registered as G-AEXF, the number that she still carries today.

Alex Henshaw's racing career reached its zenith in 1938, when he won the King's Cup with a fastest time of 236.25 mph. The following year he concentrated his efforts on an attempt to beat the existing records for the point-to-point London to Cape Town flight.

The statistics for the flight which are quoted below were taken from Mr Henshaw's book, *"The Flight of the Mew Gull"*.

LONDON TO CAPE TOWN:	
Total elapsed time:	39hrs 23 mins.
Time Airborne:	30.28 hours.
Distance:	6377 miles.
Average	209.44 mph.

speed:	

This was the fastest time for any aircraft or crew from England to Cape Town. It reduced the existing solo record by 39 hours and 3 minutes.

CAPE TOWN TO LONDON	
Total elapsed time:	39hrs 36 mins.
Time Airborne:	30.51 hours.
Distance:	6377 miles.
Average speed:	206.40 mph.

Alex Henshaw with Sir Winston Churchill after a Spitfire demonstration (From Sigh for a Merlin)

Alex Henshaw meeting King Haakon of Norway at Castle Bromwich (From Sigh for a Merlin)

This was in 1939 the fastest time for any aircraft or crew from Cape Town to England. It reduced the existing solo record by 66 hours and 42 mins. Not only were all Cape Town-and-return records broken but also for every stage en route and remain so in the solo classification to this day. The England-Cape Town-England (12,754 miles) is still in 1999 an all-time record.

Henshaw's book *The Flight of the Mew Gull* provides a wonderfully readable account of this epic achievement.

On 17th February 1940 Alex Henshaw married Barbara, Countess de Chateaubrun. He himself has written of this marriage, which endured for 56 years until Barbara's death in 1996, that it was one of the three great influences in his life - the other two being his involvement with the Spitfire and the Mew Gull.

After the outbreak of war, Henshaw was appointed Chief Test pilot at Castle Bromwich, the largest factory producing Spitfires and Lancaster bombers. As a result of this work, his name has become even more familiar in connection with the Spitfire than the Mew Gull. It was at this time that he met Jeffrey Quill, the Supermarine test pilot with whom he was to develop a close and lifelong friendship. Quill has described Alex Henshaw as "*the last of the great amateurs*" - an appellation with which Henshaw himself is clearly delighted.

This illustration shows Mike Hill's Mk Vb
Microsoft
Flight Simulator 98 model preparing to take off
from a grass strip.

The years at Castle Bromwich are chronicled in Henshaw's first book, *Sigh For A Merlin*, described by RAF News as "*one of the best Spitfire books*".

After World War II, Henshaw worked for two years in Johannesburg as a Director of Miles Aircraft SA Ltd, which was affiliated with the General Mining and Finance Corporation. At this time he became friends with Wing Commander Ian Hay, with whom he still maintains close contact. Wing Commander Hay now lives in Durban, South Africa.

Alex Henshaw receiving the Jeffrey Quill Award from HRH Prince Philip, 1997 (From The Flight of the Mew Gull)

Henshaw returned to Britain from South Africa, and subsequently became involved in a range of family businesses. In 1953, when he was living at Sandilands, he was cited for heroism for his part in the rescue of many members of his community when tide and storm surge conditions resulted in massive flooding of the Eastern seaboard of Britain.

Alex Henshaw is now retired and living in Newmarket, while his son Alex runs the family businesses. He is a recent past President of the Spitfire Society, and in 1997 was presented by HRH Prince Philip with the inaugural Jeffrey Quill Award for his services to Aviation. In 1998 he travelled to Australia to present the Spitfire Memorial Defence Fellowship.

Charles "Speed" Holman 1898 - 1931

Charles Holman was raised on a farm in Minnesota. Speed Holman raced motorcycles under the nickname "Jack Speed", and later when doing 'daredevil' parachute jumps in an flying circus, his father was amazed to find that 'Jack Speed' was his son. In return for a promise to never jump again, his father bought him is first airplane. Speed broke the promise and also broke the airplane.

This is Speed at the Spokane Airport after winning the 1927 Air Derby.

His name became a household word, and when the newly organized Northwest Airways looked for its first pilot, they hired Speed. He became Operations Manager and pioneered air mail routes across Wisconsin and into North Dakota. His airline career was punctuated by wins in national air races, including the prestigious Thompson Trophy Race in 1930, part of the National Air Races in Chicago. He won this flying the Laird "Solution". Holman set a looping record that stood for many years; visited every corner of the State, lobbying the cities to build airports; was considered one of the country's top aerobatic pilots; and every fragment of his life was spectacular.

Such was his death during an impromptu aerobatic performance at the dedication of the Omaha Airport. His funeral was the largest in state history, with a hundred thousand persons turning out along the funeral route and at the cemetery.

Tired and oil-covered after completing a 1928 record of 1,433 loops (then doing an impromptu aerobatic routine for the gathered crowd

Benny Howard

Benny Howard in 1932 at
Cleveland's National Air Races

Benny Howard and His Darned Good Airplanes

Benjamin Odel Howard, better known as “Ben” or “Benny,” was born in Palestine, Texas, on February 4, 1904, just weeks after the Wright brothers' historic first flight. At age 19, Howard moved to Dallas and started working in the Curtiss aircraft factory where he soon bought a used biplane and a how-to-fly book.

Believing that the book taught him everything he needed to know about flying, Howard took to the skies—with disastrous results. He crashed his Curtiss during one of his first flight attempts, killing his passenger and seriously injuring himself. After recovering, Benny realized that it would be prudent to take some flying lessons. He eventually earned a commercial pilots license.

Determined to avoid formal education at all costs, Howard stumbled into the field of aircraft design when a Houston bootlegger approached him about modifying an airplane to include a cargo hold capable of holding 15 cases of illegal liquor. (This was during the early days of Prohibition—the era following the enactment of an amendment to the U.S. Constitution that made the sale or production of

alcoholic beverages a crime. Widely ignored, Prohibition was eventually repealed on December 5, 1933.)

The customer was delighted, proclaiming the “rum-runner” to be a “Darned Good Airplane,” and the name stuck—the initials D-G-A becoming the Howard aircraft trademark (although the reason was probably unbeknownst to the licensing authorities at the U.S. Department of Commerce!).

At 20 years old, Howard was flying an airplane he had designed and built himself – the DGA-1—accomplishing this feat with only the benefit of an eight-grade education with a half term of high school added for good measure. Benny, at the age of 26, was competing in the smallest racing aircraft ever constructed—a plane he designed and built named *Pete*—which would eventually win five air races. Benny, an incorrigible scrounger, used material salvaged from aircraft wrecks and scrap heaps to build *Pete*—officially designated the DGA-3. The tiny white *Pete*, powered by a 90-horsepower (67-kilowatt) Wright-Gipsy engine, was flown by Howard to a third place finish in the 1930 National Air Races with a speed of 162.80 miles per hour (262 kilometres per hour).

The early successes of *Pete* convinced Benny Howard that there was a lot of money to be made in racing airplanes. However, competing aircraft were soon outclassing *Pete*, so Benny and his partner, Gordon Israel, started work on two new and larger aircraft—the DGA-4 and the DGA-5—a pair of look-alikes named *Mike* and *Ike*.

Mike and *Ike* were both low-wing, wire-braced monoplanes. *Ike* weighed a little less than *Mike* and its Menasco Buccaneer engine was set for a slightly higher octane rating, which may have made *Ike* the faster of the two aircraft, at least in 1932.

Ike was sponsored by the General Motors Chevrolet division and also flew under the name of *Miss Chevrolet*. Equipped with a special carburettor, the DGA-5 at one time held the world record for inverted speed (flying in an inverted position—particularly important for acrobatic or military flight). Never content, Howard was always modifying the DGA-4 and DGA-5 and the two regularly traded the mantle of “fastest.”

Mike and *Ike* had wingspans measuring 20 feet 1 inch (six meters), fuselages of 17 feet (five meters) in length, and their cockpits were hinged on the side. The small cockpit was closed after the pilot was seated inside (level with the rudders), but a large hole accommodated the pilot's head. Thirty small ventilation holes drilled into the windshield provided fresh air, and the engine cowlings varied slightly between the two aircraft.

Landing gear differed significantly. *Mike* used an internal, shock absorbing system with large wheels to meet a certain racing specification. *Ike* featured a unique tandem landing gear of two small wheels covered by a single wheel fairing on each leg, originally designed as a joke, but ultimately proving quite successful. Later, handling problems while on the ground forced the replacement of both planes' landing gear with a more conventional single wheel SPAATs (Skin Penetrating Agent Applicator) penetrating nozzle design.

Soon to follow was the DGA-6, known as *Mister Mulligan*, which won the 1935 Bendix (flown by Gordon Israel) and Thompson Cup air races. Unfortunately, Benny Howard and his wife “Mike” were almost killed when *Mister Mulligan*, leading in the early stages of the 1936 Bendix Transcontinental Race, experienced a propeller failure flying over New Mexico. Both Howards recovered from the serious injuries resulting from the crash, but Benny tragically lost a leg in the accident and *Mister Mulligan* was destroyed.

A four-seat aircraft, tagged the DGA-8, was introduced in 1936 to capitalize on the publicity generated by *Mister Mulligan*, to be quickly followed in 1937 by the DGA-9, powered by a 285-horsepower (213-kilowatt) Jacobs L-5 engine. The success of *Mister Mulligan* also led to the formation of the Howard Aircraft Corporation on January 1, 1937, to produce commercial versions of the now-famous DGA cabin monoplanes, each custom-built by Benny Howard and Gordon Israel.

The DGA-11, powered by a nine-cylinder 450-horsepower (336-kilowatt) Pratt & Whitney Wasp Junior radial engine, was purportedly the fastest four-seat civil aircraft of the late 1930s, able to achieve a top speed of about 200 miles per hour (322 kilometres per hour). A favourite of the high society and Hollywood circles, the DGA-11 cost about $16,500 in 1938—a princely sum for the time. A slower and less costly version, the DGA-12, used a 300-horsepower (483-kilowatt) Jacobs engine.

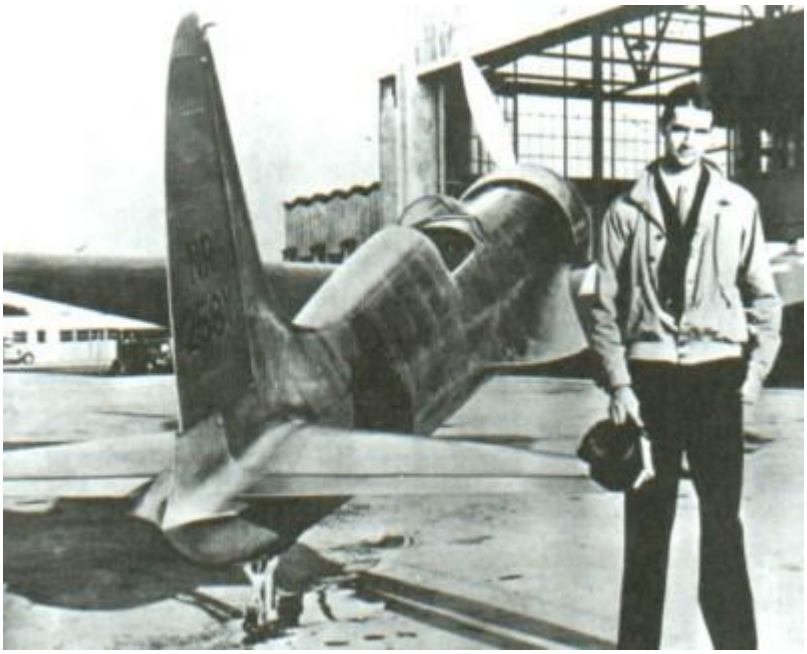
Production of the Howard Aircraft Corporation from 1936 to 1939 totalled about 30 aircraft. In 1940, Howard developed the DGA-15, building about 40 of the four/five-place aircraft, powered by one of three different engines.

The onset of World War II signalled the end of the Howard aircraft line. The U.S. Navy procured about 525 modified DGA-15s for use as the DG 1-3 Nightingale air ambulance, the GH-1 utility transport, and the NH-1 instrument trainer aircraft. Exceptionally roomy and high-powered, the modified DGA-15 was also difficult to fly and quite unforgiving—earning the unwanted nickname of “Ensign Eliminator.” The U.S. Army Air Corps also acquired a variety of Howard aircraft (DGA-8, DGA-9, DGA-12 and DGA-15) as utility aircraft.

After producing several of the most famous racing aircraft of the Golden Age of Aviation, the Howard Aircraft Corporation ceased production in 1943. *Pete*, *Ike* and *Mike* are still in existence—*Mike* is currently displayed as part of the aircraft collection of the Western Reserve Historical Society of Cleveland, Ohio, while *Pete* is the only Golden Age racing plane still flying with original parts. They are three of the last survivors of that colourful period, an era exemplified by Benny Howard and his Darned Good Airplanes.

Benny Howard’s Ike and Mister Mulligan

Howard Hughes
Born Houston TX, in 1905. Died 1976



Howard R. Hughes, Jr., one of America's most famous billionaires, was also one of the world's most important aviation innovators. One facet of his varied career revolved around his daring flights in the 1930s when he set several new aviation records. He also built one of the most important aviation manufacturing companies in history and was a major player in the growth and fortunes of Trans World Airlines. Through most of his life, Hughes was involved in aviation in one capacity or another but, of his many interests, flying was his greatest passion.

Hughes was born in Houston, Texas, in December 1905, to a wealthy family. Orphaned at 17, he dropped out of school to take control of the family business--the Hughes Tool Company, which had made a fortune thanks to a patent it held for a special oil-drilling bit. Although Hughes maintained control of the company, he quickly set out for Los Angeles to pursue two main goals--to become a famous movie producer and the world's best pilot.

Hughes combined certain aspects of his two dreams when he produced and directed the movie Hell's Angels (1930), a romantic vision of World War I aviators. The film took three years to make, cost $3.8 million to produce, and killed three pilots in the process. It also received an Academy Award nomination for Best Cinematography. During filming, Hughes had obtained his pilots license. As he continued to produce and direct films in the early 1930s, he also became quite an accomplished pilot.

To support his aviation ventures, Hughes created the Hughes Aircraft Company in Glendale, California in 1932. The company consisted initially of Hughes's own small team of designers and mechanics. Their mission was to build him the best racing planes in the world. The first aircraft they worked on and remodelled was an Army Air Corps pursuit plane. Hughes captured his first aviation prize in it at the All-American Air Meet in Miami, Florida, on January 14, 1934, while averaged 185 miles per hour (298 kilometres per hour) over a 20-mile (32-kilometer) racecourse.

Soon after, Hughes Aircraft built its first internally designed airplane--the H-1 racer. The H-1 was designed for speed, pure and simple; it was streamlining at its very best. On September 13, 1935, Hughes piloted the H-1 to a new speed record of 352 miles per hour (566 kilometres per hour) at Martin Field, near Santa Ana, California. The previous record was 314 miles per hour (515 kilometres per hour). Although Hughes had already achieved the record after a few passes over the airfield, he

kept pushing, and the H-1 ran out of gas. Forced to make an emergency landing in a nearby beet field, Hughes walked away from the plane unharmed.

Unsatisfied with just one record, Hughes started concentrating on establishing a new transcontinental speed mark. High-altitude flight would be the key to achieving a new record, and because the H-1 was originally intended for only short flights at low altitudes, Hughes began shopping for a new aircraft. Fellow aviator Jackie Cochran, and a great racer in her own right, had the plane he wanted--a Northrop Gamma. However, Cochran was planning to use the Gamma in an upcoming Bendix Race, and she wanted to establish her own transcontinental record. But Hughes finally offered her enough money and she gave in. After refitting the Gamma with a different engine, Hughes took off from Burbank, California, on January 13, 1936, en route to Newark, New Jersey, and a new cross-country record. He made the flight in 9 hours, 27 minutes, 10 seconds, and bettered Roscoe Turner's previous mark by 36 minutes. Within two weeks, he had also set flight records from Miami to New York, and from Chicago to Los Angeles.

A year later, Hughes, disappointed that he had not beaten Turner's record by a wider margin, had redesigned his H-1 so that it could handle long distance flights at high altitudes. On January 18, 1937, he took off from Burbank in the H-1, which he had renamed the "Winged Bullet," en route to Newark and another record. Despite the fact that his oxygen mask failed, and he almost blacked out, Hughes set a new mark of 7 hours, 28 minutes, 25 seconds. The achievement secured him the year's Harmon International Trophy, for the world's most outstanding aviator.

The Lockheed Model 14 Super Electra made a record for circling the globe -- in 3 days, 19 hours and 14 minutes with eccentric millionaire Howard Hughes piloting. One thousand police officers were on hand at New York's Floyd Bennett Field to control the throngs of people who showed up to greet Hughes.

Still wanting more, Hughes decided to try to better his personal hero Wiley Post's trans-global record. The aircraft he selected for the flight was a Lockheed 14, a twin-engine passenger plane. Hughes guided the aircraft off of Floyd Bennett Field in Brooklyn, New York, on July 10, 1938. He made Paris in 16 hours, 38 minutes, more than twice as fast as Charles Lindbergh had flown 11 years earlier. Then, on July 14, he and his four-man crew landed in New York in front of 25,000 cheering people. His new record of 3 days, 9 hours, 17 minutes, shaved more than four days off Post's previous record. Hughes received several honours including a Congressional Medal, the Harmon International Trophy once again, and a ticker-tape parade down Broadway. His trans-global flight marked the end

of his record-setting days. In subsequent years, he would concentrate on designing and manufacturing military aircraft and exercising control of Trans World Airlines as its principal stockholder. His most famous aircraft was the Spruce Goose, the largest plane of all time, which made its one and only flight in 1947. He has been forbidden to take off at Longbeach, which he did anyway and the Spruce was was at once confiscated!

The Spruce Goose splashes down at the end of its first and only flight.

Despite suffering four plane crashes while testing his own aircraft during his career, Hughes ironically died as a passenger on a jet plane on April 5, 1976, while en route to receive medical treatment after years of self-neglect. Although Hughes set several air speed and distance records in his early years, those accomplishments were overshadowed in his later years by his poor business decisions, his attempts to manipulate the military aircraft market, and his personal eccentricities and reclusiveness. Still, in spite of some of his unscrupulous actions late in life and his eccentric and reclusive personality, he was in many ways a romantic at heart, and his aviation career, at least in the beginning, reflected his great love of the sky.

He probably suffered from Attention Deficit and Hyperactivity disorder (ADHD) and by the time he was old was a prisoner of obsessive compulsive disorder, a well known co-morbidity of ADHD.

Laura Ingalls

Laura Ingalls was a highly successful female pilot of the 1930's with several unusual records to her credit. Daughter of a wealthy New York City family, Ingalls learned to fly in 1928. In 1930, she performed 344 consecutive loops, setting a women's record, and she shortly broke her own record with 930. She also did 714 barrel rolls breaking both women's and men's records. Ingalls held more U.S. transcontinental air records during the 1930's than any other woman, including a

transcontinental record of 30 hours east to west and 25 hours west to east (round trip New York and Los Angeles), both in 1930.

In 1935, she became the first women to fly non-stop from the east coast to the west coast and then immediately broke Amelia Earhart's non-stop transcontinental west-to-east record with a flight from Los Angeles to New York in 13 hours, 34 minutes. Her most well-known flights were made in 1934 and earned her a Harmon Trophy as the most outstanding female aviator of the year. Ingalls flew in a Lockheed Orion from Mexico to Chile, over the Andes Mountains to Rio, to Cuba and then to New York, marking the first flight over the Andes by an American woman, the first solo flight around South America in a landplane, the first flight by a woman from North America to South America, and setting a woman's distance record of 17,000 miles.

In 1936, she placed second behind Louise Thaden in the prestigious Bendix Trophy Race. Ingalls' flying career ended with questions about spying for the Germans in World War II, charges she denied.

Amy Johnson: Pioneer Airwoman 1903-1941

Amy Johnson was born July 1, 1903, in Hull Yorkshire and lived there until she went to Sheffield University in 1923 to read for a BA. After graduating, she moved on to work as a secretary to a London solicitor where she also became interested in flying. Amy began to learn to fly at the London Aeroplane Club in the winter of 1928-29 and her hobby soon became an all-consuming determination, not simply to make a career in aviation, but to succeed in some project which would demonstrate to the world that women could be as competent as men in a hitherto male dominated field.

Her first important achievement, after flying solo, was to qualify as the first British-trained woman ground engineer. For awhile she was the only woman G.E. in the world.

Early in 1930, she chose her objective: to fly solo to Australia and to beat Bert Hinkler's record of 16 days. At first, her efforts to raise financial support failed, but eventually Lord Wakefield agreed his oil company should help. Amy's father and Wakefield shared the 600 pound purchase price of a used DH Gypsy Moth (G-AAAH) and it was named Jason after the family business trademark.

Amy set off alone in a single engine Gypsy Moth from Croydon on May 5, 1930, and landed in Darwin on May 24, an epic flight of 11,000 miles. She was the first woman to fly alone to Australia.

In July 1931, she set an England to Japan record in a Puss Moth with Jack Humphreys. In July 1932, she set a record from England to Capetown, solo, in a Puss Moth. In May, 1936, she set a record from England to Cape town, solo, in a Percival Gull, a flight to retrieve her 1932 record.

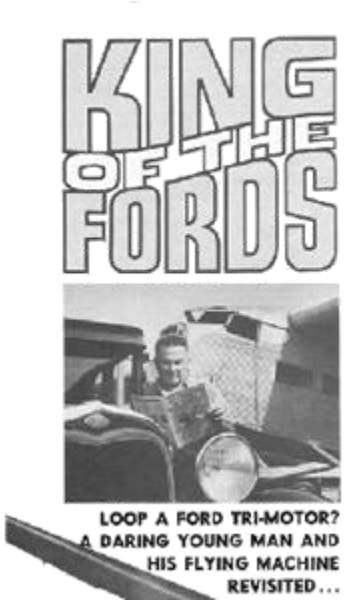
With her husband, Jim Mollison, she also flew in a DH Dragon non-stop from Pendine Sands, South Wales, to the United States in 1933. They also flew non-stop in record time to India in 1934 in a DH Comet in the England to Australia air race. The Mollisons were divorced in 1938.

After her commercial flying ended with the outbreak of World World II in 1939, Amy joined the Air Transport Auxiliary, a pool of experienced pilots who were ineligible for RAF service. Her flying duties consisted of ferrying aircraft from factory airstrips to RAF bases.

It was on one of these routine flights on January 5, 1941, that Amy crashed into the Thames estuary and was drowned, a tragic and early end to the life of Britain's most famous woman pilot.

Amy is remembered in many ways, one of which is the British Women Pilot's Association award -- an annual Amy Johnson Memorial Trust Scholarship to help outstanding women pilots further their careers.

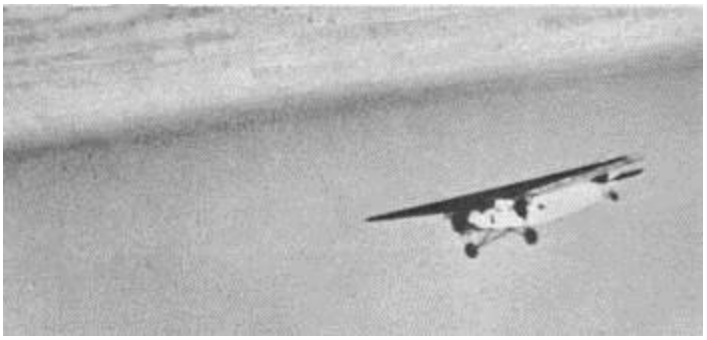
Harold Johnson



Sunlight glinting from its wings, the silver tri-motor rolls over in the Florida blue . . . first on its left side . . . then on its back . . . around and upright again. Without hesitation, the ship noses over in a steep drop as the announcer squeezes the tension out of the crowd in the stands below, calling off the loss of each hundred feet of evaporating altitude.

Seven . . . six . . . five . . . four . . . the numbers sound like a doomsday atomic countdown. Suddenly, the pilot brings the big aircraft up into a climb and over on its back. Then down again, into a graceful loop that ends 15 feet over the runway with the spectators about to panic from their seats.

Now the crowd is nearly out of its mind. Tex Rankin, one of the greatest stunt pilots of all time, turns to the man next to him and shakes his head in disbelief. "You'd never catch me doing that with that much airplane." Then he turns back, eyes glued on the Ford Tri-Motor as Harold Johnson flying solo, climbs for altitude to perform his most impossible manoeuvre of the show. All that has gone before, has been merely to whet the appetite and provide a few candidates for coronaries.



Typical wing-skidding landing during practice session at Daytona Beach, Florida

At 400 feet, Captain Johnson levels off then pulls the nose up sharply, until the big tri-motor shudders into a hammerhead stall. Over the top she goes and into a giant, arching spin toward oblivion, her engines popping softly, the wind screaming along her corrugated surfaces. At 400 feet there is only room enough for a little over one turn. The Ford rolls out at a very steep angle, and as Johnson seemingly recovers from the spin and dives out of sight behind the bordering trees, the people are frantic. They are certain that he has crashed . . . but where is the explosion?

Famous for his low altitude pull-outs, Johnson eases the big bird out of a loop at a delicate altitude while a Waco waits to see what comes of it.

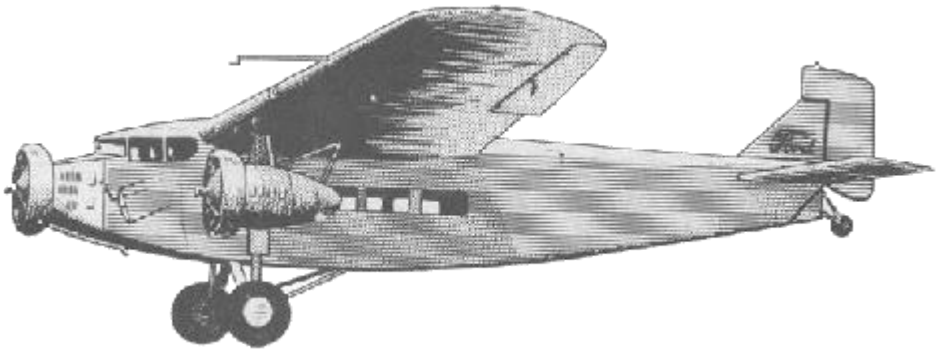
Safe on the ground, Harold Johnson smiled. Always a showman, pleasing the crowd was his foremost concern. If in the process, he also petrified them, it was a minor by-product.

Captain Johnson's first aircraft, a WACO, in front of his dealership hanger in 1930

After pulling up from behind the trees still out of sight he had wheeled the great silver ship around for a smooth one-wheel landing, touching the tip of the wing on the dirt strip and raising clouds of dust. So went Harold S. Johnson's life for ten years - from 1932 to 1942. During that time, he became known to millions as the "King of the Fords", and no crown was ever worn more deservedly.

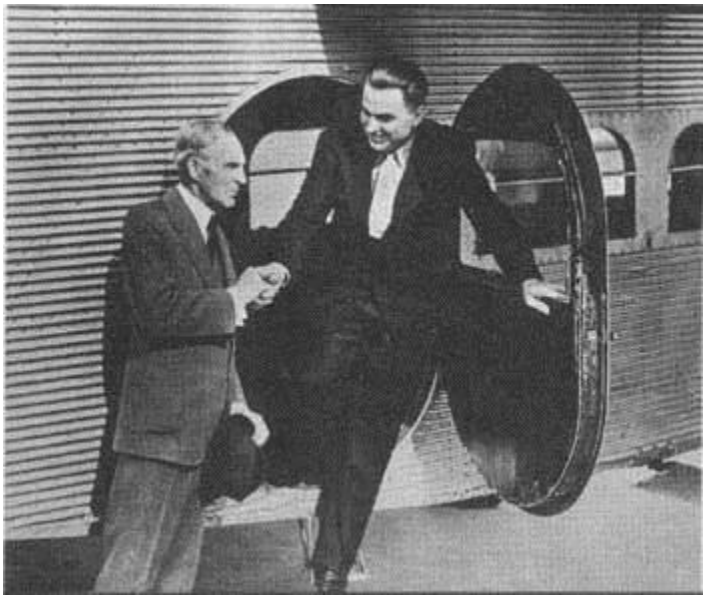
Today, Harold Johnson recalls every detail of those fantastic flying years as if they had happened last week. Born in Chicago, Illinois in 1910, his first solo flight was made in 1929. The ship was a Waco and not long after soloing, Harold formed the Aerial Transit Company and became a dealer for the Waco Airplane Co. Still, he wanted to travel and decided that a dealership was just too pedestrian for him. As a result, he launched himself into the barnstorming business, but with one important

reservation. He knew that if he went into an already overcrowded occupation, he had better come up with something different . . . enter the Ford Tri-motor.



This was a real first. It had never been done, much less attempted. Stunting the big bird for air shows would really knock their eyes out. So in 1932, Harold purchased a 4-AT Ford and set about learning how to wring it out. Rolling a six ton, multi-engine airplane was a job that required more than guts, which Johnson had plenty of. It also demanded new skills, new insights and new muscle coordination, as well as brawn.

Harold formed National Air Shows and with the Ford and other birds, started zooming and looping over the towns and cities of the East and Middle West. He soon discovered that wingtip scraping cost him a new tip every six months, and other maintenance problems so plagued the fledgling company that Johnson was forced to establish a certified CAA repair station on a Ford truckbed that followed the show.



Rare photograph shows Johnson being congratulated by Henry Ford after putting on his typically daredevil demonstration at the Ford plant in Dearborn, Michigan, during the early thirties


Agility of the venerable Ford is demonstrated by inverted flight

For the next seven years Johnson, sponsored by SOHIO Oil, starred at the National Air Races, stunting his Ford before thousands. And in 1931, he placed 2nd in the Bendix Cross Country, flying a Lockheed Orion. However, since he wanted a swift, manoeuvrable biplane to work in the shows and no factory built craft suited his fancy, he built his own.


Looping takeoff by Johnson in his Continental Special, then in modified version. Johnson built this NR 10537, in original version

In 1937, he rolled out his Continental Special NR-10537. In this nimble, Continental powered biplane, he would aileron roll straight for the ground, fly upside down and generally warm up the crowd for the main event. Then he would land, taxi up to the Ford, hop out of one plane and continue the show in the other. He never let the people relax. His usual procedure would be a loop on take off, just to get everyone's attention and, at times, Johnson would shut off one engine and do his routine on two mills only.

Johnson liked the Ford and the Ford liked Harold. Once, when he came through Dearborn, Michigan, old Henry himself came out to see him perform and went away amazed at his skill. The crusty old gentlemen considered Harold "a most talented and daring young man."

Looping the Ford was Johnson's favourite manoeuvre and on one sortie before a crowd of 15,000, he made 17 graceful loops, breaking his own world record of 16. One of the more interesting brain-storms Harold devised, was to mount the Continental Special atop the Ford, so that both aircraft could be flown to various air shows by one pilot. Somehow, this project was put aside and never reached completion, although the feat was accomplished later both by Great Britain and Germany.

Pearl Harbour brought the National Air Races to an end. Harold sold the Ford and started ferrying Hudsons across the stormy Atlantic to England The loss rate on those wartime delivery routes was nearly 50 percent then, and the missions were hairy, most of them bedeviled by malfunctions of major proportions. After a year of this incredible type flying, Johnson took on the less hazardous job of testing B-24's for Ford's Willow Run plant. These fat birds were a far cry from the kind of ship he liked to fly and he soon transferred to sunny California and Lockheed.

In 1944, he checked out in P-38s and began testing planes for delivery to the combat zones. It was interesting and demanding work, with his day filled by 7 plus G pullouts. Johnson also tested the 1049 Constellation and found, to his delight, that the rate of roll was better than the P-38's . . . but there were more surprises in store.

At the close of hostilities, the P2V was a brand new idea at Lockheed and there was a rush on to complete tests to prove to the Navy that the P2V was the bird they wanted for anti-submarine patrolling. On a great flying day over Burbank, Johnson was letting down the X model prototype, when the bomb door came loose, wrapped itself around the tail, smashed the rudder and ripped three fourths of the vertical fin off the aircraft. Johnson fought for control of the big ship, and heading out over the desert, saved the plane and the P2V program by landing the aircraft at Edwards AFB. Thanks in part to Harold Johnson's superb skill and piloting ability, the P2V is now the standard anti-submarine patrol bomber for the free world.

During the war, Johnson was test pilot on B-24's at Ford's Willow Run plant, flew P-38's for Lockheed and ferried Hudsons to England.

The hectic years were now coming to a close. With hostilities over in the Pacific and military planes no longer being built in quantity, test pilots went looking for other areas in which to apply their specialized talents. The King of the Ford became a Beechcraft distributor in the east, but he had found a home in California and was back a few years later to open a shop at Van Nuys Airport. Nevertheless, neither he nor the tin goose could stay separated for long. There was another Ford in his future . . . G.E. Moxon's Ford 5-AT at Santa Monica Airport . . . where Johnson now works daily to restore it. And who knows, maybe a new generation of aviation buffs will see Captain Harold Johnson fly the six ton airliner through a loop or roll? At any rate, a Classic Airman and a Classic Airplane are back together again. **Joseph Kittinger**

The U.S. military has often been involved in setting aviation records. In the 1920s and 1930s, the Golden Age of Air Racing, members of the military competed in the National Air Races and set several records, helping to improve aviation technology in the process. Jimmy Doolittle set several records in the 1920s and 1930s, both as a member of the military and as a civilian. In the late 1950s and into the 1960s, another person who set records as a member of the military and in the mid-1980s

as a civilian was Joseph Kittinger, Jr. While a member of the U.S. Air Force, Kittinger's work using high-altitude balloons helped the nation in the earliest days of the space program. He reached into the highest layers of the atmosphere and provided information on how humans would react to the rigors they might encounter. Through his high-altitude parachute jumps, he helped increase their chances of survival, while setting several records, some of which have never yet been broken.

Joseph Kittinger was born on July 27, 1928, and grew up near Orlando, Florida. He became fascinated with planes at a very young age when he saw a Ford Trimotor at a nearby airport. As a youth, he persuaded local pilots to give him free rides, and he soloed in a Piper Cub by the time he was 17. Kittinger attended the University of Florida for two years, then left to join the U.S. Air Force in 1949 as an aviation cadet and earn his wings. He served as a NATO test pilot in Germany until 1953, when he was assigned to the Air Force Missile Development Centre at Holloman Air Force Base in New Mexico. At Holloman, Capt. Kittinger flew experimental jet fighters and participated in aerospace medical research. In 1955, he flew the T-33 observation plane that monitored the "rocket-sled" experiment of aircraft medicine pioneer Col. John Paul Stapp in which Stapp took his aircraft to 632 miles per hour (1,017 kilometres per hour) to test how gravitational stress affected the human body.

Stapp recruited Kittinger for Project Man High, a project begun in 1955 that would use balloons capable of high-altitude flight and a pressurized gondola (the basket or capsule suspended from the balloon) to study cosmic rays and to determine if humans were physically and psychologically capable of extended travel at space-like altitude (above 99 percent of the Earth's atmosphere). The Air Force had determined that a high-altitude balloon flight was the best way to conduct these studies since aircraft could remain at these altitudes for periods of time that were too short to provide useful data. Using a two-million-cubic-foot (56,634-cubic-meter), 172.6-foot (52.6-meter) diameter balloon and a cramped aluminium alloy capsule manufactured by Winzen Research of Minneapolis, Kittinger made the first Man High ascent on June 2, 1957, remaining aloft for almost seven hours and climbing to 96,000 feet (29,261 meters). The lessons learned from his flight and two other Man High flights later in 1957 and in 1958 by Major David Simons and Lt. Clifton McClure that went even higher and set new records were used later in NASA's Project Mercury.

In 1958, Kittinger moved to the Escape Section of the Aeromedical Laboratory at Wright Air Development Center's Aero Medical Laboratory. There, he joined Project Excelsior, which investigated the use of a parachute for escape from a space capsule or high-altitude aircraft. At the time no one knew whether humans could survive a jump from the edge of space.

Kittinger readies himself for a high-altitude jump, standing beside the Excelsior gondola. The sign at the lower edge of the gondola says: "This is the highest step in the world."

On November 16, 1959, Kittinger piloted Excelsior I to 76,000 feet (23,165 meters) and returned to Earth by jumping, free falling, and parachuting to the desert floor in New Mexico. The jump almost cost him his life. His small parachute, which served to stabilize him and prevent him from going into a fatal "flat spin," opened after only two seconds of free fall instead of 16, catching Kittinger around the neck and causing him to spiral uncontrollably. Soon he lost consciousness, as he tumbled toward Earth at 120 revolutions per minute. Only his emergency parachute, which opened automatically at 10,000 feet (3,048 meters), slowed his descent and saved his life.

Captain Kittinger ascending in the Project Excelsior balloon gondola.

In spite of his close call, he continued with the project and the flight of Excelsior II, which took place on December 11, 1959. This balloon climbed to 74,700 feet (22,769 meters) before Kittinger jumped from his gondola, setting a free-fall record of 55,000 feet (16,764 meters) before pulling his parachute ripcord.

Joseph Kittingerïs high-altitude jump, 1960.

The next year, Kittinger set two more records, which he still holds. On August 16, 1960, Kittinger surpassed the altitude record set by Major David Simons, who had climbed to 101,516 feet (30,942 meters) in 1957 in his Man-High II balloon. Kittinger floated to 102,800 feet (31,333 meters) in Excelsior III, an open gondola adorned with a paper license plate that his five-year-old son had cut out of a cereal box. Protected against the subzero temperatures by layers of clothes and a pressure suit--he experienced air temperatures as low as minus 94 degrees Fahrenheit (minus 70 degrees Celsius)--and loaded down with gear that almost doubled his weight, he climbed to his maximum altitude in one hour and 31 minutes even though at 43,000 feet (13,106 meters) he began experiencing severe pain in his right hand caused by a failure in his pressure glove and could have scrubbed the mission. He remained at peak altitude for about 12 minutes; then he stepped out of his gondola into the darkness of space. After falling for 13 seconds, his six-foot (1.8-meter) canopy parachute opened and stabilized his fall, preventing the flat spin that could have killed him. Only four minutes and 36 seconds more were needed to bring him down to about 17,500 feet (5,334 meters) where his regular 28-foot (8.5-meter) parachute opened, allowing him to float the rest of the way to Earth. His descent set another record for the longest parachute freefall.

During his descent, he reached speeds up to 614 miles per hour, approaching the speed of sound without the protection of an aircraft or space vehicle. But, he said, he "had absolutely no sense of the speed." His flight and parachute jump demonstrated that, properly protected, it was possible to put a person into near-space and that airmen could exit their aircraft at extremely high altitudes and free fall back into the Earth's atmosphere without dangerous consequences.

Quarters are cramped inside the Stargazer gondola.

After Excelsior, Kittinger moved on to Project Stargazer, which began in January 1959. This balloon astronomy experiment studied high-altitude astronomical phenomena from above 95 percent of the Earth's atmosphere. This vantage point allowed undistorted visual and photographic observations of the stars and planets. On December 13-14, 1962, Kittinger, along with astronomer William C. White, rose to an altitude of 82,200 feet (25,055 meters) and hovered over Holloman Air Force Base in the Stargazer gondola. The two checked variations in the brightness of star images caused by the atmosphere and made observations by telescope. The flight also provided useful information about the development of pressure and associated life support systems during an extended period on the edge of space. This was Kittinger's final high-altitude balloon flight.

But he did not rest on his achievements. Kittinger volunteered for three combat tours in Vietnam, flying 483 missions. On May 11, 1972, he was shot down and spent 11 months in captivity as a prisoner of war. It was during this time, he said, that he dreamt of an around-the-world balloon flight.

He retired from the Air Force in 1978, and began ballooning around the country and entering balloon competitions. Kittinger won the Gordon Bennett Gas Balloon Race four times during the 1980s and retired the trophy after three consecutive victories. In November 1983, he established a new world record by flying a 1,000 cubic-meter (1,308-cubic-yard) helium balloon from Las Vegas, Nevada, to New York, covering 2,001 miles (3,220 kilometres) in 72 hours. The next year, Kittinger became the first person to fly alone by balloon across the Atlantic Ocean. Setting out on September 14, 1984, from Caribou, Maine, in the 3,000-cubic-meter-Rosie O'Grady, he floated 3,543 miles (5,702 kilometres), touching down in Cairo Montenotte, Italy, on September 18, by Kittinger's account, 83 hours and 40 minutes after launch. His flight set a record for both the longest solo balloon flight and a distance record for this class of balloon.

Although after this flight, his record-setting days ended, Joe Kittinger has never stopped flying. He has piloted 78 different types of aircraft over the years and received numerous military and civilian awards and decorations. He is an aviation consultant and a barnstormer, touring around the country with his open-cockpit biplane and taking children on their first airplane rides. A person who helped open the portal to space, in the year 2002, he is still a vital part of the aviation community.