

# Innovation in History of Aviation

Ki Dong Lee

Professor of Aerospace Engineering  
University of Illinois at Urbana-Champaign  
Urbana, IL 61801  
kdlee@illinois.edu

## Abstract

Perhaps aviation is the most significant technological development in the 20th century that has transformed human life fundamentally. The aviation history is rich in innovation and filled with international collaboration and competition. In this paper, we will briefly review the aviation history and discuss how innovation created breakthroughs and introduced new horizons in the development of flight.

The man's dream to fly has begun from prehistoric times. Human admired and imitated birds by the use of flapping wings. Lighter-than-air balloons were introduced and later combined with internal combustion engines. The fixed-wing concept was first introduced by George Cayley, the father of British aeronautics. In 1809, he wrote, "I feel perfectly confident ... that this noble art will soon be brought home to man's convenience, and that we shall be able to transport ourselves, families, and our goods, more securely, by air than water, and with the velocity of from 20 to 100 miles per hour."

Many visionaries worked hard and invented various concepts for successful flight. The first successful powered, heavier-than-air flight was achieved by the Wright brothers on December 17, 1903. It was the first controlled, sustained flight with a pilot aboard and flew for 12 seconds and a distance of 120 feet. Since then, the airplane became the 20<sup>th</sup> century invention that has shrunk the world. In the paper, we will revisit many valuable inventions and stepping-stones through the history of aviation.