

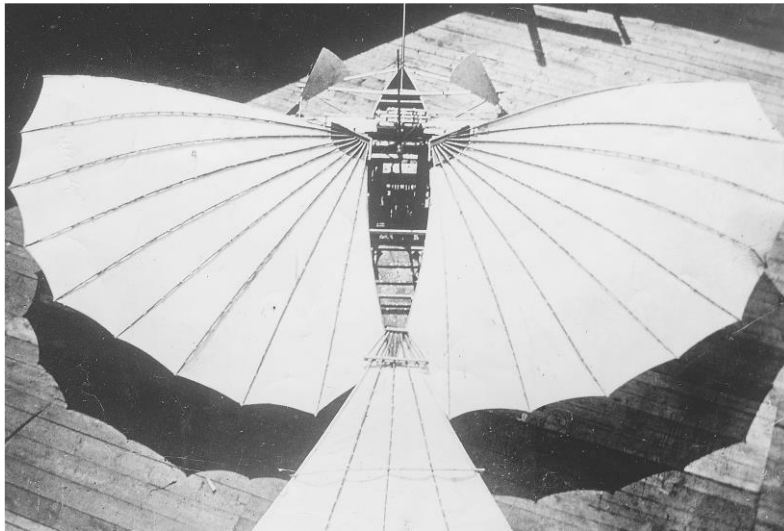
Gustave Whitehead America's Forgotten First Flyer

Gustave Whitehead's Machine Number 21 the 'Condor'

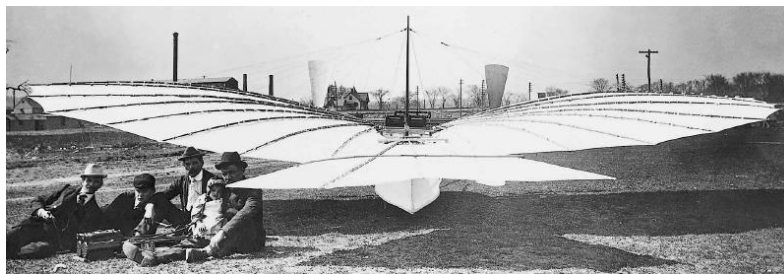
**The First Powered Manned Aircraft to Achieve Controlled Flight on August 14, 1901.
Four Documented Powered Manned Test Flights were completed on that day up to 1-1/2 miles.**



FRONT



TOP



BACK

(Images archived at the Flight Historical Research Foundation Gustav Weisskopf,
Leutershausen, Germany)

*"Gustave Whitehead, of Bridgeport, Conn., has invented an airship that will sail in the air...
The whole country is greatly stirred by America's latest opportunity."*

The Virginia Enterprise – September 13, 1901

CHAPTER ONE

A GLIDER, AN ENGINE AND GUSTAVE WHITEHEAD

*“What has not been examined impartially has not been well examined.
Skepticism is therefore the first step toward truth.”*
Philosopher Dennis Diderot (1713-1784)

**Boston Aeronautical Society
March 19, 1895 – Boston, Massachusetts, United States**

*“...to encourage the work of aeronautical experimenters and their study of
heavier than air aerial machines and to advance the science of aerodynamics.”*
Society Motto

Manned controlled powered flight was on his mind in 1895 when Gustave Albin Whitehead (1874-1927) became a member of America’s first aviation organization named the *Boston Aeronautical Society*, which had been formed by a group of wealthy Bostonians. James Means, a local manufacturer, who had recently published a small booklet titled *The Problem of Manned Flight*, announced he was forming a new society with a view towards expanding man’s efforts in aeronautical research. Most members of the new organization turning towards a new century understood that powered manned flight controlled by a pilot would soon become a reality. Little did they suspect that one of their members would soon turn his own dream of flight into that reality.

The organization was officially formed on March 19, 1895 (operating from 1895 to 1915) by James Means, Albert A. Merrill, a bank manager who lectured on aeronautics and Astronomer William H. Pickering (1858-1938). The new group was soon looking for someone with glider and kite experience and Whitehead filled the bill nicely. After Whitehead joined the new group he soon became a key member helping construct a series of Lilienthal type gliders at a new facility on Cape Cod. It would be at Cape Cod that the society would test their ideas expected to lead up to a series of unpowered manned flights and hopefully on to a manned powered flight in the not too distant future. For their field experiments the members utilized the Blue Hill Meteorological Observatory at Milton, Massachusetts, just outside of Boston. The observatory has become famous for not only its recording of the strongest wind gust ever directly measured at 186 mph during the 1938 hurricane (before these storms were given names), but for its record meteorological kite deployment which reached the amazing height of 8,740 feet.

During 1895, ’96 and ’97 Means, gathering all he could on aeronautical advances, published the *Aeronautical Annuals* which was influential in informing the aeronautical community of developments in the field as well as encouraging all those who were involved in the study of manned flight. Many read each limited issue as they rolled off the presses including the Wright brothers, who had studied the same reports on Lilienthal glider tests. They would later report that Lilienthal’s work and Means’ publication had made a great influence on their efforts. In 1910 Orville Wright (1871-1948) sent a letter to Means expressing the fact that it was with his encouragement through the pages of the *Aeronautical Annuals* that they continued to work on the problem of manned flight. A portion of that letter was published in the *Annuals*’ compilation issue of 1910. Being well informed about things

aeronautical the brothers' Wright could hardly have missed the fact that young Mr. Whitehead was an early member of the *Boston Aeronautical Society* working with James Means.

In 1896 the Society put together an “experimental fund”; accepting donations for future “innovation development in flight”. Continuing their research, society members, including the co-chief Samuel Cabot who had visited Otto Lilienthal (1848-1896) in 1894, visited Lilienthal in Germany again during August 1896 to learn details of flying gliders first-hand from the “Glider King”. Cabot also visited British flight experimenter Hiram Maxim (1840-1916). Not long after the visit Lilienthal would die in a glider accident. They had been corresponding with Lilienthal for some time, but since he spoke only German translating his correspondence could very well have been one of Gustave's first jobs for the Society as German was his native language. However, young Whitehead's primary job was as a trained mechanic to help build Lilienthal type gliders of which three are known to have been constructed by Whitehead and fellow Society mechanic Albert B. C. Horn during 1895-1897 even as Whitehead worked on his own flight projects. Later researchers came to understand that Whitehead had been engaged by the Society based originally on his claim to have worked for a short period of time with Lilienthal, and his ability to build gliders certainly shows this association. When asked about Whitehead's background and expertise Samuel Cabot would later report, “On balance, Whitehead's claim to have assisted Lilienthal would therefore appear to be credible.”

Testing many concepts the Society team also built an ornihopter – a type of fixed-winged craft with wings that flapped like a bird, but despite their combined efforts their ornihopter reportedly never flew very well, but perhaps it did for only a rather short hop. Man does not possess the strength in our arms for such work, as the ‘flyer’ needs to perform a constant series of push-ups/pull-ups to fly. The time for a true vertical lifting craft had not yet arrived. A strong motor would be required. And even though Whitehead had built his own helicopter it would fail to lift off. Motors were just not strong enough to do the job at least for a while longer. However, Whitehead was able to make several “short and low flights” during this early period with the Society gliders which would once again prove the concept of the glider design pioneered by Lilienthal who himself had by then made some 2000 successful glider flights before his fatal accident.



Otto Lilienthal ready for takeoff from a small hill with ornihopter glider around 1894

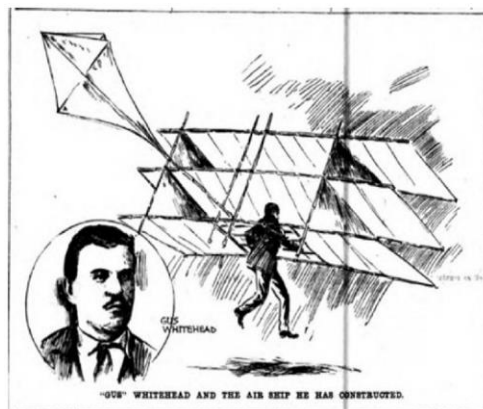
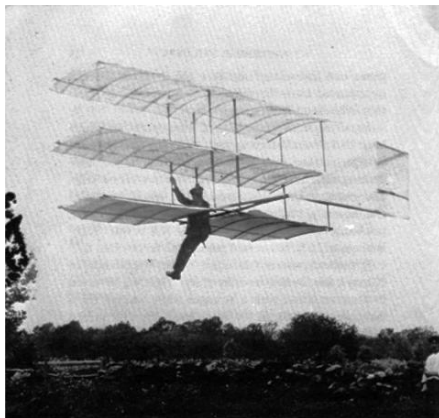
Aviation researcher John Brown wrote, “In Buffalo, Whitehead also settled on his wings' future airfoil. He chose one with its arc peaking near the leading edge designed by the British pioneer [Horatio Frederick] Phillips (1845-1924) (the Phillips Airfoil patented in 1891) rather than with a symmetrical arc of the type favored by Lilienthal. Whitehead went even one step further by filling out the concave area under the wing as is now done on modern airfoils.” Phillips had used a wind tunnel to study airflow over a variety of wing surfaces and produced a ‘flying machine’ in 1893 which could when tested lift 400 lbs. with no fewer than 50 lifting surfaces, but it was not designed to be a manned craft.

First Came the Gliders
October 6, 1897 – Jersey City Heights, New York, United States

They were only gliders, but in 1897 they commanded excited attention for those who saw the future unfolding in the skies above even though glider work had been developing for centuries. By this time glider reports were regularly making their way into the newspapers of America and Europe. Gustave Whitehead had invited reporters from six New York newspapers on October 4, 1897, 60 years to the day before the launch of *Sputnik 1* and the start of the space age, to the unveiling of two of his aircraft displayed in the courtyard of his boarding house on Prince Street. He had also invited “the international news correspondences” to the showing at his press conference. No fewer than eight New York newspapers reported on the aircraft that Whitehead was building. It is a measure of his fame at the time that he could invite the Press of New York and they would show up at his doorstep to see what he had built.

The first and possibly most spectacular model that day was a ‘box kite glider’ with three wings painted bright red, possibly modeled after the box-kite work being developed at the time by Edward Horseman, based upon earlier work performed by Lawrence Hargrave (1850-1915) working in Australia. The second craft, only partly completed at the time, was his retractable winged biplane model which was being built to hold a 3 h.p. gasoline burning motor. This aircraft with a motor was unveiled to the press seven years before the Wrights ‘glided’ over the dunes of Kitty Hawk with their ‘powered’ craft. The reporters were informed that Whitehead was planning to fly his glider in the next few days. It was going to be local news, but if the work was successful the odds were good that other newspapers would pick up the story.

On April 6, 2013, Dr. Tom Crouch of the National Air and Space Museum in Washington D.C. wrote about the Press visit to Whitehead’s home during the fall of 1897. “In October 1897 a reporter for *The New York Herald* (October 5, 1897) interviewed Whitehead at his boarding house at 130 Prince Street, where he saw two flying machines. The first was a tri-plane hang glider clearly based on a similar craft designed the year before by the brilliant Chicago (bridge) engineer Octave Chanute (1832-1910) and his assistant, Augustus Moore Herring (1867-1926), and flown by Herring in the dunes ringing the southern shore of Lake Michigan in the summer of 1896, and again in 1897.” (Of perhaps interest to readers is the fact that Dr. Crouch is “a native” of the Wright hometown of Dayton, Ohio and is a graduate of Wright State University, and a long time supporter of the brother’s Wright.)

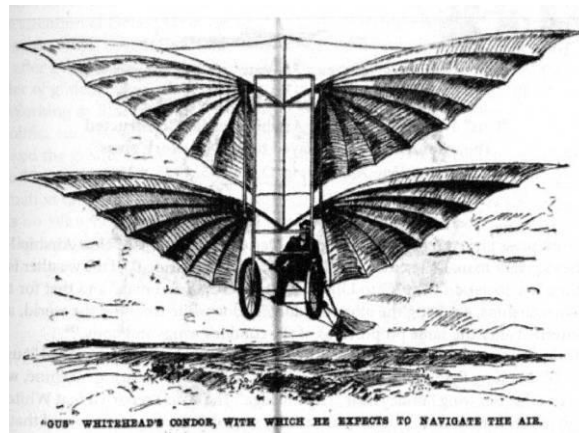


Gustave Whitehead during glider flight/Illustration from *The New York Herald*, October 5, 1897

The fact that Whitehead was flying a copy of the Chanute-Herring original indicates that he was working with one of the most advanced aircraft structures of the era. But Whitehead showed the

reporter a second machine that was under construction. This craft was very different, with bird or bat-like wings that would have been much frailer than the sturdy, “braced tri-plane wings.” It would have closely resembled one of several of Lilienthal’s unpowered gliders which had become well known to those in the early world of aviation. This of course indicates that Whitehead was seeking flight data on more than one design even during his earliest work. It could very well have been the craft Whitehead flight tested in 1899.

Two days later on October 6 Whitehead, witnessed by what has been reported as “hundreds of spectators,” made two flights. In the large crowd at Jersey City Heights, drawing its origins as part of Pavonia, New Netherland was none other than New York aviation pioneer Augustus Moore Herring. Herring told reporters that he had now “witnessed flights by both Chanute and Lilienthal.” The flights began from a point 125 feet up the western slope and ended at “the meadows of the Hackensack [river].”



The New York Herald published the story on October 5, 1897, as did several other papers, and included in the article a lithograph of “GUS’ WHITEHEAD AND THE AIR SHIP HE HAS CONSTRUCTED.” The glider efforts of ‘Gus’ Whitehead had now been published in major New York City newspapers and photographs had been taken of the event.

It is well to note that *The New York Herald* from 1835 to 1924 was one of the largest distributed newspapers in New York. It would be *The New York Herald* which financed the expedition into unknown Africa by Henry Morton Stanley (1841-1904) to uncover what happened to Dr. David Livingstone (1813-1873). The meeting with “Dr. Livingston I presume” occurred on November 10, 1871. Needless to say *The New York Herald* was not just some local paper with a small readership. Newspaper reports of Whitehead’s glider flights had hit the big time – this was cutting edge aviation news in 1897!

Whitehead informed the reporter that, “With the gliding machine out in the yard, I’ll have to start from an elevation before sailing. With this more elaborate machine (indicating his new ‘*Condor*’ machine), I’ll be able to rise from the level ground by the motive power alone in a calm or high wind.”

The new craft was described as an “air ship” with “four movable wings” looking very much the same as the future Machine Number 21, “in pairs, twenty feet from tip to tip.” The wings were “connected by a frame of steel, which runs on bicycle wheels that are necessary in starting or alighting... The horizontal tail will extend twenty feet to the rear and is shaped like the tail of a condor. It is also movable and can be folded up. The operator has the management of the tail. By sliding his body from side to side on a sliding frame he can change the center of gravity to maintain his balance and steer the machine from right to left.”

Continuing Whitehead spoke of the landing. “Before landing the operator will slacken the speed and lift the tail.”

Whitehead’s second craft was a “gliding machine” with three aero surfaces/wings. “It can also be fitted with a motor of three horsepower, operating two propellers, one at each end of the framework, or simply as a soaring machine, without power.”

The next day on October 6 the *New York World* reported on Whitehead’s ‘flying machine’ with a description of his “new 20 foot long flying machine.” Their readers soon learned that Whitehead had named his machine the ‘*Condor*’.

After this work the glider and ‘bat-like’ aircraft were placed in storage. Whitehead soon moved to Buffalo where six weeks later, on November 24, 1897, he married Lujza (Louise Tuba) who had immigrated from her native Hungary. On the marriage certificate he wrote that his occupation was “aeronaut.” The trained mechanic was now a pioneer research test pilot. He was also a builder of aircraft and aircraft engines. Much of his later fame would derive from his innovative engine designs.

Whitehead fans would perhaps find it of historic interest that one of and perhaps the earliest newspaper report so far discovered mentioning Whitehead came during June 15, 1897 by *The New York Herald*. “Gus Whitehead” was interviewed on the roof of the well known luxury *Fifth Avenue Hotel* located between 24th and 23rd Streets in Manhattan, New York on Flag Day. Whitehead was controlling “bright red [Edward I.] Horsman box kites and measuring their lift” using ballast up to 100 pounds. The design was such that the unmanned craft were shown to be able to lift such heavy loads. Well known today this new invention of the box kite is credited to Lawrence Hargrave in Australia only 4 years earlier in 1893.

The Horsman Company produced and sold large commercial kites that could be used to display advertising banners. Smaller ones were also on sale just for the adventure of flying a kite.



Horsman had been one of the individuals who had flown experimental kites at the Blue Hill Observatory. Horsman was a well connected east coast businessman and known for being a “professional kite flyer”. He was so well respected that he had been named as one of the organizers of the 1892 World’s Fair held in New York upon an “Act of Congress.”

Horsman, who met Whitehead when he worked for the Aeronautical Society, essentially “head hunted” the young German away to his company obviously seeing his aviation skills. Whitehead was soon a much valued member of Horsman’s “Scientific Kite Team,” and scientific it was.

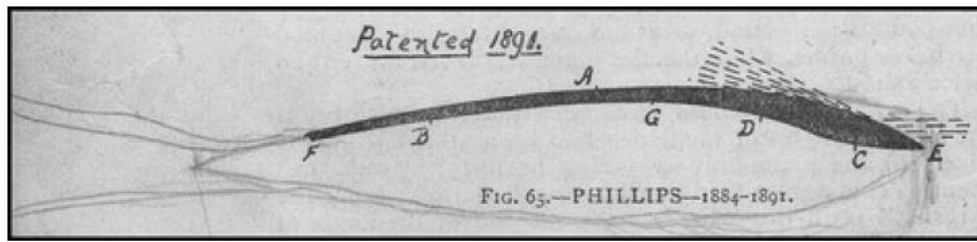
Horsman’s kite company undertook aerial photography, experimental meteorological measurements as well as contracts for fire-works delivered to height by kites in New York and other east coast cities. It was not uncommon to see these kite displays and fire-works by Whitehead and other Horsman employees at famous Coney Island most likely on Flag Days as noted above and Independence Day. One particularly interesting event attended by Horsman and his kites was a noisy and colorful welcoming for Admiral George Dewey (1837-1917) upon his return to New York after completing military operations in the Philippines.

Interestingly nine years later Horsman was one of the exhibitors at the First Annual Exhibit of the Aero Club of America held in New York City from January 13-20, 1906, which also displayed

photos of aviation pioneers and their flight efforts including Gustave Whitehead. By that time Horsman had much improved his scientific kites adding rudder controls and a small motor. He could now 'fly' his tethered craft pretty much where he wanted them to go.

It was while Whitehead was working for Horsman that he built and tested two of his own gliders. Whitehead's first glider was referred to in a letter by Samuel Cabot who had become familiar with his work. Writing to Octave Chanute on May 7, 1897, Cabot asks Chanute if he has knowledge of Whitehead's glider being tested "out west" referring to New York City. The glider flights of this young man were beginning to become known in the early aeronautical world during the late 1890s.

In November 1897, Gustave Whitehead checked out, and seems to have forgotten to return, a copy of Octave Chanute's book *Progress In Flying Machines* published in 1894, from the Buffalo, New York, Public Library. Influential as it was Whitehead would write down his own notes on flight on its well overdue pages. He would also add to one wing configuration graphic giving it an historic modern look of a wing. This historic work made even more so by the man who 'borrowed' it may now be found at the Whitehead museum in Germany. Perhaps it will eventually find its way back to the Buffalo, New York Public Library, but one would imagine it would only be returned on a day when late fees have been forgiven! Or perhaps the Whitehead museum could simply purchase another copy (E-bay perhaps?) and send it along to Buffalo in Whitehead's name – just a thought.



Whitehead drew pencil lines in 1897 in a book he 'borrowed' from the Buffalo New York Public Library. His insights into the 1891 Phillips Airfoil were added which then closely resembled a modern airfoil.

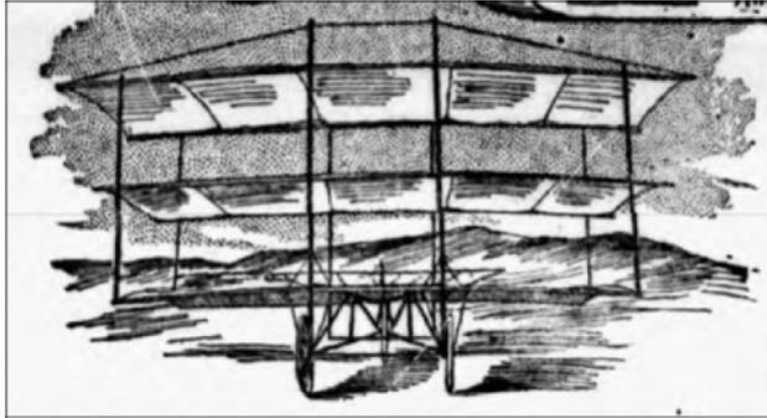
Of course there may have been a good reason why Gustave forgot to return the book as his mind may well have been on other matters. As mentioned above he had married Louise Tuba on November 24, 1897 in Buffalo.

Octave Chanute, who seems to have been a clearing house of flight news, was very well known in the aviation community making contact with many of the aviation pioneers of the day, corresponding with Louis Blériot (1872-1936), Alberto Santos-Dumont (1873-1933), Ferdinand Ferber, Lawrence Hargrave, Otto Lilienthal, John Joseph Montgomery (1858-1911), Louis Pierre Mouillard (1834-1897), Percy Pilcher (1866-1899), the brothers' Wright, Gabriel Voisin (1880-1973) and of course a gentleman named Whitehead. It would be Chanute who would write that "The problem [of flight] is too great for one man alone and unaided to solve in secret." He would also write, "There were a number of observed wind phenomena, such as the lifting of roofs, the blowing off of bridges, and the tipping over of locomotives, which the known velocity and pressure of the wind at the time was insufficient to account for."

Already becoming known internationally Whitehead's glider flights were reported in Germany in the "Club News" of *Zeitschrift fur Luftschiffahrt* in January 1898. The work in the air performed by "Condor Gus" was accomplished by a glider with "two pairs of wings." The German aero clubs were keeping up to date on young Mr. Whitehead. "Gus" was an up and comer.

On March 4, 1898 the *New York World* published a report on the glider work being accomplished by Whitehead. The story contained a drawing (lithograph) of his staggered "symmetrical airfoil V-shaped elevator, rudder/vertical fin and what appears to be a rudder-tail wheel linkage." "Whitehead claims to have flown 4.5 miles in an unpowered ornithopter."

Whitehead was becoming well known to the general newspaper reading public in America as well as a man who was on the cutting edge of glider research in New York and perhaps expected to eventually fly not only gliders, but powered aircraft. After all no one expected flight research to end with unpowered gliders. Needless to say, Whitehead designed and built more than one test vehicle at a time; always looking for the best method to test the thin air.



New York World lithograph of Whitehead Wheeled glider, March 4, 1898

Once again a major New York newspaper was reporting on the flight efforts of ‘Gus’ Whitehead. The *New York World* founded in 1860 was at the time of Whitehead’s glider flights owned and published by Joseph Pulitzer (1847-1911) (yes, that one). Eight years before the report on Whitehead Pulitzer built New York’s tallest building at the time, the New York World Building on the corner of Park Row and Frankfort Streets. In 1898 Whitehead may not have been on top of the world, but one of the papers covering his flying efforts certainly was.

On October 21, 1898 the Whitehead’s had their first child Rose (Rosie), born in Baltimore.

A First in Manned Powered (uncontrolled) Test Flight!
Spring 1899 – Schenley Park, Pittsburgh, Pennsylvania, United States

“After his disaster in the park Whitehead renewed his work on the gas driven flying machine.”
Pittsburg Chronicle Telegraph

The event had come to general public attention once again some 35 years after it had first passed into the historical mist which has yet to be dispersed even to this day. It was the story of how an immigrant from Europe had come to America to seek his future – a future which aimed at the skies.

In 1934 **Louis Darvarich**, a friend of Gustave Albin Weisskopf had been approached by researchers seeking first hand information on some of the earliest days of powered and controlled manned flight. He was said to have first-hand knowledge of his friend Gustave’s efforts to become the first to fly a powered fixed wing aero plane. Mr. Darvarich who was 21-years-old at the time of the 1899 flight effort reported in his 1934 *affidavit* that he and Weisskopf, who had changed his name to Whitehead, had made “a motorized flight together of about half a mile in Pittsburgh’s Schenley Park.” If true this singular flight would completely upset the carefully crafted history we all learned in grade school that two brothers from Ohio had been the first to fly. (More on that in later chapters.)

It was a well selected area to test a flying machine. Schenley Park is today a large green area situated between Oakland, Greenfield, and Squirrel Hill. The park was originally created from 300 acres, donated by Mary Schenley in 1889, hence the name. Another 200 acres were added at a later

date purchased by the city from Schenley. It was later listed on the National Register of Historic Places, but one may guess not for the work done in the park by Whitehead who has yet to be recognized as a local 'Favorite Son'. One may expect to see that change once Whitehead is recognized for his pioneering efforts in aeronautical history as his work becomes much wider known.

Continuing his recollections in 1934 Louis Darvarich further recalled that the flight had cut into the thin air in April or May of 1899 and that they had been able to reach a height of some 20 to 25 feet. At the controls, such as they were, was Gustave, with Darvarich serving as stoker in the back of the craft for the steam-powered monoplane.

It would seem however that just getting the craft into the thin air was not enough as Whitehead was to soon discover, as control was also much desired if one is to be successful. Control by Whitehead so early in his powered aircraft work came only from shifting his weight causing his craft to pitch left or right, but even that much control it would appear was in the future. As Darvarich continued, he made it clear that crashing into a rather solid brick building near the second floor ended this first flight and landed him in the hospital for several weeks and "he had the burn scar to prove it". In a later interview Whitehead would comment that the flight, despite its rather abrupt conclusion, was "more or less successful." After all he had gotten it in the air, but a new method of control was needed. In point of fact any method of control would surely need to be invented before any more potentially disastrous flights could be attempted. Whitehead had not yet fully succeeded to fly a controllable craft, but he had tested the air in a powered craft and he had travelled further than anyone before him had been able to fly. Whitehead would later write, "To describe the feeling of flying is almost impossible, for in fact, a man is more frightened than anything else." The fact is Whitehead, as well as his stoker could have easily lost their lives attempting to fly as others already had. None of the early glider or powered machines were 'safe' by any means and it was understood that if any part of the craft failed it could very well mean death to the pilot.

In a letter to Whitehead's daughter Rose Rennison dated October 4, 1934, Mr. Darvarich answered some questions that had been asked by Miss Stella Randolph. "A horse and buggy were nearby and I was taken to the hospital in that. The plane was destroyed. Some parts of it were kept to build a new plane. It was in the late fall about three o'clock in the afternoon. The plane was starting from the top of a hill. It was only pushed a short way. The down grade was a means of starting without much pushing. No attempts were made before this time to try and fly the plane."

It was later reported that crashing into a building had caused the Pittsburgh, Pennsylvania police to forbid this aviation pioneer from continuing his efforts to reach the skies – at least in or near the city of Pittsburgh. It also seems that Whitehead's neighbors were not too pleased with his late night experiments on his steam engines, which at times blew up with some very loud reports. It was most distracting to the neighbors. This is probably why Whitehead decided to move to Connecticut. He needed an area where open spaces could be used to test his machines.

In its January 1935 addition *Popular Aviation* magazine, which began publishing in 1927, published an article by Stella Randolph and Harvey Phillips detailing Whitehead's 1899 steam engine experiments and his attempt to fly and control his craft in a suburb of Pittsburgh.

"Misinformed by so-called scientists of the day regarding comparative strengths of different metals under steam pressure, these two men had tested out boiler after boiler of different metals. And boiler after boiler had been blown to bits as they tried and tried for the mathematical and scientific exactness they required. The neighbors had not always shared the enthusiasm of their inventive friends during this stage of their labors, particularly as much of the experimental work had to be done after working hours at night, and many a neighboring windowpane went hurtling into the darkness along with the bursting boilers. But the tests resulted in the finding of a boiler that would somewhere nearly meet the requirements of the inventor."

And as to the historic flight attempt, "...in the Oakland suburb of Pittsburgh in the spring of 1899, when [a] much cruder steam-driven model [than his 1901 aircraft] had carried him and his assistant a distance of almost a mile. Firemen from the nearby No. 24 Engine Company had lent their assistance that time to start the machine, while the assistant fed charcoal to the flame which heated water in the ordinary kitchen boiler which they were using. The firebox had a sheet of asbestos at its base, then a sheet of iron over that, while the walls were made of clay. The engine itself was a two-cylinder one with a 4-inch bore and 10-inch stroke."

This early in his experiments it seems that not even Whitehead expected to succeed for any great distance. "No one expected the machine to go far on that eventful day. A distance of a few rods would have been sufficiently convincing in those days. But as they went onward and upward, steered by Gustave Whitehead at the controls in the front, they exceeded the distance originally planned and found themselves headed for a three-story brick house. Afraid to attempt to swerve, there was but one hope, namely that they might clear the top of the house. But they failed. Down fell the machine, all but demolished, while the agonized fireman in the back writhed with the pain of a scalded leg. The glasses for indicating water-level in the boilers had broken, permitting steam to envelop the man." The severe scars that he received in 1899 were clearly visible and displayed to interviewers in 1934.

The magazine continued, "Gustave Whitehead's flight had been brief too, not over a half-mile – less than 2,640 feet. Yet it was more than four years later that the Kitty Hawk flight of 852 feet, lasting only 59 seconds, took place, and eventually won the acclaim of the world."

In 1935 these words were blasphemy to the saints of Kitty Hawk and it would not be long before 'experts' reported that no-one could have flown before the brothers' Wright. This was a clear attack on the iconic Wrights and it needed to be squashed. After all even though Wilber had died better than two decades earlier Orville was still alive and for the powers to be this aging icon was not to be challenged by anyone. 'Official' American history had chosen their first flyers and were not about to change now – too much had been invested in the myth of Kitty Hawk to turn back now. After all, a monument had been built by the United States government at Kitty Hawk to that myth – officials had said the words – the fix was in. Nevertheless, the first full on crack in the myth of Kitty Hawk had been made and it was going to get much larger.

Needless to say Mr. Darvarich was not the only one in the park when Whitehead was flying his steam-powered craft. **Martin Devine** was 17 at the time and a Pittsburg fireman living in the Oakland area of Pittsburgh, near where Whitehead was living. In 1936, 54-year-old Martin spoke to Stella Randolph of what he had seen in 1899 in Pittsburgh. Devine was more than a witness he had helped Whitehead push his machine to the park. "...upon more than one occasion for a demonstration. (This of course indicates that Whitehead made more than one flight in 1899.) The plane was heavy and I do not recall being present upon the occasion of its flight, but believe I arrived immediately after it crashed into a brick building (of course one is not able to crash unless one first flies!), a newly constructed apartment house which I believe was on the O'Neale estate. (Devine reported that the flight accident occurred 'on the corner of Bates and Wilmont Streets.')

I recall that someone was hurt and taken to a hospital, but do not recall what one. As definitely as I can recall the plane was upon wheels." "I am able to identify the inventor Gustave Whitehead from a picture shown to me."

Louis Darvarich's widow, interviewed in 1964 by Major Robert Del Buono, recalled a Sunday when Whitehead's aircraft was tested but did not crash. "...my husband talked that they tried it out one Sunday, but they didn't have no gauge or something on it and it went up about six feet high – the plane, and it then came down. That was in Pittsburgh. They didn't crash into a house. It was a landing. An open space and cracked." Her recollections reinforce the understanding that there was a fact more than one brief test flight in 1899. In all other testing periods Whitehead made several glides or powered flights so a single test flight in 1899 would have been out of the ordinary for Whitehead. Still there was that brick building he flew into...

Charles Ritchey another resident of the local area at the time told Randolph in 1936 that he had seen the aircraft in 1899 in Pittsburgh's Schenley Park and had read about the flight. "[The aircraft] was anchored to the ground at the time I saw it." "I do recall of reading about and hearing of this plane making a flight in which it was supposed to have gained a height of about twenty feet and then it crashed injuring the driver." Randolph notes read, "He said the machine was in a roped off space and was tied down, but that they used to heat up the engine with charcoal for demonstrations."

Researcher and author Susan Brinchman wrote, "The Pittsburgh flight is thought to have occurred near Engine House No. 24, located at the corner of Wilmot and Ward Streets. Wilmot Street is currently known as 'Boulevard of the Allies.' According to Mr. William Burns, his father, a fireman there, told him about the plane. The origin of the flight has thus far been unknown... with the 379 acre Schenley Park a half mile away from several directions. Whitehead's house on Bates Street was one block from this accident site, as was the Engine House No. 24, on Wilmot Street." Brinchman would also report, "A **Mr. Johns** saw Whitehead's plane at the corner of Louisa and McKee Streets where it was being prepared for a flight."

Whitehead detractors point to the 1899 effort and exclaim that there were never any newspaper reports of Whitehead's efforts to fly during that year however, they are quite incorrect, perhaps intentionally. Informing its readers of the crash the Pittsburgh *Chronicle Telegraph* reported, "After his disaster in the park Whitehead renewed his work on the gas driven flying machine" "He has interested a number of capitalists in his invention, and they will supply him with funds to perfect his model." It is suspected that a bit more research into the 'flight' would render a few more newspaper reports or two of a man flying into the side of a building in 1899! Perhaps many more reports would have been made had the flight been successful, but because of the crash it stayed a relatively local news event as failed test flights of experimental aircraft were not uncommon at the time. Even the brother's Wright could have attested to that fact.

So there we have it; three witnesses (plus) living in different areas when interviewed in the 1930s telling essentially the same story of a flying machine from 1899, not to mention the published newspaper reports. It is granted that more eyewitnesses located or perhaps a medical report of the crash victim, a short notation at the fire house, a letter describing the event dated from 1899 or even a few more news reports would be useful, but since such time has passed... Nevertheless, it is clear that Whitehead had indeed built his aircraft and from the few reports, tested it in 1899 even though the result of his longest test flight was not what Mr. Whitehead was planning on. Certainly neither the newspapers, nor the eyewitnesses have ever shown any reason to lie about such events from 1899. Why would they? So in 1899 Whitehead attempted to fly under control but failed – in 1899 that is! However, a crash or two was not going to keep Mr. Whitehead grounded, at least not for long.

Eighty-three years after the event one William F. Trimble, a writer who was clearly not there in 1899, would scoff at such an early test flight, informing his readers that shifting his weight could not have given Mr. Whitehead sufficient control and thus he could not have flown. Yet was not insufficient control and the inability to lift the craft high enough said to be the actual cause of the craft's crash into the side of a building? And how would anyone discover that control was a problem unless they went out and flew! Control is never a practical problem when one is setting stationary on the ground. Mr. Trimble would also 'suppose' that the steam-powered engine would not have had enough power to lift such a craft, yet was he ever able to test such an engine? Did he know the power of the engine; the viability of the propellers or even the weight of the craft? Hiram Maxim and Samuel Langley would disagree with Mr. William F. Trimble having both built and successfully tested such engines during short 'flights' (i.e. hops) even earlier than 1899! In fact short manned 'hops' and powered take-offs had been made by Felix du Temple in 1874; Thomas Moy in 1875; Alexander Mozhaysky in 1884; Clement Ader in 1890; Hiram Maxim in 1894 and Augustus Herring in 1898!

Does Mr. William F. Trimble doubt their efforts as well? Perhaps more research is in order. And let's keep things in the historic context of the time. This was THE FIRST attempt by Whitehead to fly a powered manned aircraft after several others had already attempted to fly and had for the most part failed to move through the air controlled for any real length of distance or time. No one on Earth was a qualified pilot – no one! The fact that Whitehead did not have full control of his craft on this attempt is more than reasonable – in fact it would be fully expected. The type of understanding of flying he was attempting to learn literally 'on-the-fly' came only by actually stepping into the powered aircraft not by simply flying an unpowered glider. The surprise would have been if he had not crashed! So... we should report this as the first manned 'uncontrolled' powered aircraft flight of a good distance? It would not be long before Mr. Whitehead would add 'control' to his aircraft inventions – and that would take two years to accomplish.

No matter; Whitehead, as did others, realized that steam had taken aviation just about as far as it could go and that was indeed not very far. It was time to move on to internal combustion engines and this work was what Gustave Whitehead had been trained for and the record would show that he was a master at designing and building these types of engines. Some 40 different engines have been credited to Whitehead of various powers and types, many of them being purchased and flown by other aviation pioneers in the years to come. Those early aviation facts cannot be disputed by anyone, especially any writer who was not there in 1899.

A few months later the work of Mr. Whitehead once again caught the attention of local Pittsburgh newspapers. The *Pittsburgh Post-Gazette* on December 6, 1899 reported on his efforts. In December of that 1899 Whitehead reported that he was "still constructing his plane." It is a comment, when taken out of context said to discount his fabled attempt to fly in the spring of 1899, yet which plane was he constructing in December, number 17, 18 or was it number 20? It may be recalled that the *Chronicle Telegraph* did note that after the crash Whitehead was working on a "gas driven flying machine" which he was "still constructing" in December of 1899. He did report at the time that he had already flown in Boston (for the Boston Aeronautical Society) as well, but glider work is what he was probably reporting. As 1899 turned into 1900 there was much work to be done and he was determined to do it. No single crash was going to stop Mr. Whitehead.

As for the *Pittsburgh Post-Gazette* the newspaper had then as now a sterling reputation for honest reporting. Begun on July 29, 1786 the paper supported Lincoln for election in 1860, helped organize the Republic Party and was one of the first papers to report that tensions between the northern and southern states could well start a war. Beginning in the late 1930s the paper has won six Pulitzer Prizes. I think it is safe to expect that the *Pittsburgh Post-Gazette* could be trusted to report the facts. And the facts they were reporting on were about a man named Whitehead and his powered flying machines.

There was however another newspaper report of Whitehead's early test flight efforts published by *The Scranton Tribune* from December 11, 1899. This report confirms that Whitehead was indeed an early aeronautical pioneer working in Pennsylvania before the turn of the century. "Pittsburg has produced the latest apostle of 'Darius Green' in the person of a Mr. Whitehead, who has invented a flying machine. Unlike the scientific models of the day, Mr. Whitehead's machine has wings and wheels, and on the ground looks like a huge bird. (Machine Number 20?) When Mr. Whitehead gets his machine in operation he expects to present an appearance as imposing as that of a Pittsburg politician at a state convention." A picture of Whitehead's newest aircraft is reported to have been published in local newspapers, but that image has of this writing yet to be re-discovered. It was time for Whitehead to move to the industrial hub of Bridgeport, Connecticut.

In June of 1900 Whitehead's wife Louisa and daughter Rosie Whitehead are shown by the US Census as still living on Bates Street in Pittsburgh. Mr. Whitehead listed his occupation as 'machinist'.

Keeping Whitehead's test flights in historic context one finds Santos-Dumont in France flying his gasoline-powered airships (balloons) and Ferdinand von Zeppelin constructing his first rigid airship in Germany. In Dayton Ohio the brothers' Wright were struggling with the problem of manned control of their kites and gliders. And sadly by this time both glider giants, Lilienthal in Germany and Pitcher in England, had been killed in glider accidents! Experimental test flight would always demand such cost even into the future of manned space flights.

Some Short Early Preliminary Powered Test Runs
Late 1900/Early 1901 – Seaside Park, Long Island Sound, Connecticut, United States

When interviewed on November 13, 1963 by William O'Dwyer and Harvey Lippincott, **Mr. Anton Pruckner** was 80 years old, but well able to recall an early set of short test 'hops' made by Whitehead as well as himself at Seaside Park in 1901. These short tests were most likely made using Machine Number 20 or perhaps the first tests of Machine Number 21.

Mr. Pruckner told the interviewers that the machine had been driven along the road to Seaside Park from Hancock Avenue, "during the early morning hours." This was a requirement as the drive was conducted with the propellers operating and was naturally very dangerous to anyone walking along.

Pruckner recalled that they were "always experimenting" during that time and that both he and Whitehead had made short hops, learning as they went. (This is a very rare report of other individuals actually flying Whitehead's aircraft.) "You didn't know, some time, what you're doing when you get up there, no joking. Sometimes, we were shaking. No joking; it was some time shaking." Pruckner reported that, "Half a dozen flights" were made. "We didn't have any place to fly, you know. So he had to go to Seaside Park, and from the bank right on the water, over the water, see. Well, when we drop on the water, nobody got hurt. About the same time we rowed back again... I was [a] couple [of] times in it. You just go, if you drop down, okay, let's go and row it back. That's all you can do."

When asked how far these flight tests were flown Mr. Pruckner replied, "Oh, there was no more than about, say, 75, 80 feet (at around five feet in the air), right around where the bathing pavilion is now. I think that's the place."

It would appear that the boys of the Press missed this short series of short early morning test hops as no newspaper accounts have yet surfaced reporting on these experiments. As for Whitehead, these were not flights; they were only test hops – no need to inform the Press just yet. There was much more work to be done. Nevertheless, early flight history had been made.

More Unmanned Test Flights
May 3, 1901 – Fairfield, Connecticut, United States

"There's no question that Whitehead's designs were aerodynamically viable."
Trafford Doherty, Director: Glenn H. Curtiss Museum, Hammondsport, New York

On May 3, 1901 Whitehead and his assistants were once again ready to test his new aircraft, but only unmanned on this day. On that day he would make at least two test flights, reports of which would find their way to a New York paper *The Sun* on June 9, 1901. Published from 1833 to 1950 the paper reported that these tests had been conducted "some 1.5 miles from Bridgeport near the Village of Fairfield," a small farming community at the time along what has become known as the Gold Coast of Connecticut.

When interviewed Whitehead said that he had tested his machine “on the crest of a hill, right in [the] middle of the road... When the machine began to rise the upper engine is started and the lower engine automatically stops. It worked perfectly.” The paper continued its coverage of his powered unmanned test flights reporting that Whitehead’s aircraft was “undergoing repairs made necessary by an accident which happened at the machines trial flight (unmanned) on May 3 last. These repairs are nearly completed and at an early date the flying machine will again be tested. When and where the test will be made, Mr. Whitehead will not tell, because he does not want to be bothered with a crowd...” “I do not know when the next experiment will be made, but it will be soon.”

These test flights would also see publication in the *Minneapolis Journal* on July 26, 1901. These were significant testing efforts even though the new craft had yet to carry a man. Flight was a serious business and as stated earlier accidents and deaths were not uncommon so unmanned test flights were a must. In fact many would lose their lives attempting to test the skies and Whitehead was acutely aware of these losses. Locals Andrew Cellie and Daniel Varoui were noted in reports as assisting Whitehead during these early unmanned powered tests.

On this day Whitehead tested his machine on its first run with 220 pounds of sand as ballast in place of a pilot. The craft flew a reported 1/8 mile or some 660 feet to an altitude of some 40 to 50 feet. The motor was an acetylene-powered engine. The second test would stretch that distance to half a mile ending its work of the air after one and a half minutes by crashing into a tree! *The Sun* reported that the crash was mostly due to the fact that there was no pilot onboard as the craft ‘slanting downward and dashed bow on against a tree.’ The craft had hit the tree before Whitehead’s onboard engine times cut the engine. Rather than relying upon great secrecy Whitehead was more than happy to share the results of his aviation efforts with the world. The damage was done, but with no pilot on board, as was the case in 1899, no one was injured, that is other than Whitehead’s pride. However, Whitehead’s acetylene-powered engines had done their work well. It was time to repair his aircraft. On hand to aid in the repairs would likely have been Mr. John Fekete a local mechanic who during these early days had worked with Whitehead building his aviation motors. Mr. Fekete would later be interviewed about his mechanical work as well as his recollections of Whitehead’s aircraft flights.

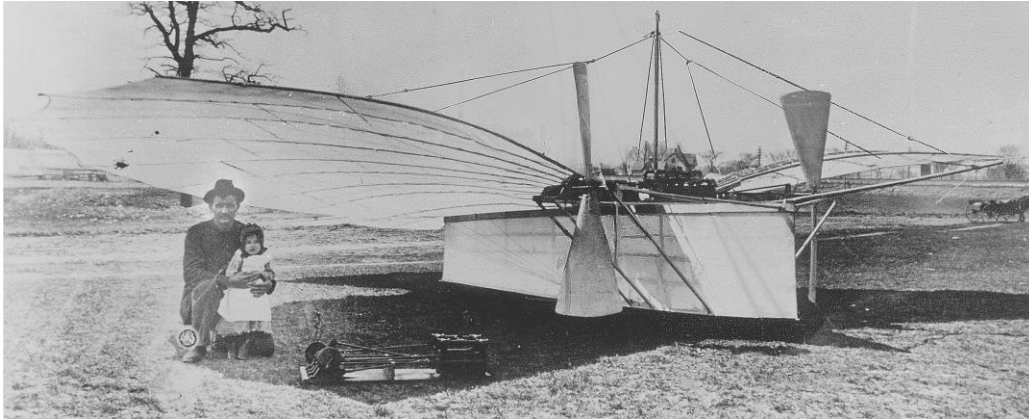
Newspapers in the United States as well as England and France were reporting on Whitehead’s powered unmanned test flights. Not to belabor the point, but this was 1901 some two years before the sands of Kitty Hawk played host to a couple of brothers from Ohio. These ‘glider’ flights of Whitehead were not just local news, as claimed by some detractors. The story was soon picked up by the *Piqua Daily Mail* on June 3 reporting that Whitehead claimed to have flown half a mile “near Fairfield, Connecticut.” The *Vermont Phoenix* also ran the story on June 21, but reported that “no free flight” (untethered) had been made. The work went on as it would be weeks before Whitehead and his assistants could be ready for his first manned attempt in the new craft. A photo was now expected, as Whitehead was getting close to challenging the air in his new powered craft.

The published photo shows a front view of Machine Number 21 with Whitehead seated on the ground holding his daughter Rose. To their front can be seen his motor used to propel the craft on the ground which includes its bicycle sprocket and chain. It was after all a powered machine and not a glider and Whitehead was just as proud of his hand built engines as he was of his ‘*Condor*’.

On June 8, 1901 *Scientific American* published an article on Whitehead’s work written by Stanley Yale Beach the son of the editor. In this work Beach described in some detail Whitehead’s “novel flying machine.” The article included two photographs of the “bat-like aircraft” sitting on the ground. In a later issue *Scientific American* would be able to report that Whitehead had made “short flights and flew short distances in 1901.” These articles are today easy to research and verify for anyone interested in the history of early aircraft development.

It is note-worthy to understand that these were not glider tests. These were full-scale test flights of Whitehead’s powered aircraft Number 21 intended to be some of the last pre-manned test flights of

his craft. And these test flights were being covered by newspapers in New York and Connecticut as well as the nationally distributed *Scientific American* magazine, which was also available in Ohio.



“Whitehead’s Flying Machine, Showing Engine and Propellers” and of course little Rosie.
(Image from the Flight Historical Research Foundation Gustav Weisskopf)

These pre-manned powered flight reports which had also found their way to Europe add a great deal of historic credibility to the longer powered manned flights set to be made by Whitehead a little more than three months in the future. News reports had covered Whitehead’s kites, gliders, unmanned powered test flights; the only event yet to report on was a manned powered flight by Gustave Whitehead. They had followed Whitehead’s experimental flight progress step by step. It is any wonder that the Press was delighted to report on that last manned step into the thin air of aviation history?

It is also interesting to note that Orville Wright would later attempt to discredit Whitehead’s flights by writing that Whitehead’s ground braking efforts in the air were only reported on “the back page of a local paper.” Clearly this is, shall we say, an incorrect statement at the very least. But when Orville made that statement he was an ailing 74-year-old and very much living in the past. Perhaps he had forgotten that Whitehead had flown at least two years before him and his older brother.

Beach continued his report, “A novel flying machine has just been completed by Mr. Gustave Whitehead, of Bridgeport, Conn., and is now ready for the preliminary trials. Several experiments have been made, but as yet no free flights have been attempted. The machine is built after the model of a bird or bat.” “The front wheels are connected to a 10-horsepower engine to get up speed on the ground, and the rear wheels are mounted like casters so that they can be steered by the aeronaut.”

“I found that he had built an aeroplane that was inherently stable and also was building engines. He built one of 20 horsepower and one of ten horsepower to propel it on the ground.”

“I saw no 10 H.P. engine for ground propulsion. The Whitehead aeroplane had many interesting features. It was inherently stable and could be flown safely, always ‘pan caking’ and landing on a level keel.” (Confirmation of earlier test flights reported by *Scientific American*.)

“On either side of the body are large aeroplanes, covered with silk and concave on the underside, which give the machine the appearance of a bird in flight. The ribs are bamboo poles and are braced with steel wires. The wings are so arranged they can be folded up. The 10-foot rudder, which corresponds to the tail of a bird, can also be folded up and can be moved up and down, so as to steer the machine on its horizontal course. (This is proof that Whitehead’s aircraft did in fact have horizontal rudder control a primary requirement for powered manned controlled flight.) A mast and bowsprit serve to hold all the parts in their proper relation. In front of the wings and across the body is a double compound engine of 20 horsepower, which drives a pair of propellers in opposite directions, the idea being to run the machine on the ground by means of the lower motor until it has the necessary speed to rise from the ground. Then the upper engine actuates the propellers so as to cause the machine

to progress through the air to make it rise on its aeroplanes. The wings are immovable and resemble the outstretched wings of a soaring bird. The steering will be done by running one propeller faster than the other”

This work of steering with propeller control, and wheels for ground run tests and take-offs were cutting edge in 1901. Whitehead had made several improvements over his 1899 design and it would not be long before he was ready to once again ‘test the air’. And even if he had not been able to fly Whitehead’s innovations were indeed cutting edge for 1901. He was more than an engineer; he was an inventor and aircraft designer. He was also probably unaware that at least some of his innovations were shared by Richard Pearse experimenting on his own aircraft half way around the world in the splendid isolation of Northern New Zealand. Both men shared the irritating trait of keeping very few records for aviation historians to follow.

Whitehead’s flying Machine Number 21 was described in an article by *Popular Aviation* magazine in January 1935. “The airplane used in 1901 had been constructed by Mr. Whitehead in its entirety; both engine and plane were his own idea. It was a monoplane with a four-cylinder two-cycle motor located forward. Ignition was of the make and break type and Columbia dry batteries were used. The gas tank was gravity-fed and held two gallons of petrol. The body of the machine was constructed of pine, spruce, and bamboo, reinforced with Shelby steel tubing and piano wires. The wing coverings were of Japanese silk, varnished and fastened to the bamboo struts with white tape. The wings spread out behind the two propellers, and were supported with wires running to a central mast. The entire thing weighed approximately 800 pounds. With Mr. Whitehead aboard the weight was increased to about 965 pounds.”

Designing both the engine and the aircraft, places Whitehead in the rarified air with few early pioneers who built both their aircraft and their power plants including Richard Pearse for one. This small group does not include the brothers’ Wright who were at the time seeking flight data on any other aerial craft they could find, and looking for an engine to power their craft.

The New York Herald, June 16, 1901

Connecticut Night Watchman thinks He Has found out how to Fly

Gustave Whitehead is a humble night watchman at Bridgeport, Conn. During the day, however, he is a scientist. He is devoted to problems of air navigation and is a compeer of Maxim, Langley, Von Zeppelin and others equally well known in aeronautics. He has built fifty-six flying machines. The present perfected invention is his fifty-seventh and in it, he embodies his principles of bird flight as applicable to man. Mr. Whitehead is a Bavarian and a worldwide traveler. He has studied and photographed the flight of the albatross in the South Seas, the vulture in India and the eagle in northern regions. He claims that what nature has done for ornithology, machinery can do for man. His ship has sailed the air for a distance of half a mile clear. He claims that airships on his plan will yet circumnavigate the atmosphere of the globe with a single load of fuel.

Whitehead’s air ship is built of wood, canvass and steel. The body is sixteen feet long and is mounted on wheels propelled by a small engine in order to get up speed enough to cause the ship to mount on the aeroplanes, or wings. The latter are of silk, ribbed with bamboo. They are shaped like bat’s wings and are stationary. Between these aeroplanes is an engine, which works a pair of propellers at the will of the operator, giving the ship its speed. This separate engine, is twenty horse power and is run by force developed from calcium carbide, whose gas is exploded by electricity in cylinders. This is also Mr. Whitehead’s invention. Aeronauts in America and Europe are watching the developments of the daring watchman-scientist’s invention with increasing interest.

A Preliminary Powered Manned Test Flight Series

(Short distance ‘hops’)
June 1901 – Bridgeport, Connecticut, United States

“I have no doubt flying machines will be as common as automobiles in a few years, and before you and I are old men there will be more travelling through the air than on land or water.”

There is another aspect of these early tests from 1901 which has come to light. The New York *Evening Telegram* from November 19, 1901 reported that, “Whitehead tested the machine for the first time last June, but his first successful test was made on August 14.” One young man named **Junius Harworth**, who became one of his trusted Bridgeport helpers, would inform researchers that Mr. Whitehead did in fact fly “short flight hops” in West End Bridgeport during the summer before attempting longer flights in mid-August.

For Whitehead a mere “hop” was not enough and would not have been successful in his mind as a true controlled flight. However in later interviews Whitehead modestly admitted to earlier test flights – manned as “flying more or less.” He also reported that these early manned tests were “not practical.” However, later historians would, if these test flights can be verified, see these aviation ‘hops’ as nothing less than ground breaking even though Mr. Whitehead would look upon them as “not practical” and perhaps not worth mentioning. Whitehead’s modesty is easily seen in the fact that not only did he simply number his craft but he called them ‘machines’ rather than flyers or even aircraft. A few well written notes on his part or at least a list of test flights would have been historic gold.

Researcher and Whitehead author Susan Brinchman remarked that these early tests were made, “along the Bridgeport Gas Company property, from Howard Ave., easterly to Wordin Ave. Then, at the eastern end of Pine Street, the plane was turned around, with additional hopping street flights occurring, returning to Howard Ave. Since there were houses and people around, and it was considered a risk, the place was then transported to Hancock Ave., where a flight was made at five feet in elevation. Multiple witnesses described preliminary powered, manned flights of Whitehead’s aeroplane on level ground, during the summer of 1901, including one local newspaper, the *Bridgeport Evening Post*...” There would be no doubt in the minds of the paper’s editors as to what had occurred.

The Bridgeport Evening Post, August 26, 1901

“Mr. Whitehead... finally commenced work on his present machine which he tested a few weeks ago in the old trotting [area] in the West End of the city and which worked successfully.”

Brinchman continued, “1901’s summer flights in Bridgeport, Connecticut could easily be credited as the first successful powered flights in the world, as brief as they were.”

In 1948 attorney K. I. Ghormley interviewed **Mr. Louis Lazay**, a tool maker by trade, who would sign an *affidavit* to the fact that around 1900 he had witnessed a short test flight conducted by Whitehead flown some 30 to 40 feet high at a distance of 175 to 180 feet. He may not have been clear on the exact date, but he was clear on the fact that as a young man of 14 or 15 years old he had witnessed a test flight of a “folded-wing plane...” “...driven by a gasoline motor.” He remembered the flight was off Bostwick Avenue which was near “St. Stephen’s School in Bridgeport, Connecticut.”

As far as eyewitness Louis Lazay was convinced, Whitehead’s test flights were not to be denied.

A Visit by the Brothers’ Wright

“Man will never fly in a thousand years.”

Wilber Wright, 1901

Speculation or perhaps just a bit more, focuses on a reported meeting (by several eyewitnesses) by Whitehead and the brothers' Wright in 1901/2. In point of fact as it turns out there were several meetings between these men. In the town of Bridgeport, Connecticut, Whitehead had his shop and is reported to have met the brothers who miss-represented themselves as 'investors'. At the time Whitehead was looking for investors to fund his expanding flight efforts. Building flying machines cost money and Whitehead was not a well-funded individual most of his life.

In the 1930s Stella Randolph, then hot on the trail of Whitehead's historic aviation efforts, took statements from two of the men who had worked closely with Whitehead and had their hands well into the construction of his flying machines. Both individuals made signed *affidavits* to the effect that the Wrights had during 1901 or 1902 visited Whitehead's shop. This would have been at least several months before the Wrights 'reportedly' flew in December of 1903. As reported in the January 1988 issue of *Air Enthusiast* magazine, "Both Cecil Steeves and Junius Harworth remember the Wrights; Steeves described them and recalled their telling Weisskopf (Whitehead) that they had received his letter indicating an exchange of correspondence."

Cecil A. Steeves further reported about the Wrights. "Mr. Whitehead then moved his shop to Cherry Street where he continued to do his experimenting, this location being opposite the old Wilmot and Hobbs factory, now occupied by the American Tube and Stamping Company. It was here that the Wright Brothers visited Mr. Whitehead during the early 1900s coming from Ohio and under the guise of offering to help finance his inventions, actually received inside information that aided them materially in completing their own plane. I was at the shop with him when they arrived and waited outside while they talked inside."

Mr. Steeves recalled quite a bit that day when he was interviewed on January 2, 1966 by William O'Dwyer and Albert E. Burr. "I can start right off by saying that I know the Wright brothers were here because I saw them. You can't take that from me. I was on vacation at the time, and I was visiting with Whitehead in his shack on Cherry Street. This was sometime in late August I would say. I can't recall whether it was 1900, late or 1901. I don't recall." "It was very, very dull; it had been raining; it was a very wet day. I was visiting Whitehead, who was going over one of his drawings and he was talking at this particular time about this drawing. I was very much interested likewise as I took a profound interest in mechanics. A knock came at the door. Whitehead opened the door, and the shorter, stockier of the Wright brothers said, 'Mr. Whitehead?' And he said, 'Yes.' And he said, 'We are the Wright brothers. Did you get our message?' Whitehead said, 'Yes. I did. But I didn't expect you to come.' He said, 'We are here to talk to you about the proposition we sent you.'" The proposition was about financial support.

The interview and subsequent *affidavit* also made note that Whitehead remarked to him, "Now since I have given them the secrets of my invention they will probably never do anything in the way of financing me." History shows that Whitehead's intuition was correct.

Anton Pruckner, another witness to the meetings who signed an *affidavit* on January 4, 1936, about these events, was asked how he was able to identify the two men as the Wright brothers who were relatively unknown at the time? Pruckner replied, "They had to introduce themselves. It was at this shop that he [Whitehead] was visited on several occasions by the Wright Brothers, Orville and Wilbur, during the period between 1900 and 1903. I believe the time of their visits was actually prior to 1902 because I left Bridgeport from two years, going sometime in 1902." He easily recalled that the two men had visited "more than one time." (In 1964 Pruckner attended a memorial service for Whitehead at the dedication of his new grave marker, once again remembering that meeting decades earlier.)

So... three individuals, and possibly others, most closely associated with Whitehead during this most critical period of time in the history of flight clearly remember a visit by the two men from Ohio. But are there other proofs of such encounters or even knowledge that the Wrights were aware that Whitehead was at work on the problem of flight?

News of Whitehead's August 1901 flight and expected future efforts were reported during the last few months of 1901 at least 79 times in newspapers across the United States and as far away as England, the Netherlands, Germany, France and Spain. This was not local news. Interestingly three papers in Ohio also covered the story including *The News Herald* out of Hillsboro Highland, the *Coshocton Daily Age* and the *Sandusky Daily Star*. Is it possible that the brothers' Wright missed these reports? It is recalled that the Wrights had earlier published a newspaper of their own, the *West Side News*, as well as running a printing business. So they knew the business quite well and would have had some close connections in the industry. However, it is possible for them to have missed these numerous stories, but not for long.

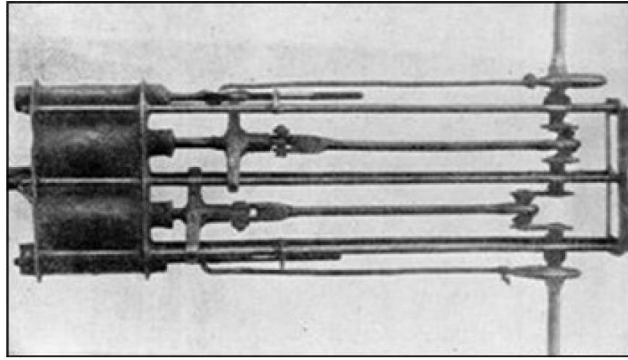
Whitehead's continuing efforts were reported in 1902 at least 29 times as far away as France, Australia and New Zealand. As before – news of Whitehead's efforts were not a local story. They were also reported in *American Inventor* magazine in April 1902 and *Aeronautical World* magazine in December 1902. Is it possible that the brothers' Wright missed all of these reports as well? After all these magazines, along with *Scientific American* which also published several articles on Whitehead's flights were on the cutting edge of reporting things aeronautics at the turn of the century. And it is well understood that the Wrights were always seeking news reports and data on flights as much as they could. The fact is they knew well the cutting-edge work being conducted by Gustave Whitehead.

In a letter dated July 1, 1901 Octave Chanute, President of the *American Engineer's Association*, wrote to Wilber Wright in which he referred to Whitehead. "I have a letter from Carl E. Myers (1842-1925), the balloon maker stating that a Mr. Whitehead has invented a light weight motor, and has engaged to build for Mr. [Matthias C.] Arnot of Elmira, a 10 H.P., 30 lb motor..." What he may not have informed the Wrights about was the fact that Mr. Chanute had helped finance Whitehead's construction of a Lilienthal type glider! Chanute knew Whitehead and his work quite well and more than likely had meet with Whitehead on more than one occasion privately and at the Fair.

Carl Myers, the man prominently mentioned in the letter, was to later become one of the managers for the 1904 St. Louis World's Fair and the superintendent of the Fair's Aeronautic Concourse which hosted the aerial races and balloon demonstrations of which he fully participated. It was a Fair that Whitehead would attend, but the secretive Wrights would not. Details later.

Wilber Wright, who was looking for a motor that he and his brother could use for their craft at the time, replied to the letter on July 4, 1901 referring to Whitehead's motor but interestingly not his name. "The 10-horsepower motor you refer to is certainly a wonder if it weighs only thirty lbs. with supplies for two hours, as the gasoline alone for such an engine would weigh some ten or twelve lbs. thus leaving only 18 or 20 lbs. for the motor or about two lbs. per horsepower. Even if the inventor miscalculates by five hundred percent it still would be an extremely fine motor for aerial purposes".

"The inventor?" Why not use Whitehead's name? They had written about other aviation pioneers. Had they already visited him by that time? Written in the same letter remarking on Whitehead's engine it is difficult to believe that Wilber Wright was speaking of anyone else other than Mr. Whitehead.



One of Whitehead's designed and built engines.

Continuing his letter to Chanute, Wilber writes, "...we do not expect to appropriate the ideas of others in an unfair way, but it would be strange indeed if we should be long in the company of other investigators without receiving suggestions which we could work out in such a way as to further our work."

Even before his 1901 flight Whitehead engines were well known as he had supplied his light weight engines to Augustus Moore Herring for his aircraft; Carl Myers for his airships, and was giving engine advise and written support to Lawrence Hargrave halfway around the world in Australia as well as several others working on the problem of powered manned flight. Myers, also well known in the aeronautical community, had built his first balloon over 20 feet in diameter in 1878. It held 10,000 cubic feet of hydrogen gas and he was of course well published at the time. The Wrights would have been familiar with his work. Years later Whitehead's engine building capabilities became part of a newspaper article. The *Bridgeport Evening Farmer* reported on June 20, 1910 that, "Gus Whitehead, as his friend's best know him, is one of the most expert engine builders in the world."

These are to say the least very interesting letters proving knowledge of "Mr. Whitehead" by the Wrights as early as July 1901. As for Orville Wright, he would deny meeting Whitehead or even stopping off in Bridgeport at the time and remarked that he had been there in 1909, but "only in passing through on the train." In today's language that would be called a lie!

However, things might not be quite that simple. At the time Whitehead lived in Bridgeport which was an industrial center then as now. One of his neighbors was the well known mechanical engineer, naval architect and submarine inventor who built some of the first submarines for the United States Navy, Mr. Simon Lake (1866-1945). He built his first experimental submarine *The Argonaut Junior* in 1894. The submarine was successfully tested at the Atlantic Highlands, New Jersey by Sandy Hook Lake which led to the formation of his Lake Submarine Company in 1895. Lake was a Quaker and a Mason who would eventually own more than two hundred patents for naval designs. He founded the Lake Torpedo Boat Company in Bridgeport, Connecticut in 1912. It would be at Bridgeport that he built 26 submarines for the United States Navy during and after World War I. To say the least Mr. Lake was very well known and well respected.

Lake was also a good friend of the Wrights who had reportedly discussed their glider flights with him as well as how they could apply for patents pertaining to their aircraft work. Lake's office would have always been open to the Wrights. Interestingly, Richard Howell, the same man who would represent the Press on August 14, 1901 to witness Whitehead's first flight, would also write a detailed article describing a test dive onboard Lake's submarine in Long Island Sound. This would have also been a local event. No one questioned the accuracy of his submarine report which was supported by several drawings, yet Wright supporters would go after his eyewitness account of Whitehead's test flight!

Author and Whitehead researcher William O'Dwyer would write, "When the Wrights sought a light weight engine for their powered experiments at Kitty Hawk, Octave Chanute urged Wilbur [Wright] (1867-1912) to look into the ones being built by Gustave Whitehead. Orville Wright denied they had ever visited Whitehead at his shop, stating they had only stopped in Bridgeport while on the train to Boston. That seems strange, for the Wrights were lent the use of an office by Simon Lake, Bridgeport's famed pioneer submarine inventor, as was reported in a Bridgeport newspaper. Men who worked in Whitehead's shop on Pine Street also recalled when the Wrights visited Gustave Whitehead." Got yah!

Simply stated the Wrights certainly knew of Whitehead; that he lived and worked in Bridgeport; they knew of his work on flight engines; they knew he was working on the problem of glider and manned heavier than air flight as they were in contact at the time with several other individuals working on the problem such as Samuel Pierpont Langley (1834-1906), Matthias Arnot, Samuel Cabot, Augustus Moore Herring, Octave Chanute and others. It is also quite possible that Whitehead showed the brothers his monoplane during their visit. If they were supposed investors there would have been no reason not to show them his already test flown aircraft. Oh... to have been there to see the look on their faces when they saw his flight tested aircraft, and its control surfaces!

So... it seems clear that the brothers' Wright did indeed meet with Gustave Whitehead in Bridgeport as numerous witnesses reported, not to mention the published reports, for there is NO reason to discount their testimony even though Mr. Wright never admitted to the meeting – it would not have been good for their later mythical reputations. After all they would soon attempt to convince the world that they had invented a manned powered aircraft all on their own and a pre-flight meeting with aircraft inventor and master engine designer Whitehead would throw a very large wrench into that well crafted myth. No need to share any credit with an outsider, especially a recent immigrant to the United States. Their work had to be an all American project! Perhaps a better explanation for the Wright denial is that amongst the many aeronautical people the Wrights were in contact with only Whitehead had the capability to beat them into the thin air! And it is possible that by the time they met Whitehead face-to-face they knew he already had!

A word or two on Professor Octave Chanute and the Brothers' Wright.

Octave Chanute had made contact with the Wrights beginning in 1900 after Wilber Wright wrote to him concerning an article in *Progress in Flying Machines*. History would show that Chanute encouraged the Wrights as he had done with many early aeronauts. He had even gone so far as to visit their testing area near Kitty Hawk, North Carolina, in 1901, 1902, and 1903 and is reported to have taken photos of some of their glider flights. Did he inform the Wrights of his support of Whitehead during these meetings? Surely when these men spoke of flight...

Along with these visits letters were exchanged between 1900 and 1910 by the hundreds. In these letters Chanute shared what he knew about aeronautics and felt that all should share equally what had been discovered in the area. He did however encourage these early aeronauts to patent their inventions. This easy openness did not sit well with the secretive Wrights who were not willing to share any of their work with anyone, even though they were more than happy to learn about what others were discovering. This was later explained by Wright apologists stating that the Wrights and their ideas about how to effectively control an aircraft in flight were unique, which they clearly were not.

Later Chanute publicly stated that he did not believe the Wright flying machine patent, which focused on wing warping, was valid as they had not been the first to develop or even deploy such techniques. He was quoted as believing such in published reports. "I admire the Wrights. I feel friendly

toward them for the marvels they have achieved; but you can easily gauge how I feel concerning their attitude at present by the remark I made to Wilbur Wright recently. I told him I was sorry to see they were suing other experimenters and abstaining from entering the contests and competitions in which other men are brilliantly winning laurels. I told him that in my opinion they are wasting valuable time over lawsuits which they ought to concentrate in their work. Personally, I do not think that the courts will hold that the principle underlying the warping tips can be patented.”

It is recalled that Edson Fessenden Gallaudet (1871-1945) was the first aviation pioneer to develop the method of wing warping for aero-control, experimenting with the method in 1896 and testing it in 1898 of which the Wrights were well aware. This did not stop the Wrights from acquiring a patent which included the method on May 22, 1906! Was that an honest patent? And if it is not can that 1906 error be corrected today in respect of those who actually did the work on wing warping and ailerons and other flight problems before the Wrights and have the famous patent rescinded? What will history demand? What will the American people demand when they learn the truth?

And for the record it should be noted that Octave Chanute, as a young man had witnessed the ascent of a balloon in Peoria, Illinois, in 1856, and thereafter became interested in aeronautics. Working on his many interests he developed his own ideas of flight which led to several patents of his own fully or in part in several areas including flight of which he openly shared with the Wrights BEFORE they flew including U.S. Patent 582,718 (US582718) *Soaring Machine*, U.S. Patent 582,757 (US582757), *Means for Aerial Flight*, U.S. Patent 606,187 (US606187) *Soaring Machine*, U.S. Patent 834,658 (US834658), *Means for Aerial Flight*.

As the years have gone by it has become much clearer that the Wrights were not being secretive to protect their successes; they were secretive to guard against their failures as well as what they had ‘learned’ from others! And with the Wrights monetary gain was the prime objective. These men were not the honest arbiters of the air we have all been taught to expect. There was indeed a dark side to the efforts of the brothers’ Wright and their claims of ‘first flight’.

As for Octave Chanute, he would go on for only a few more years, but before he went on his last ‘flight’ he left us with these words. “...let us hope that the advent of a successful flying machine, now only dimly foreseen and nevertheless thought to be possible, will bring nothing but good into the world; that it shall abridge distance, make all parts of the globe accessible, bring men into closer relation with each other, advance civilization, and hasten the promised era in which there shall be nothing but peace and good-will among all men.” World War I was but a few years in the very near future. Chanute lived long enough to see men fly freely into clear skies. He did not live long enough to experience the terror brought on by what would initially become known as the Great War of 1914-1918. What would Chanute, a man of civilization and peace, have made of men killing each other in powered aircraft over the blue skies of Europe?

A man called Weisskoph

He was born Gustave Albin Weisskoph in Leutershausen, Bavaria (Germany) a municipality in the district of Ansbach in 1874. History notes that the original settlers of Leutershausen were probably Frankish settlers arriving around 800 AD. It is located on the river Altmuhl some 8 miles west of Ansbach. The municipality is now most noted by Americans as the birthplace of Paula ‘Stern’ Kissinger the mother of Henry Kissinger, a former American Secretary of State. In the future it will be noted as the birthplace of Gustave Whitehead. It is now the home of the Aviation Pioneer Gustave Whitehead Museum established in 1974 which proudly displays a replica of his famous Machine Number 21 in which he made the first controlled powered heavier than aircraft fixed-winged flight and the Gustave Whitehead Memorial erected in 1991.

At an early age Gustave showed a great interest in flight, kites and how birds took to the sky. At a young age he gathered the nickname 'The Flyer'. Like those before him the study of birds gave Whitehead a rudimentary understanding of flight and gliding, but he understood that only so much could be learned in this manner. However, interest in birds what not what a career is made of at least at that time so Gustave was to a bookbinder to begin an apprenticeship which was not to last for long.

Gustave's father was a bridge construction engineer. At the age of 12 he lost his parents in 1886 and 1887, and his work as an aspiring bookbinder ended. Whitehead was soon living with relatives. This did not however end his interest in flight. He had earlier made tissue paper parachutes after studying his birds and at the age of 13, in the manner of de Falcuis, Eilmer of Malmesbury and Celebi, he took his leap of faith jumping from a roof wearing his cloth wings that he had designed and built. Needless to say his 'flight' was a short one – down!

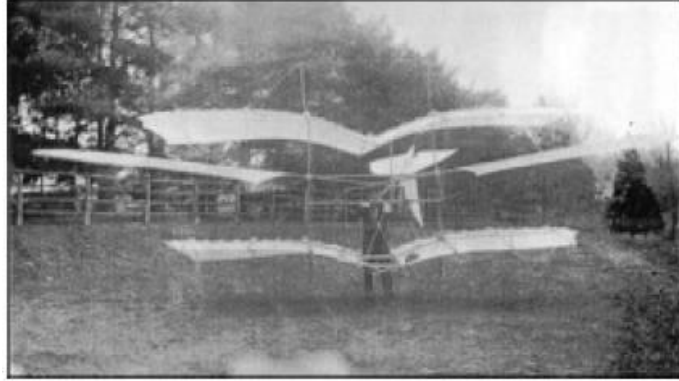
"Since I was a boy, going to high school in Augsburg, Germany, where I acquired some knowledge of mechanics and engineering, I have had the idea of a flying machine in my mind and then I made up my mind that I would someday be like the birds I was so fond of watching..." Whitehead even went so far as to capture birds and attach a tether to them in order to study how they flew at close range.

His next apprenticeship would be as a machinist in Augsburg, Germany which lasted for two years, which at the time was the full term of study. Whitehead now had all the skills and background he needed to become a builder of engines. Trained now as a mechanic, he would eventually find himself working as a crewmember on a ship. He may have first sailed as a cabin boy possibly at the age of 14 in 1888. It is reported that he spent a period of time around 1890 living with a family in Brazil working on their plantation. He made several voyages during his four years at sea where he studied the winds, birds that followed the ships, and how the weather affected their flight. "After leaving school I went to sea and sailed around the world five times. I remember once watching the big condors flying off the South American coast and trying to understand how they did it. I used to study the gulls too, as they would soar against the wind with outstretched planes moving apparently without the slightest effort."

During those four years repairing and maintaining sails and ship's rigging would have kept the young mechanic busy along with his work maintaining the ship's motors and possibly even repairing the ships propellers. These nautical experiences would served him well when later he was designing and building his aircraft, motors and propellers which as can be seen from photos have a decided nautical look about them. It is reported that Whitehead the seaman survived no fewer than four shipwrecks, the last said to have landed him on the Gulf Coast at the Florida Panhandle around 1893.

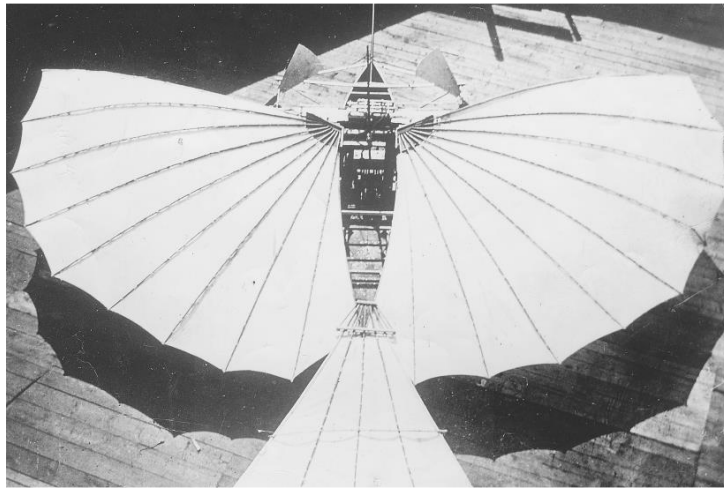
At some point in his early life it has been reported that he had sailed to Brazil where for a period of time he worked on a plantation before returning to the sea. This could have been when he sailed on the *Garmund*, a Norwegian ship (bark) that sailed the Atlantic between Europe and South America. An 1893 letter to his brother John in Germany remarked that he was "sailing on a Norwegian bark Garmund." In 1893/4 he returned to Germany to visit Otto Lilienthal after writing him to see for himself how the 'Glider King' was able to fly with some type of control. (It is possible he was able to work with Lilienthal for a short period of time.) He knew however, that true fully controlled flight would come only when engines could be built to power these gliders with much better control then possible with Lilienthal gliders. After he immigrated to the United States in 1895 he would 'anglicize' his name to Whitehead.

Due to his engineering skills and training he would become the Chief Engineer for the Boston Aeronautical Society soon after joining the organization. They may have gotten more than they had expected from the 21-year-old who had come to them not only with the skills of an engineer, but the innovations of an aircraft and engine designer. There would have been no doubt that this young man would soon be breaking new ground in the field of aeronautics.



Whitehead with one of his Lilienthal glider copies.

Some time during late 1900 Whitehead and his wife Louisa moved to Bridgeport, Connecticut to continue his experiments in aviation. He was entering a field of endeavor that had developed over several centuries and was about to fulfill a long held dream of mankind. By the time he was ready to begin his new series of manned powered flights Whitehead had become a very experienced glider pilot – now it was time to become the first pilot of powered manned aircraft.



1901 overhead view of Gustave Whitehead's powered monoplane.
A copy of which was sent to the 1904 St. Louis Fair officials in January 1902.
(Image from the Flight Historical Research Foundation Gustav Weisskopf)

*“Until some absolutely reliable motors can be found, at once light and powerful,
the aeroplane can never be really tested.”*

Alberto Santos-Dumont