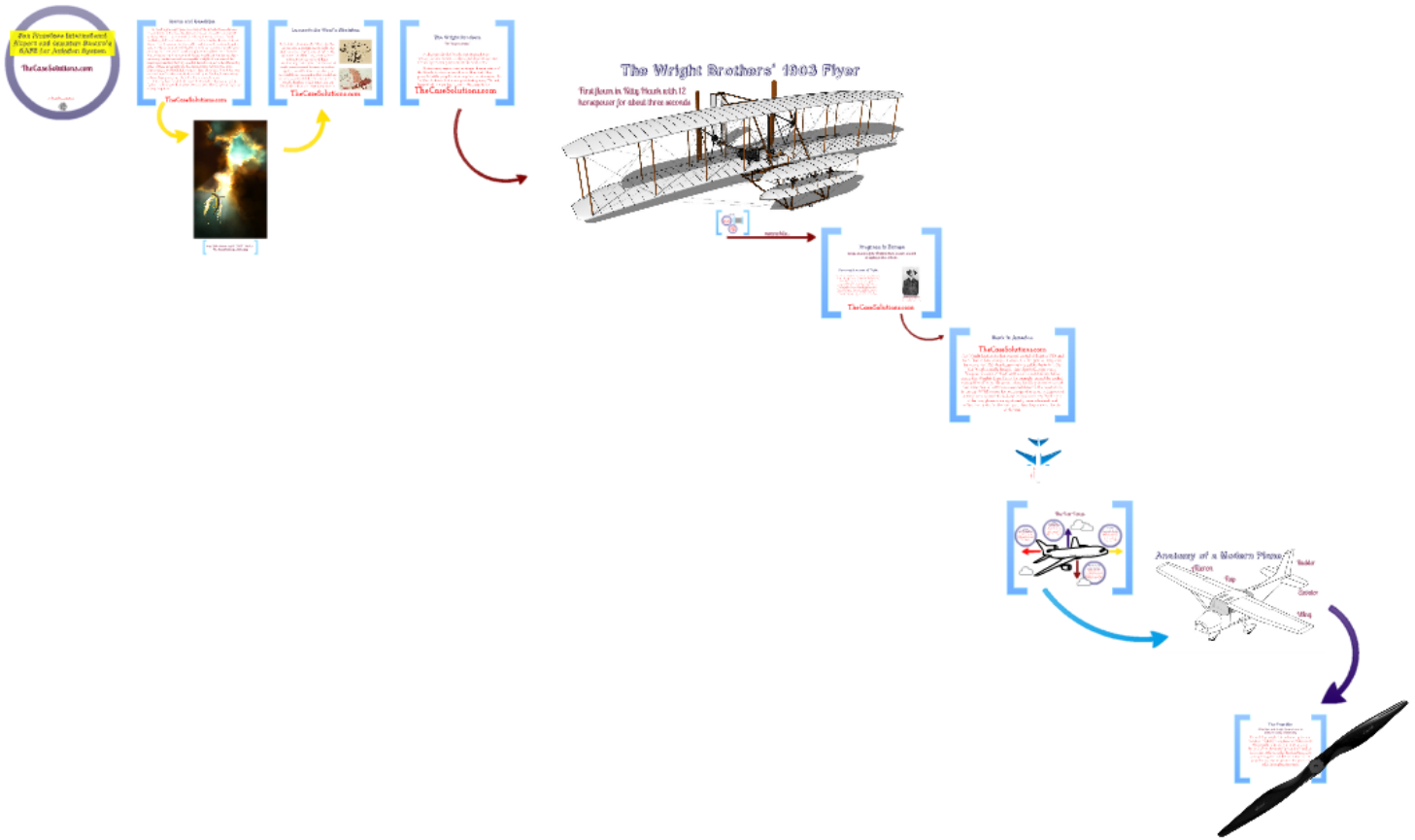
The Wright Brothers' 1903 Flyer
Anatomy of a Modern Plane

San Francisco International Airport and Quantum Secure's SAFE for Aviation System

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A Prezi Presentation

Icarus and Daedalus

In Greek mythology, there is a story of the inventor Daedalus and his son Icarus. In the tale, Daedalus and his son are sent to a labyrinth by King Minos as punishment for helping Theseus, a hero of Greek mythology, kill a minotaur and run off with Ariadne, the daughter of King Minos. To escape the labyrinth, Daedalus and Icarus's only option was to take to the air. Daedalus, being a clever inventor, crafted a pair of wings for his son and himself using wax as a glue of sorts. Because the sun would melt the wax and the sea would wet the feathers, both rendering Daedalus's creation incapable of flight, it was crucial that Icarus and Daedalus flew at a medial height so as not to be affected by either of these potentially life threatening risks. All was well until Icarus, exhilarated by flight, began to climb closer and closer to the sun, and his father's contraction started to fall apart. Finally, Icarus's wings collapsed completely and he fell to the sea and drowned.

Not only does this old tale prove that man has always aspired to fly, but it also proves that we've been aware of the dangers of flight for a very long time.

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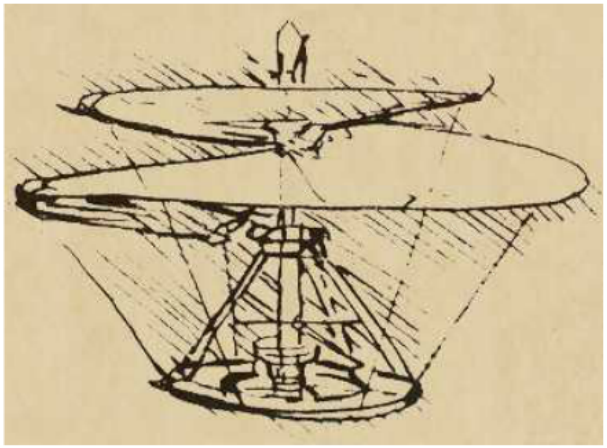
Leonardo Da Vinci's Sketches

In the 1480s, Leonardo Da Vinci executed the first real investigations of flight. His sketches, some of which are shown to the right, are the oldest known examples of actual studies in practical flight. Unfortunately for Da Vinci, his ideas about flight were incorrect. Pictured on the top right is one of Da Vinci's sketches of a proposed flying contraption that would use a screw to generate lift. Centuries later, the Wright brothers would prove that Da Vinci's idea of an air screw is impractical.



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The Wright Brothers

The "bicycle scientists"

Wilbur and Orville Wright are responsible for creating the first aircraft to takeoff and land at the same altitude by its own power and under total control.

While many regard them as simple "bicycle scientists", the Wright brothers are much more than that. They proved that the propeller of an airplane is not a screw, like Da Vinci believed, but actually a rotating wing. This will be revisited in more depth later in the presentation.

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Bernoulli's Principle

A way of measuring the relationship between pressure and speed.

In the 1700s, Daniel Bernoulli discovered the first effective way of measuring blood pressure- by puncturing arteries with pointed tubes. The amount of blood that rose in the tube was proportional to the patients blood pressure. Seeing this, Bernoulli concluded that the faster a fluid is moving, the smaller the fluid's pressure is. Although this method was painful, it was used for many years. Today Bernoulli's principle is used to measure air pressure in aviation.

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Newton's Law

While Bernoulli's Principle is a satisfactory answer to many regarding the question of how a plane flies, some have countered the principle with the question, "how does a plane fly upside-down?" Surely there is another force acting on planes in flight, because Bernoulli's Principle cannot be entirely responsible for upside-down flight.

The answer lies in Isaac Newton's third law, which states that for every action there is an equal and opposite reaction. So, the action and reaction between the wing of a airplane and the relative wind is partially responsible for lift and therefore flight.

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Progress In Europe

Europe, unaware of the Wright brothers' creation, was still struggling to take to the air.

European Pioneers of Flight

In 1906, Alberto Santos Dumont became the first man to fly in Europe. The Wright brothers were secretive, so in 1903, very few people knew they had successfully piloted an aircraft. All of Dumont's inventions were free to the public, and he refused to accept any money for his work. Unfortunately, Dumont believed he was responsible for making the airplane a weapon of war, and because he couldn't entertain this possibility, he hung himself in 1932.

Alberto Santos Dumont
http://en.wikipedia.org/wiki/File:Alberto_Santos_Dumont_02.jpg

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Back in America

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The Wright brothers further grasped control of flight in 1904 and 1905. Due to their secrecy, however, this fact goes unrecognized by many. By 1906, they began making public flights. In 1908, the Wrights finally brought their flyer to Europe. Many European pioneers of flight had had some mild success before seeing the Wrights. Louis Bleriot, for example, crossed the English channel from France. However, when the Wrights demonstrated their invention, all of Europe accepted defeat in the race to take to the sky. WWI caused the technology of aviaton to improve at a faster rate, because technology became a priority. By the end of the war, planes were significantly more advanced, and crafted from metal for the most part, than they were at the start of the war.