Contemporary period

French revolution: end of Modern time

Pilâtre de Rozier 1754 -1785 First balloon flight 1783
Isaac Newton 1642-1727 Gravitation, universal attraction
Galileo 1564 -1642 «And yet she is turning»
Pieter Brueghel 1525 -1569 Fall of Icarus 1558
Michelangelo 1475 -1564 Last judgment 1541
Copernicus 1473 -1543 Heliocentrism 1513

Colombus discover America: end Middle age
Leonardo de Vinci 1452 -1519 Master of lightness

Fall of Occidental Roman Empire: end Antiquity
Today, like Daedalus and Icarus, we are trapped on a labyrinth of society and planet problems. How can we escape without burning our wings?
Flying was the dream of humanity to escape human being condition and become the equal of gods.
Ezechiel
char de Yahvé

Elohims

Titan

Ramayana
aerial war

Gilgamesh

Viracocha
god od incas
“[Eilmer] was a man learned for those times, of ripe old age, and in his early youth had hazarded a deed of remarkable boldness.

He had by some means, I scarcely know what, fastened wings to his hands and feet so that, mistaking fable for truth, he might fly like Daedalus, and, collecting the breeze upon the summit of a tower, flew for more than a furlong (200m).

But agitated by the violence of the wind and the swirling of air, as well as by the awareness of his rash attempt, he fell, broke both his legs, and was lame ever after.
Leonardo de Vinci 1452-1519 -
the master thinker flying and lightness
September 19, 1783, on Versailles castle, in presence of king Louis XVI, experimental flight with a sheep, a rooster and a duck on a basket.
Pilâtre de Rozier, 1754-1785

First man to fly, November 21, 1783
Pilâtre de Rozier, first man to die flying June 15, 1785

Son aéro-montgolfière (combinaison d'une montgolfière et d'un ballon à gaz) like Bertrand Piccard and Brian Jones balloon around the world in 1999
Erfunden von Jacob Degen
in Wien
1807.

Ansicht der Fläche.
'Governable Parachute', 1852, Replica in flight
«My goodness, poor human dreamer...»
Henri Giffard 1825–1882. First steam airship flight (28 km, 1800 m) Sept 8
Engraving depicting Tissandier’s brothers
Krebs and Renard and the airship La France
Stanley Spencer’s airship with bamboo structure flying over Crystal Palace
London 1902
Percy Sinclair Pilcher (1866–1899)
Bamboo simple structure of “Santos-Dumont”
Making flights over water was a safety precaution used by the aviation pioneers, Kress in 1874-1958 (France).

Alfredo Santos Dumont 1873-1932 (Brasil)

Glenn Curtiss 1878-1930 (USA)

Orville Wright 1871-1948 (USA)

Wilbur Wright 1867-1912 (USA)

Otto Lilienthal 1848-1896 (Germany)

Joseph Michel Montgolfier 1740-1810 (France)

Jean François Pilâtre de Rozier 1754-1785 (France)

Henri Giffard 1825-1882 (France)

Richard Pearse 1877-1953 (New Zealand)

First pilot license

Harriet Quimby 1875-1912 (USA)

Bessie Coleman 1892-1926 (USA)

Kress, Wilhelm 1836-1913 (Austria)

Kress, Wilhelm (1836-1913) Austria
First human aeroplane real flight
had the job of securing first-flight honors for their native sons. In fact the first is…

- Mozhaysky (Russia)
- Ader (France)
- Vuia (Romania)
- Jatho (Germany)
- Pearse (New Zealand)
- Watson (Scotland)
- Maxim/Pilcher (England)
- Santos-Dumont (Brazil)
- Hargrave (Australia)
- Kress (Austria)
december 17

21 Condor, without catapult, with bamboo - Gustave Whitehead, Fairfield, Connecticut - USA
with his «light, yet powerfull and reliable engine»

Gustave Whitehead
1874 -1927
The first official entry for the Aeronautical Contest of the Universal Exposition in Saint Louis, 1903, has just been registered.

The entry has been submitted by Mr. Gustave Witehead from Bridgeport, Connecticut, who, at the moment, is perfecting his machine with which he has already performed many flights.

[p.63]

The aeroplane is made of bamboo and silk. The fuselage measures 3 feet by 3 feet (915 mm by 915 mm) with a length of 16 feet (4 meters 90) with big wings set into motion by a double compound engine with a power of 20 horse power.

The weight of the aeroplane is 280 pounds [126 kilograms and 840 grams].

This flying machine made a successful flight last year [1901] in the month of June with one person aboard, where it covered a distance of one and a half mile [about two and a half]...
«It was about 2 o’clock Wednesday morning when the great white wings of the air ship were spread out ready to leap through the air. Mr. Whitehead was excited and enthusiastic.»
Replica of Gustave Whitehead's 1901 aircraft. Test flight performed at Manching airport (Bavaria, Germany) on Oct. 4, 1997 by Horst Philipp. Construction was based on plans drawn by Anton Pruckner, Whitehead's assistant, and confirmed by photometric transposition of perspectives shown in surviving photographs of the original aircraft.
history is capricious in its decision to record. It is often the case that "the second mouse gets the cheese".

The Wrights were right, but Whitehead was ahead.
Je n’aime pas non plus beaucoup le bois, trop lourd et cassant. On ne peut pas sortir de ce dilemme si l’on emploie le bois : « Si vous faites solide, et alors vous êtes trop lourd, ou vous faites léger et alors vous êtes trop fragile. »

Le tube de métal serait léger et fort, mais quelle dépense, la seule chose ! Ce qui vaut le mieux, c’est ce tube naturel de bois qui s’appelle le bambou. Il a encore un immense avantage pratique : quand il casse, il se fend sans jamais faire d’esquilles et l’aviateur ne risque pas de se faire des blessures inutiles. On a dit qu’il résistait beaucoup à l’avancement : c’était faux.

Maintenant, comment assembler les bambous perpendiculairement et longitudinalement ? C’est bien simple — perpendiculairement — on enfille dans l’un des bambous un petit bouchon de bois (fig. 5), et la figure montre comment ce bouchon est créé pour prendre appui sur le second bambou.

Longitudinalement — c’est tout aussi simple : on commence par enfiler les deux bambous sur un petit cylindre en bois. Puis on enroule par-dessus, en couvre-joint, une feuille d’aluminium 5 dixièmes de millimètre d’épaisseur et l’on fixe ne varietar cette feuille aux deux extrémités, par des colliers réglables du modèle indiqué figure 6.

On aurait pu se servir d’un tube à la place de cette feuille d’aluminium ; mais comme tous les bambous ne sont pas du même diamètre, il faudrait avoir un assortiment complet de tubes, et...
Ferdinand Ferber testing bamboo airplane on a tower in Nice - France
HISTOIRE DE L'AVIATION

Le Capitaine FERBER dit « de Rée », procède à Lev (1908), aux essais de son Biplan, malheureusement, périr, à Boulogne-sur-Mer, dans une chute, où il fut réuni par son Moteur. — NE
On September 22, 1909, Ferdinand Ferber was killed in the crash of his airplane.
Georges Legagneux (1882-1914) with the model Ferber IX plane
Santos Dumont flying La Demoiselle - Paris 1907
La Demoiselle, one or three bamboo for the body structure
mobility first
Description du Santos-Dumont N° 20

Poids environ
ENCOREMENT, longueur
largeur
Surface portance, environ
MOTEUR horizontal
REFROIDISSEMENT

Prix : 7.500 fr.

Coste demande d'Agence doit être adressée à
CLÉMENT-BAYARD
Quai Michelet, LEVALLOIS-PERRET (Seine)

Le plus vite
Le plus léger & le mieux

SANTOS-DUMONT
N° 20

Prix : 7.500 fr.
BYE, BYE Santos Dumont!
thank you for your tenacity to fulfill your and our dream...with bamboo
and
80 years later
Flyboo 1

September 10-27, about 4 millions visitors
Flyboo n°1 Ambassador
launch a campaign:
‘Let the forest breathe’
Flyboo 1, with innovative four joints wings, received Henry Ford European award for nature protection.

Lightness, stiffness, stability

Environmental resource

Easy to find, to work, to replace

«Lightness, minimal weight, is achieved when building with an intelligent combination of the least amount of materials»

Ed Van Hinte
Flyboo 1, an innovative 3D body structure for lightness.
Future joined wings airplane
Ligeti Stratos aircraft
Flyboo 2 exposed in WBC VI Costa Rica

November

Flyboo 2

Wingspan 6.20 m
Flyboo

built in two weeks, working night and day
Flyboo 3
- wingspan: 5.80 m
- length: 5.50 m
- weight: 30 kg
Flyboo 3 over the audience of 9th WBC in Antwerp (Belgium) - May 2012
Flying or not flying... is the question?
In Pursuit of a Smuggler
Human can do!
Flyboard Air
Franky Zapata
2017
How can we escape without burning our wings?

With the lesson of «bamboo lightness» given by aviation pioneers
Willing, Intelligence, Determination, Esprit de corps are the key words.

With the willing of dreamers, intelligence of builders, determination of pioneers, Esprit de corps of innovative, for sure, the help of bamboo lightness, challenge of human desire for flying was fulfilled.

Aviation transport revolution started a new era for humanity.

Today, the climate change effect are more and more present. Our big challenge is to maintain the equilibrium of our planet.

Bamboo, as fast renewable plant, could be a lesson of sustainability with lightness pressure on our mother land.

We have to speak louder to promote the use of bamboo.
SO...
I invite you to
Our individuals acts can help change the world

Jane Goodall
Climat 2019

With bamboo