

Reprint of the Connecticut Aeronautical Historical Association Inc. newsletter #16 from August 15, 1964.

GUSTAVE WHITEHEAD – AN OBJECTIVE ANALYSIS

By Harvey H. Lippincott

On October 10, 1927, a disappointed, embittered, tragic man passed away in defeat and poverty. He had seen his life's work in aviation eclipsed by that of others. Yet in his magnificent failure, he became America's great forgotten aviation pioneer and the Father of Aviation in Connecticut. When, with the onset of World War I, the Army swept his already antiquated biplane into the rubbish heap of time he turned his inventive mind to other pursuits, only to meet with a similar lack of success. During his last years, he found solace in religion and his Maker. Even in death his misfortunes continued to plague him. The mysterious depths of time enveloped him and he was heard of no more until ten years later when an inquisitive and interesting woman, Miss Stella Randolph, of Washington, D.C., wrote his biography. The biography brought him to the attention of an aeronautical world – then becoming conscious of its heritage. Of all things, the public accepted him not as a bona fide aeronautical pioneer but as a sort of curio, a dreamer, a false prophet! In his poverty the grave of Gustave Whitehead was allowed to remain unmarked for 37 years.

The time has come when this neglect must change. Gustave Whitehead, for all of his eccentricities, should be acknowledged as a great and true pioneer in early aviation. His work, innovations, conceptions, even though not crowned with ultimate success, were impressive and, in the view of the state of the art of his time, were significant. Whether or not Whitehead's airplanes ever flew is an unsettled question. There seems to be evidence that his airplanes made short flights or hops. But the proof required by current authorities to sustain his claims of flights of substantial length has not come forth. It is known that Whitehead never maintained extensive records of his work, and we are told he never took photographs of his flights. These are what the authorities say they need to establish the claims.

The Wrights took photographs of their flights, maintained extensive records and had several impartial adult witnesses of sound mind (impartial, being persons not connected with the experimenter or his work) to record their flights of 1903. They established their claims beyond doubt even though it was not generally accepted until 1908.

For some twenty years Whitehead built and experimented with many aircraft of differing configurations. We know that several of his gliders flew. It is believed by many that some of his airplanes flew short distances. His helicopters did not fly. His actual accomplishments were equal to or greater to most of his contemporaries as Langley, Ader, Chanute, Herring, Tatin, Maxim, Huffaker, and others. His later airplanes showed no greater, if not lesser, ability to fly. He did not establish a manufacturing facility or a training school. He was strong on the development of aircraft engines.

Gustave Whitehead was firstly an inventor, a practical mechanic with a passion to fly. He appears to have been less of a promoter and business man. A German, he spoke poor English and often

found communication difficult. He was in an inferior social and economic position than most of his contemporaries.

The Wright Brothers, after their splendid development of the airplane and invention of a practical control system, well realized that until they could properly market the airplane, little would come of it. Not only were they imaginative inventors, ingenious engineers, the Wrights were shrewd promoters and businessmen. Once perfected, they set aside the airplane for three years until they had successfully marketed it. They successfully established an airplane manufacturing business and a training school to train others to fly their airplanes.

In retrospection we must realize that Whitehead's best work occurred at a very significant period in aeronautical experimentation, 1895 – 1905. The world could count only a handful of serious aviation experimenters in that period, and only one, the Wrights, would achieve lasting success. Even Prof. Samuel P. Langley, after prodigious effort failed, yet in his failure he is today honored as an important early experimenter. Some have called Whitehead's 1901 airplane "preposterous," yet a critical analysis of its design shows it to be no more "preposterous" than the design of Langley's Aerodrome. In fact, the configuration of Langley's machine has not been employed in modern aviation, while the twin tractor propellered monoplane of Whitehead's concept has been commonly used for years.

A close engineering scrutiny of Whitehead's early work will reveal surprisingly well conceived concepts which later became commonly used in aviation; such as the monoplane configuration, wheeled landing gear, twin tractor propellers, a streamlined enclosed fuselage, folding wings for storage, aircooled gasoline engines.

Whitehead worked in a significant period. Because of this and because of the sensibility of his creations, his early work is of historical and technical interest. For this he should receive due credit.

In understanding Whitehead we must come to grips with his personality, which often did him a disservice. In this he was not necessarily unusual, as inventors often have "unusual personalities." Those of his friends and associates who are still living relate that he was a kindly, friendly, reserved, preoccupied, honest man, with a dash of shyness, genius, impatience and irritability. He was a dreamer whose expansive thoughts and concepts brought him into conflict with his more earthly contemporaries. Whitehead had a tendency to oversell both himself and the capability of his aircraft. It is believed that he honestly believed that he could do these things which he conceived. Often he was inconsistent in his statements from day to day. In time his backers and contemporaries in aviation came to doubt his word. Samuel Cabot, who financially backed his 1895 flying machine in Boston, eventually became so disenchanted with the repeated delays and failures of Whitehead's machine to fly, eventually called Whitehead a "liar," and so informed the small, but influential aeronautical fraternity.

This 1895 machine was essentially a [Lilienthal biplane glider](#) with man-powered flapping wings between the fixed planes. Whitehead learned, as had others before him, that man's muscular power is insufficient to provide aerial propulsion. Later, as a glider, some flights were made.

Discredited, Whitehead eventually settled at Pittsburgh, where he obtained employment in a coal mine and proceeded to continue his aeronautical experimentation. Here he developed steam powerplants and built a monoplane. On the take-off run in 1899, the airplane crashed into an apartment

building and the boiler exploded, [sic] injuring the firetender. Whitehead was unhurt. Some say the aircraft was airborne[e]. In any event, the disastrous experiment moved the police to convince Whitehead to leave Pittsburgh in the interest of public safety.

It must be remembered that in these early days, people working in aeronautics or declaring that they intend to fly earned for themselves public ridicule and hostility. Such people were generally thought to be mentally unbalanced, the kindest public term being, "eccentric." After a few exposures to public ridicule, most early experiments became retiring and even secretive. Such was the personality transformation which Whitehead also underwent. Even the great Prof. Langley, Secretary of the Smithsonian Institution never recovered from his mortification and shock of the public vilification and derision heaped upon him when, in 1903, his Aerodrome refused to fly. It is said that his early death resulted from a "broken heart."

As the years passed, Whitehead became more reserved and retiring from public contact. That the public reaction has its effect upon Whitehead's personality, there is no question, to escape public ridicule, he did more of his flight attempts as night and very early morning. This retirement from the public eye only increased the public suspicion.

In 1900 he moved to Bridgeport [Connecticut] and began work upon the airplane that was to be his most important, No. 21. Here he developed his early internal combustion engines for this airplane. On these early powerplants and the first airplane built in Connecticut, Whitehead's 17-year old associate, Anton Pruckner, who is still with us today, assisted. No. 21 was a monoplane, based upon the Lilienthal design, with a fuselage, propellers and powerplant added. It actually was quite a modern looking airplane.

Whitehead announced on August 14, 1901, No. 21 flew for half a mile, and later a mile and a half.

Pruckner has related to the author that the airplane made many trial runs before then, that that the power available was insufficient. First a two cylinder, then a three, and finally a four cylinder engine was made by them and installed before the airplane eventually has enough power to get airborne, according to Pruckner. Pruckner and other witnesses state that these early flights were of short duration, of one hundred to three hundred feet, and five to twenty feet in altitude. Regretably [sic], photographs and impartial adult witnesses were not available to record these events.

It should be remembered that in 1903 the Wright claims to flight were generally discounted and disbelieved. When at Fort Myer, Va. In 1908 they proved to the world their mastery of the air, then the Wrights laid before the public their photographs of their first flight and brought forth their witnesses. With this proof, the public accepted their 1903 flight claim. By his lack of documentary proof, Whitehead neglected to safeguard his claims. Whether or not his flight claims can be authenticated to the satisfaction of aeronautical historians and scholars will depend much upon the discovery of new evidence.

In 1902, Whitehead built a new airplane, called No. 22. It was very similar to the previous airplane but contained various improvements and had a water tight hull. In this airplane he claimed more extensive flights along the Connecticut Shore Line, using the water to land upon.

The next year Whitehead began the construction of a large monoplane glider, patterned very much upon the configuration of a sea gull. About this time Stanley Yale Beach, then an aviation writer for the Scientific American Magazine, became much interested in Whitehead's work; to such a point that he began to supply most of the funds required.

According to Beach's accounts, this glider flew successfully and was "the most inherently stable machine that he had seen." Together they filed a patent on the design of this glider on December 29, 1905. Patent 881,837 was granted on March 10, 1908.

About 1905, an engine and a single propeller was added to the "sea gull." According to Beach this arrangement did not fly successfully due to the great weight and low power of the powerplant.

From here on, Whitehead's activity is not so well known. Between 1900 and 1905 Whitehead had written various letters to trade periodicals describing his work and accomplishments. Furthermore, a number of articles had been written about him. The regrettable [sic] disagreements with certain financial backers who publicly made known to the close-knit aeronautical fraternity their disenchantment with Whitehead, coupled with the general disinterest and ridicule of the public toward aeronautics and those "lunatics" who try to fly, began to have its effect upon Whitehead. Firstly, he himself became more retiring, and secondly, the press and the aeronautical fraternity had lost confidence in him as a serious, reliable experimenter. Because of Whitehead's poor record-keeping and infrequent press reporting, his work between 1906 and 1915 is ill-defined. Photographs exist showing two different Chanute-type triplane gliders, one in actual flight during this period.

Apparently about 1907 work began with Stanly Y. Beach upon Whitehead's famous biplane. A picture was published in 1908 showing the incompleated [sic] airplane with two propellers. The Association has several original photographs dated January, 1910 showing a completed biplane with a single propeller. Later, it appears the biplane was again converted to a twin propeller version.

The late famed airplane designer, Vincent J. Burnelli, related to the author in January, 1964 that Whitehead had his twin-propeller biplane in a large hangar on Hempstead Plains, Long Island, New York in 1914. He said that he and his friends occasionally would visit the hangar. Early in World War I the U.S. Army purchased Hempstead Plains and created Hazelhurst Field. All tenants were evicted. Burnelli did not remember what became of Whitehead or his biplane but probably it was junked amid outrage toward the military. For the rest of his life Whitehead is known to have held hostile feelings toward the military and the use of aircraft for military purposes. This incident seems to have brought to a close Whitehead's active aeronautical experimentation.

About 1911 to 1913, Whitehead set aside the biplane for a time to develop the helicopter. He is believed to have built two helicopters, one his own and one for Lee S. Burrige of Burrige's design. Neither was successful.

Throughout the entire period of experimentation, Whitehead designed and built many aircraft engines of all types: steam, gasoline, kerosene, acetylene and gun powder-fueled; four and two cycle; spark ignition and compression ignition; aircooled and water cooled; in 1, 2, 3, 4, 5, and 8 cylinders and in configurations of horizontal opposed, vertical, and vee; and from less than one to two hundred horsepower. Some of his engines were unsuccessful, notably the gun powder engine, while most of his later engines were quite successful.

Whitehead engines successfully powered in flight, Charles Witteman's Curtiss Pusher type in 1909 and Beach's Beach-Willard Bleriot Type in 1911. The 200 hp vee engine successfully powered Beach's speed boat.

With the close of his aeronautical work, Whitehead applied his inventive genius to other fields, developing a horizontal windmill, railroad safety devices, and concrete road-laying machinery. He had shown an early interest in concrete. In 1901, he laid a circular concrete runway at Bridgeport, upon which he captive-tested his airplanes by pulling them forward with a whirling steam powered arm. This probably is the world's first concrete airplane runway.

Whitehead devised many ingenious innovations for his day, most of which are in everyday use on today's aircraft. Further, he was the first to develop and incorporate certain ideas, which had been previously conceived years before by earlier minds, into his aircraft and engines. He was the first to fold the wings of an airplane (No. 21), and drive the airplane under its own power (from his home to the flying field) – the "Aeromobile" concept, so often advocated in recent years. He is the earliest to have built and used ground-adjustable pitch propellers. In the United States, he was one of the first to use landing wheels, the monoplane configuration, twin propellers, air-cooled engines and a boost-control system among other concepts. Further, he conceived a VTOL aircraft.

Whitehead deserves more credit than has been previously accorded him. He was an important early aviation pioneer and experimenter and justly deserves the title: "Father of Aviation in Connecticut."

Copied from an "OFFICIAL STATEMENT" issued by His Excellency, John Dempsey, Governor, State of Connecticut:

STATE OF CONNECTICUT

By His Excellency JOHN DEMPSEY, Governor: an

OFFICIAL STATEMENT

GUSTAVE WHITEHEAD DAY

AUGUST 15, 1964

The Connecticut Aeronautical Historical Association is bringing highly deserved recognition to a pioneer in the field of aviation who has been wholly forgotten by the public, even in the State of Connecticut where his highly important work was carried out.

As early as 1901, Gustave Whitehead of Bridgeport was building aircraft and aircraft engines.

Apparently it never will be possible to settle the controversy over the question of whether Gustave Whitehead's plane actually made a flight, as he claimed. There is, however, no doubt that his inventive genius contributed much to the aviation industry which now occupies so prominent a place in Connecticut's economy.

On Saturday, August 15th, the Connecticut Aeronautical Historical Association will dedicate a monument at the previously unmarked grave in Lakeview Cemetery, Bridgeport, where Gustave Whitehead was buried after he died in obscurity 37 years ago.

In further recognition of Connecticut's forgotten genius, I am pleased to designate August 15th as GUSTAVE WHITEHEAD DAY, and to urge that all honor be accorded to him as The Father of Aviation in Connecticut.

SIGNED: John Dempsey
Governor