Evidence for pre-Wright flights by

Gustave Whitehead

Jan. 1, 1874 (Leutershausen) – Oct. 10. 1927 (Fairfield)

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Evidence for pre-Wright powered flights by Gustave Whitehead

John Brown
1). Issue and Standard

At issue is whether evidence to support Gustave Whitehead’s first flight exists and whether it substantiates a powered flight predating the Wrights’ which rises to an evidentiary standard exceeding a “preponderance of the evidence”.

The issue and standard are often subsumed by a once-secret, 1948 contract with the Wrights’ heirs (Exhibit A) requiring Smithsonian employees to uphold the Wrights’ first flight claim. Non Smithsonian-accredited historical and legal experts hold that contract to be clearly unethical.

2). a). Documentary Evidence:

At least five separate, pre-Wright flights by Whitehead are documented by contemporary media:


II). On Aug. 26, 1901 the “Bridgeport Evening Post” reported on its front page another flight by Whitehead at the old trotting park in Bridgeport and that he’d been hired to do further demonstration flights at Atlantic City, N.J. (Exhibit C).

III). While on his way to Atlantic City, Whitehead gave an interview in Philadelphia. He arrived in Atlantic City on Sept. 1, 1901 and began assembling his plane. On Sept. 8, he was ready and waiting for favorable winds. On Sept. 25, 1901 he was reported to have flown again (Exhibit D).

IV). Whitehead returned to Bridgeport where, on Nov. 17, 1901, the “Bridgeport Sunday Herald” reported on its front page that he had flown twice since his first flight (Exhibit E). (On Jan. 26, 1902 and May 31 1903, the “Bridgeport Sunday Herald” referred again to Whitehead’s flights in the Summer of 1901 – Exhibit F).

V). On Sept. 19, 1903, “Scientific American” reported that Whitehead made a powered flight over a distance of 350 yards (Exhibit G). Previous articles in aeronautical journals had announced in advance Whitehead’s plans to attach a motor to that particular airframe (Exhibit H).

On Oct. 1, 1904, The “Bridgeport Standard” reported that two photos of Whitehead in flight were on display at an exhibition in Bridgeport (EXHIBIT I).

On Jan. 27, 1906, “Scientific American’s” Aeronautical Editor published an eyewitness report about seeing a photo of Whitehead’s 1901 aircraft in powered flight on the wall of an aeronautical exhibition in New York (Exhibit J). [Panorama photos of that exhibit exist, however, when enlarged, individual photos on display are too blurred to be positively identified. The only persons claiming to know for sure what the blurred image shows are Wright proponents.]

[If the flights reported above never happened, either the journalists all made the same mistake or they were all part of the same conspiracy.]

2). b). Testimonial Evidence:
17 witnesses testified in writing to having seen pre-Wright, powered flights by Whitehead. One was a journalist invited to watch, two were engineers, two were JPs. 12 testified under oath. 10 testified before a public notary (EXHIBIT K). (Another 12 witnesses testified to having seen such flights, but were unable to recall the date.)

[Again; if those flights never happened, either the witnesses (who testified at different times, in different places and many of whom didn’t know each other) all made the same mistake or they were all part of the same conspiracy.]

2). c). Technical Evidence:

The wing Whitehead used on his 1901 aircraft was an almost exact replica of the same wing Otto Lilienthal used to make almost 2,500 glider flights between 1891 and 1896 (EXHIBIT L).

In 1908, Whitehead’s 1901 engine was examined personally by the highest-ranked, presidentially-appointed aviation expert in the US, Charles R. Wittemann. Wittemann swore under oath that Whitehead’s 1901 aircraft was airworthy (EXHIBIT M). [Note: no witness testimony carries greater weight than an independent expert appointed by the US President to a national aviation body.]

At an aeronautical exhibition, 1906 in New York, the entire fuselage and powerplant of Whitehead’s 1901/2 aircraft was put on display and labelled as the aircraft “that flew”. Its motor was examined by Carl Dienstbach, Aeronautics Correspondent for two European and two US Journals, and reported to be capable of 18-20hp (Exhibit N).

Two replicas of Whitehead’s 1901 aircraft flew successfully in 1986 and 1997 (Exhibit O).

Whitehead built and commercially sold aircraft motors worldwide from 1898 until 1912 (Exhibit P).

Whitehead disclosed a steering system which coordinated wing warping and rudder in an aeronautical journal published in Ohio on Dec. 1, 1902. That was nearly four months before the Wrights disclosed their essentially identical system on March 23, 1903 (Exhibit Q).

Further technical issues stipulated by Dr. T. Crouch, Smithsonian Curator, on 6-24-2013 in Dayton are:

- Whitehead was a trained engine-builder;
- From 1894/5 onward, Whitehead worked at Harvard’s Blue Hill Observatory, then until 1897 as a mechanic for America’s first aviation organization, the Boston Aeronautical Society;

Almost all aircraft flown today bear the technological principles of Whitehead’s 1901 plane (i.e., tractor powerplant, rear elevator, monoplane, wheeled undercarriage, wing dihedral).
What’s the evidence for the Wrights’ claimed powered flight on Dec. 17, 1903?

The Wrights’ claim to have invented and flown the world’s first, practical aircraft in 1908 is well-documented. However, their claim to have made the world’s first powered, sustained, controlled flight in 1903 is based on the following:

3). a). Documentary Evidence:

No reporter was present or invited at Kill Devil Hills (near Kitty Hawk) on Dec. 17, 1903. The Wrights stipulated that only five persons were present, three life guards and two passers-by (Exhibit R).

Orville Wright stated publicly that, on Dec. 17, 1903 he listened passively while the life guards falsely claimed to a reporter over the phone that the Wrights had flown three miles (Exhibit S). Two weeks later, in a press release on Jan. 6, 1904, the Wrights accused that journalist of having committed a crime by illegally intercepting a telegram to their family (Exhibit T). [In fact, all the journalist had done was to report what he’d been told by those present.]

When the Wrights did invite 12 reporters to see them ‘prove’ that they could fly on May 23, 1904, the reporters (and even the Wrights’ own family members – father and cousin) wrote that the Wrights failed to fly (Exhibit U).

The first journalist claiming to see the Wrights fly (on Sept. 20, 1904), Amos I. Root, published his report 102 days later on page 36 of a beekeeper’s journal. It opened with a Bible verse, invoked the Arabian Nights Fables and was illustrated by a school, a church and a child reading the Bible. Root asserted that the Wrights placed 70lbs. of cast iron – about ¼ of the aircraft’s empty weight – on the nose of the aircraft to balance it (Exhibit V). (In Jan. 1906, Root’s report was syndicated to the New York Times and spread around the world.)

3). b). Testimonial Evidence:

Only one of the five persons (besides the parties themselves) made a comprehensive, written (i.e., examinable) statement about what transpired on Dec. 17, 1903. Life guard, John T. Daniels, testified that the flight was made from a hill (i.e. descending, not sustained) and that it ended in a crash so severe that further flights were cancelled (i.e., not controlled) (Exhibit W). [Clearly, the only verifiable witness statement contradicts the parties’ claim.]

3). c). Technical Evidence:

On Sept. 1, 1908 (five years later), Orville Wright released the famous Kitty Hawk photo. It shows an aircraft which appears to have just left a rail. The aircraft has a front control surface (elevator) which is angled steeply upward (Exhibit X). When the 1903 Wright Flyer was measured by scientists in a wind tunnel at NASA’s Ames Research Center, it was found that that same front elevator stalled at an angle of 5° to 6° (Exhibit Y). However, the photo shows an angle far in excess of that. Since the aircraft was traveling at minimal speed, the only possible explanation is that it was in a deep stall (i.e., failing to get airborne). [This is science/physics. Unlike a witness statement or news article, it’s not subject to “historical interpretation”. Scientific understanding of the Laws of Aerodynamics has come a long way since 1903. Those laws aren’t invalidated by famous photos.]
In a Dec. 1987 letter to the aviation historian, Leo Opdyke, the current Senior Aeronautics Curator at the Smithsonian, Dr. Thomas D. Crouch, admitted that the attempted flight shown in the famous Kitty Hawk photo was unsuccessful (Exhibit).

The assertion by Amos Root (above – Exhibit V) that the Wrights balanced their 1904 aircraft by adding iron weighing ¼ of its empty weight to its nose is – even to a layperson – patently absurd.

All replicas of the Wrights’ 1903 aircraft failed to fly. All attempts to prove its airworthiness either mathematically, via computer analysis, in wind tunnels or as models failed, too.

Almost no aircraft flown today bear the technological features of the Wrights 1903 plane (i.e., pusher powerplant, front elevator, biplane, skid undercarriage, wing droop).

**Conclusion:**

Gustave Whitehead’s 1901 first flight claim is based on multiple, independent and credible sources. It rises to the evidentiary standard: “clear and convincing”. The Wrights’ 1903 claim is based on the parties’ own claim and is at odds with documentary, testimonial and scientific evidence. It fails to meet even the minimum standard of a “preponderance of evidence”. The Century-long assumption, “if they flew so well in 1908, then they must have flown in 1903, as they claim” applies faulty logic.
Exhibit A: Wright-Smithsonian Contract, Nov. 23, 1948, p.3

(d) Neither the Smithsonian Institution or its successors nor any museum or other agency, bureau or facilities, administered for the United States of America by the Smithsonian Institution or its successors, shall publish or permit to be displayed a statement or label in connection with or in respect of any aircraft model or design of earlier date than the Wright Aeroplane of 1903, claiming in effect that such aircraft was capable of carrying a man under its own power in controlled flight.
Exhibit B: Aug. 18, 1901, “Bridgeport Sunday Herald”, p.5. [Critics – including Orville Wright – have contended, the article below was meant as a practical joke.]

the air ship. She was flying now about fifty feet above the ground and

He had now soared through the air for fully half a mile and as the field ended a short distance ahead the aeronaut shut off the power and prepared

the machine darted up through the air like a bird released from a cage.
Exhibit E: Nov. 17, 1901, the “Bridgeport Sunday Herald”, front page. Reference to two flights made “recently” after the flight in Summer 1901.

[Probative value: The Herald’s decade-long repetition of the original first flight report disproves the theory of “credentialed historians” who assert, the Herald report had been intended as a “joke”.]

Front of airplane, showing operator in position.

This is the description of the airplane flying machine.

The current supplement, No. 144, contains the second installment of “The Mechanical Handling and Controlling of Coal and Coke,” illustrating the best foreign practice. “The Siemens & Halske Fire Alarms” gives detailed illustrations of the Berlin fire and accident alarm, and other types not shown elsewhere. This number is packed with a number of valuable formulas. An article on a “Vertical Color and Pedal Laboratory” is devoted to an up-to-date technical and research laboratory built with special reference to the examination of paints and dyes. “Artificial Silk, a Problem in Chemical Invention,” describes this most interesting duplication of natural silk. The present issue of the Art of Electro-Underpaint on for Sleepy Towns.

 Selected Recipes. Selected Recipes and Trade Secrets from United States Grundy are to be found in their accustomed places.
Exhibit H: Articles announcing that Whitehead will attach a motor to his triplane; May 31, 1903, p.4, “Bridgeport Sunday Herald” and Sept 1, 1903 “Aeronautical World”, pp. 270-271.
Exhibit I: Oct. 1, 1904, The “Bridgeport Standard”. Article by a local newspaper (a competitor of the one which reported the first flight), stating that photos of Whitehead in flight currently on public display at an exhibition substantiate the assertion that Whitehead successfully flew.
Scientific American

JANUARY 27, 1906

Scientific American testifies to seeing a photo of Whitehead in successful powered flight in his 1901 machine at an aeronautical exhibition in January, 1906 in New York.

**Exhibit K**: All 17 statements by persons testifying to having seen pre-Wright flights by Gustave Whitehead can be found here: [www.gustave-whitehead.com](http://www.gustave-whitehead.com)

**WITNESSES:**

- Richard Howell, Journalist/Editor:
  
  „Last [] Wednesday morning [] Gustave Whitehead [] soared through the air for fully half a mile.‘‘ Aug. 18, 1901

- Joe Ratzenberger, Policeman, JP
  
  “I remember very well one of the [] planes [of] Gustave Whitehead, [in] July or August of 1901 or 1902, [] started in flight on the lot between Pine and Cherry Streets [and] flew at a height of about twelve feet [] and traveled the distance to Bostwick Avenue before it came to the ground.”
John S. Lesko, Undertaker, JP

“I recall very distinctly recall the work of Gustave Whitehead. [He] flew his folding winged plane in August, 1902 on Fairfield Avenue. On about September 1901 I was present when Mr. Whitehead succeeded in flying his machine, propelled by motor, on a flight of 50 ft. intervals distance, at about four feet off the ground.”

Junius Harworth, Packard Engineer

“Oh August fourteenth, Nineteen Hundred and One I was present and assisted when Mr. Whithead succeeded in flying his machine, propelled by a motor. The distance flown was approximately one mile.”

Anton Pruckner, engineer

“I was present at the August 14, 1901 flight. The flight was about ½ mile in distance overall and about 50 feet in the air.”

“In approximately April or May, 1899, I was present and flew with Mr. Whitehead on the occasion when he succeeded in flying his machine, propelled by steam motor, on a flight of approximately a half mile distance, at a height of about 20 to 25 feet from the ground. In 1902 I was present on another occasion when Mr. Whitehead succeeded in flying his machine, propelled by motor, approximately four or five feet off the ground.”
Elisabeth Koteles

“I witnessed one of the [] tests of an aircraft built [] by Gustave Whitehead. [] It was around 1901. [] The craft lifted off the ground [] to an elevation of approximately 4 to 5 feet and [] flew for a distance of approximately 150 to 250 feet.”

Mary Savage

[Referring to photo of 1901 plane]: “As dawn came along, the breeze came up and all of a sudden the plane went up in the air. [] It [] flew to about fifty or more feet in the air; it headed toward Seaside Park and the water in the harbor. The plane settled down in the water rather hard”

Cecil Steeves

"Whitehead did build and fly his plane back in the year of 1901. [] I believe I am one of the last persons living today who saw that plane fly."

Alexander Gluck

"Approximately 1901 or 1902 [], I was present [] when Mr. Whitehead succeeded in flying his machine, propelled by motor on a flight of some distance, at a height of four or five feet. "
Michael Werer

“About Sept. or Oct. 1901 I was present [] when Mr. Whitehead succeeded in flying his machine, propelled by motor on a flight of about four hundred feet, at about six feet off the ground.”

Frank Layne

[Referring to a 1901 visit to friends right after discharge from the Navy:] "I never knew Whitehead []. All I did was watch him fly [] about a quarter of a mile.”

John F. Fekete

“In May or June of 1901 [I] was present [] when Whitehead got his plane 30 feet into the air and traveled 200 feet before landing.”

John Ciglar

"I was present in [] 1901 or 1902, [], when one of the planes constructed by [] Gustave Whitehead rose from the ground to a height of approximately twelve feet and traveled under its own [] power a distance of approximately thirty feet."
Thomas Schweikert [Interviewed by Mr. N. Gormley]

June 15, 1936: “I recall seeing an airplane flight made by the late Gustave Whitehead approximately thirty-five years ago. I recall the incident well as we were surprised to see the plane leave the ground. It traveled a distance of approximately three hundred feet, and at a height of approximately fifteen feet in the air.

John Havery [Interviewed by Mr. N. Gormley]

1948: “John Havery, now 55, stated positively that he saw Whitehead at least ten feet in the air and that he travelled several hundred feet. [He] was 12 years old.”

Louis Lazay

"Whitehead made a flight about 1900. The distance must have been at least 175 to 180 feet. The machine rose about as high as 30 to 40 feet. This particular flight occurred, I think, in the spring."
**Exhibit L:** Comparison, Lilienthal and Whitehead wing planforms

Lilienthal Patent, 1895

Whitehead’s airplane, 1901

**Exhibit M:** Affidavit, Charles R. Wittemann, presidentially-appointed national aviation expert, regarding his contemporary examination of Whitehead’s engines and his evaluation of Whitehead’s 1901 airframe.

During World War I, I was appointed by President Woodrow Wilson on a committee to examine and report on the aircraft industry at that time.

In 1908 I learned that Gustave Whitehead was experimenting with, developing and building airplane engines in his plant in Bridgeport, Conn.

I then called on Gustave Whitehead at his plant to examine his engines. While there, Gustave Whitehead outlined his sequence of development on various models he had built.

On examining the photographs and data of Whitehead’s plane #2 I judge from my long airplane design experience it was capable of stable flight.

Charles R. Wittemann

Witness

Sworn to before me this 15th day of October, 1964.

Notary Public
Exhibit O: Whitehead replicas in flight, 1986 & 1997

Whitehead replica at NATO Flight Test Facility, Manching, 1997

Whitehead replica at Sikorsky Memorial Airport, Stratford, 1986
Exhibit P: Whitehead motors in planes, ads and shows, worldwide.
Exhibit Q: Whitehead’s disclosure of combined wing-warping & rudder control, *Aeronautical World*, Glenville, Ohio, Dec. 1, 1902, p. 100; Wrights’ later *Patent*, Mar. 23, 1903, pp.6-7, Claim No. 11, (the only claim to survive infringement litigation) describing combined wing-warping & rudder control.
for our machine, it seemed necessary to obtain such a thorough understanding of the theory of its reactions as would enable us to design them from calculations alone. What at first seemed a problem became more complex the longer we studied it. With the machine moving forward, the air flying backward, the propellers turning sidewise, and nothing standing still, it seemed impossible to find a starting point from which to trace the various simultaneous reactions. Contemplation of it was confusing. After long arguments we often found ourselves in the ludicrous position of each having been converted to the other's side, with no more agreement than when the discussion began.

It was not till several months had passed, and every phase of the problem had been thrashed over and over, that the various reactions began to untangle themselves. When once a clear understanding had been obtained there was no difficulty in designing suitable propellers, with proper diameter, pitch, and area of blade, to meet the requirements of the flyer. High efficiency in a screw-propeller is not dependent upon any particular or peculiar shape; and there is no such thing as a "best" screw. A propeller giving a high dynamic efficiency when used upon one machine may be almost worthless when used upon another. The propeller should in every case be designed to meet the particular conditions of the machine to which it is to be applied. Our first propellers, built entirely from calculation, gave in useful work 66 per cent. of the power expended. This was about one-third more than had been secured by Maxim or Langley.

The first flights with the power machine were made on December 17, 1903. Only five persons besides ourselves were present. These were Messrs. John T. Daniels, W. S. Dough, and A. D. Etheridge, of the Kill Devil Life-Saving Station; Mr. W. C. Rinkley, of Manteo; and Mr. John Ward, of Naghead. Although a general invitation had been extended to the people living within five or six miles, not many were willing to face the rigors of a cold December wind in order to see, as they no doubt thought, another flying machine not fly. The first flight lasted only 12 seconds, a flight very modest compared with that of birds, but it was, nevertheless, the first in the history of the world in which a machine carrying a man had raised itself by its own power into the air in free flight, had sailed forward on a level course without reduction of speed, and had finally landed without being wrecked. The second and third flights were a little longer, and the fourth lasted 59 seconds, covering a distance of 852 feet over the ground against a 20 mile wind.

After the last flight the machine was carried back to camp and set down in what was thought to be a safe place. But a few minutes later, while we were engaged in conversation about the flights, a sudden gust of wind struck the machine, and started to turn it over. All made a rush to stop it, but we were too late. Mr. Daniels, a giant in stature and strength, was lifted off his feet, and falling inside, between the surfaces, was
**Exhibit S**: *Kansas City Star*, Dec. 17, 1928, p.2. Orville Wright admits listening passively on Dec. 17, 1903 while the Kitty Hawk life guards gave a false version of events to journalist, Harry P. Moore, over the phone.

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Harry P. Moore, a 21-year-old reporter on the Virginian Pilot, twenty-five years ago, was the first newspaper man to learn of the Wrights' flights, but found few papers willing to print his unbelievable "scoop."

Moore talked with Orville Wright when he arrived in Norfolk late last night and obtained the details which were lacking in the story of reporting the first flight.

"Why didn't you tell me exactly how far you flew and the other details?" Moore asked Wright.

The genial Mr. Wright smiled and said:

"You did have a few of the details mixed up in your report, didn't you?"

"Yes, but the story that you had flown successfully was the big thing, and that was right," Moore replied.

"When you called the coast guard station for information about our flight, the station men turned to me and asked whether they should tell you." Mr. Wright began. "I told them to tell you nothing, but in their enthusiasm they did give out the story and made it a bit stronger than it was. I believe they told you we flew three miles."
Exhibit T: Press Release, Jan. 6, 1904, Wilbur & Orville Wright, Dayton, Ohio.

It had not been our intention to make any detailed public statement concerning the private trials of our power "Flyer" on the 17th of December last; but since the contents of a private telegram, announcing to our folks at home the success of our trials, was dishonestly communicated to newspaper men at the Norfolk office, and led to the imposition upon the public by persons who never saw the "Flyer" or its flights, of a fictitious story incorrect in almost every detail; and since this story, together with several pretended interviews or statements, which were fakes pure and simple, have been very widely disseminated, we feel impelled to make some corrections. The real facts were as follows:

Wright Flyer

A Report Of Late Tests

Is Given by Messrs. Wright, Inventors of the Machine.

Interesting Description of the Trials Made at Kitty Hawk.
Exhibit U: May 1904 reports by invited journalists about Wrights’ flight attempts:

**Machine Does Not Fly**

Wright Bros.' Bird Apparatus Comes to Grief.

DAYTON, O., May 27.—The first test of the Wright flying machine that has been made since it has been reconstructed on Ohio soil was made Wednesday afternoon in a large open field about six miles east of here. The atmospheric conditions were favorable and the machine rose into the air about fifteen feet and maintained its flight for a distance of about twenty-five feet. It then fell to the ground. The reason assigned for the failure to cover more territory was that the power had become exhausted. In the fall the pins propellers at the rear of the machine were broken and the experiments will now be abandoned for some time.

Fort Wayne News, IN, May 27, 1904, p.5

**NEW AIRSHIP A FAILURE.**

Wright Machine Falls to Ground After Going 25 Feet.

DAYTON, O., May 27.—The first test of the Wright flying machine that has been made since it was reconstructed in Ohio, was made Wednesday in a large open field about six miles east of here. The atmospheric conditions were favorable and the machine rose into the air about fifteen feet and maintained its flight for a distance of about twenty-five feet. It then fell to the ground. The reason assigned for the failure to cover more territory was that the power had become exhausted. In the fall the pins propellers at the rear of the machine were broken and the experiments will now be abandoned for some time.

Syracuse Journal, May 27, 1904, p.4

**FALL WRECKS AIRSHIP.**

On Trial Trip It Went Thirty Feet and Dropped—Inventors Satisfied, Though.

SPECIAL TO THE NEW YORK TIMES.

DAYTON, Ohio, May 28.—The Wright flying machine, invented by Orville and Wilbur Wright, brothers, of this city, which made a successful flight at Kitty Hawk, N. C., last December had another trial near this city to-day, which the brothers say was successful. Great secrecy was maintained about the test, and but few witnessed it.

The machine after being propelled along a track for the distance of a hundred feet, rose twelve feet in the air, and flew a distance of thirty feet, when it dropped. This was due, the inventors say, to a derangement of the gasoline engine that furnishes the power. In the fall the propellers were broken, and the test could not be repeated.

New York Times, May 27, 1904, p.1

**FLYING MACHINE FAILED TO FLY**

The first test of the Wright flying machine that has been made since it has been reconstructed on Ohio soil was made Wednesday afternoon in a large open field about six miles east of Dayton. Atmospheric conditions were favorable and the machine rose into the air about fifteen feet and maintained its flight for a distance of about twenty-five feet. It then fell to the ground. The reason assigned for the failure to cover more territory was that the power had become exhausted. In the fall the pins propellers at the rear of the machine were broken and the experiments will now be abandoned for some time. Wright brothers, inventors of the machine, are known in Huntington and are sometimes visitors in the city.

Galveston Daily News, May 28, 1904, p.2

Huntington Daily News-Democrat, IN, May 27, 1904, p.1
Exhibit V: Gleanings in Bee Culture, Jan. 1, 1905, p.36f., by Amos Root. (“Credentialed historians” cite Root as the first invited journalist to actually see the Wrights fly.) Root explains how the Wrights added 70 lbs. of cast iron to the nose of their plane to make it fly better.
Exhibit W: The only comprehensive, written (i.e. verifiable, non-interpreted) statement by a witness whose presence at Kill Devil Hills, near Kitty Hawk, on Dec. 17, 1903, is stipulated – Mr. John T. Daniels:

1933 (30 years later)

...taken the machine up on the hill and put it on the track and he went off across the beach ... Sustained?

...he pulled the rudder off so he had to bring it back to the camp... Controled?

John T. Daniels
Exhibit X: Century Magazine, Sept. 1, 1908, p.644. First release of famed Kitty Hawk photo showing front control surface (elevator) angled steeply upward beyond stalling angle. [The angle at which an airfoil stalls is physics/science and not subject to “historical interpretation.”] Even with the naked eye, an angle exceeding 6° is clearly visible (see Exhibit Y).

Wind Tunnel Data - Effect of Canard Deflection

- Canard lift is always significant
- Adequate canard power to trim at operationally significant \( C_L \)'s
- At \( \delta_c = 5^\circ \) & \( \alpha \approx 6^\circ \) canard showed separation and buffet: precluded testing at higher \( \alpha / \delta_c \) combinations

The nose elevator stalled and dived at angles over 6°
Exhibit Z: In a Dec. 1987 letter to the aviation historian, Leo Opdyke, the current Senior Aeronautics Curator at the Smithsonian, Dr. Thomas D. Crouch, admitted that the attempted flight shown in the famous Kitty Hawk photo was unsuccessful:

Leonard E. Opdyke

Dear LEO:

You ask for an “exchange of criteria.” I wonder if that is necessary. It seems to me that we already have a standard definition. An airplane must be capable of sustained flight (that is to say, baseballs are thrown, they do not fly) and it must operate under the control of the pilot. There is an obvious problem in defining what we mean by sustained and controlled. Was the First Wright flight of December 17, 1903 (120 feet) sustained? Probably not. Was the fourth flight (60 feet) sustained? Yes, probably. To remain in the air for 852 feet will

Sincerely,

Tom D. Crouch
Chairman, Social and Cultural History