

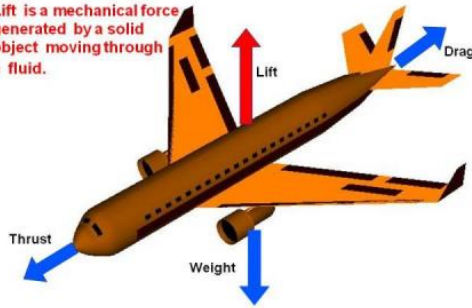
- 0. LIFT AND DRAG - Story Preface
- 1. WILBUR AND ORVILLE WRIGHT
- 2. AIRCRAFT CONTROL
- 3. LIFT AND DRAG**
- 4. KITTY HAWK
- 5. THE FIRST FLIGHT
- 6. FLYER 3 and OTHER FAMOUS FLIGHTS
- 7. THE FIRST ROCKETS
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- 9. THE SOUND BARRIER
- 10. THE SPACE RACE
- 11. THE FIRST MAN & WOMAN IN SPACE
- 12. ALAN SHEPARD'S FLIGHT
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- 14. DEATH IN THE COMMAND MODULE
- 15. TO THE MOON
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- 18. THE SHUTTLE'S DESIGN FLAW

National Aeronautics and Space Administration

**What is Lift ?**



Lift is a mechanical force generated by a solid object moving through a fluid.

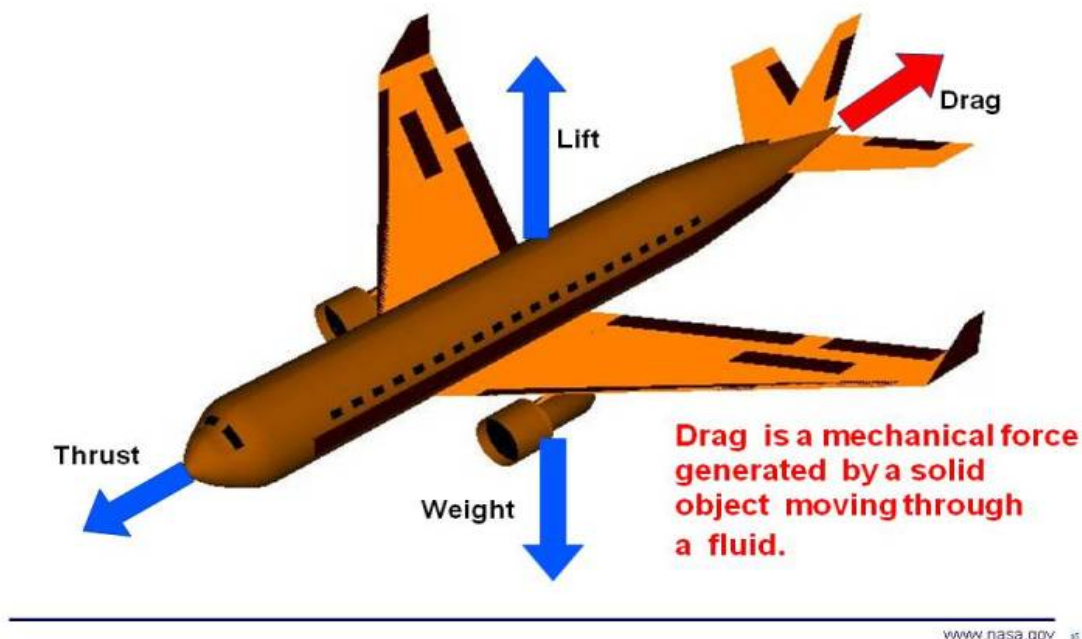


www.nasa.gov

For the next two years, Will and Orville used their bike shop as an invention center. Using a bike as their first testing device, they performed airfoil experiments.

Pedaling their contraption as fast as they could was exhausting, so the brothers invented a wind tunnel into which they placed two homemade devices - one to test lift and the other to test drag. The blower fan, which was driven by an overhead belt, created winds up to 35 miles per hour.

# What is Drag ?



Writing down all their observations on strips of wallpaper, they ultimately compiled their findings into a notebook. Among other important conclusions, the brothers determined the commonly accepted coefficient of lift was too high. They also found a wing produced more lift if it had the shape of a parabola.

Using the data from all their experiments, the brothers built a reworked glider in 1902. It was the first aircraft that solved the fundamental problems of flight: lift and three-axis control (referred to as pitch, roll, and yaw).

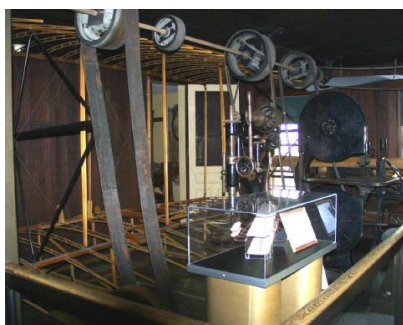
See Alignments to State and Common Core standards for this story online at:

<http://www.awesomestories.com/asset/AcademicAlignment/LIFT-AND-DRAG-History-of-Flight>

See Learning Tasks for this story online at:

<http://www.awesomestories.com/asset/AcademicActivities/LIFT-AND-DRAG-History-of-Flight>

## Media Stream



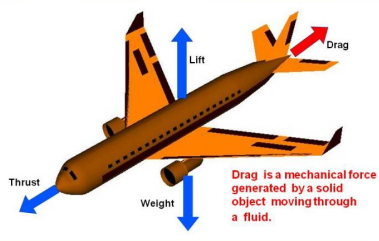
### Wright Brother's Bike Shop

Image online, courtesy wright-brothers.org website.

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### What is Drag ?



### What is Drag

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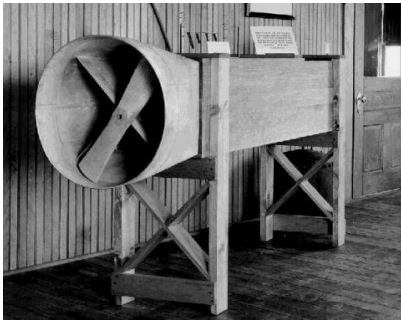


### Cycle Used to Test Air Foils

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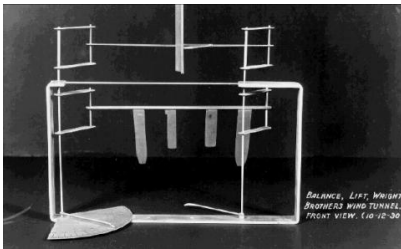


### Wright Brother's Wind Tunnel

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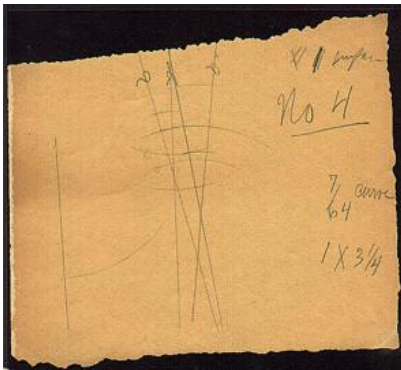


### Wright Brother's Machine - Lift Testing

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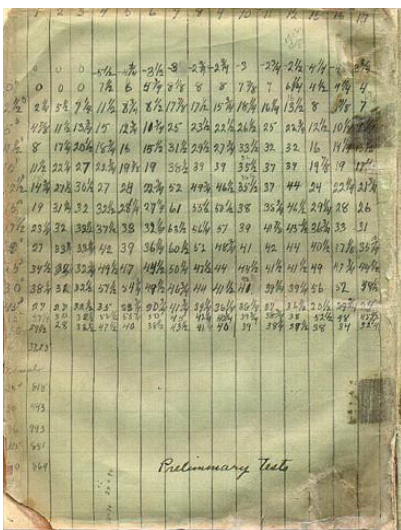


### Wright Brother's Original Notes

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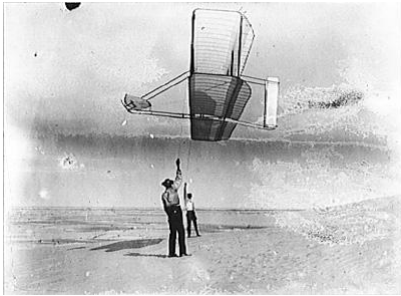


### Wright Brother's Notes and Findings

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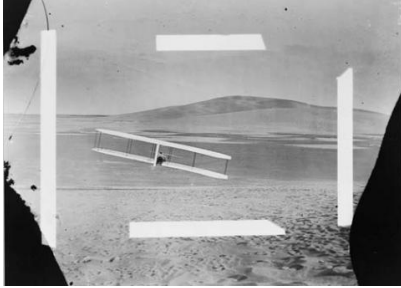


## Wright Brother's Reworked Glider

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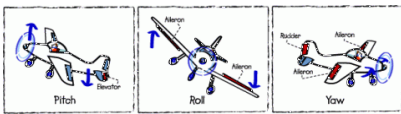


## First Aircraft with Control Features

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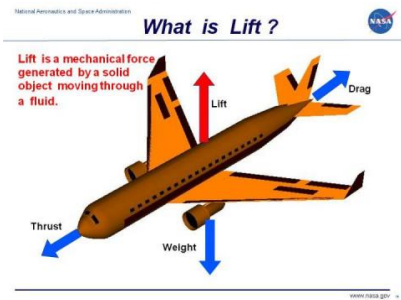


## Three-Axis of Aircraft Control

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## LIFT AND DRAG

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