

History of flight

1903 Orville and Wilbur Wright and the First Flight. Orville and Wilbur Wright were very deliberate in their quest for flight. First, they spent many years learning about all the early developments of flight. They completed detailed research of what other early inventors had done. They read all the literature that was published up to that time. Then, they began to test the early theories with balloons and kites. They learned about how the wind would help with the flight and how it could affect the surfaces once up in the air.



- The next step was to test the shapes of gliders as George Cayley did when he was testing the many different shapes that would fly. They spent much time testing and learning about how gliders could be controlled.



- The "Flyer" lifted from level ground to the north of Big Kill Devil Hill, at 10:35 a.m., on December 17, 1903. Orville piloted the plane which weighed six hundred and five pounds.

The Wright Brother's Flyer

The first heavier-than-air flight travelled one hundred twenty feet in twelve seconds. The two brothers took turns during the test flights. It was Orville's turn to test the plane, so he is the brother that is credited with the first flight.

Components of an aircraft



The body of the plane is called the **fuselage**. It is generally a long tube shape. The wheels of a plane are called the **landing gear**. There are two main wheels on either side of the plane fuselage. Then there is one more wheel near the front of the plane. The brakes for the wheels are like the brakes for cars. They are operated by pedals, one for each wheel. Most landing gear can be folded into the fuselage during the flight and opened for landing.

THE WINGS

All planes have **wings**. The wings are shaped with smooth surfaces.

There is a curve to the wings which helps push the air over the top more quickly than it goes under the wing. As the wing moves, the air flowing over the top has farther to go and it moves faster than the air underneath the wing. So the air pressure above the wing is less than below it. This produces the upward lift. The shape of the wings determines how fast and high the plane can fly. Wings are called **airfoils**.



THE FLAPS

The hinged control surfaces are used to steer and control the airplane. The flaps and ailerons are connected to the backside of the wings. The **flaps** slide back and down to increase the surface of the wing area. They also tilt down to increase the curve of the wing



THE ALIERONS



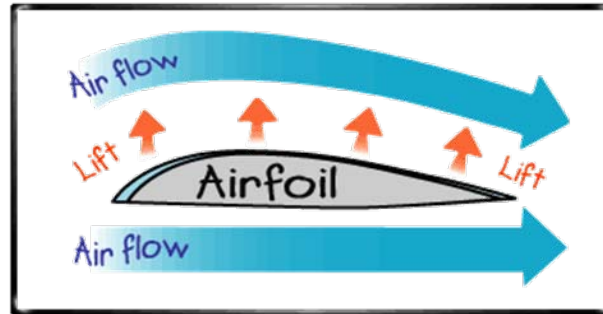
The **slats** move out from the front of the wings to make the wing space larger. This helps to increase the lifting force of the wing at slower speeds like takeoff and landing. The **ailerons** are hunged on the wings and move downward to push the air down and make the wing tilt up. This moves the plane to the side and helps it turn during flight. After landing, the **spoilers** are used like air brakes to reduce any remaining lift and slow down the airplane.

THE TAIL

The **tail** at the rear of the plane provides stability. The fin is the vertical part of the tail. The **rudder** at the back of the plane moves left and right to control the left or right movement of the plane. The **elevators** are found at the rear of the plane. They can be raised or lowered to change the direction of the plane's nose. The plane will go up or down depending on the direction of that the elevators are moved.



WHY AN AIRPLANE CAN FLY...



Airplane wings are curved on the top which make air move faster over the top of the wing. The air moves faster over the top of a wing. It moves slower underneath the wing. The slow air pushes up from below while the faster air pushes down from the top. These forces the wing to lift up into the air.

During a fly, on an airplane, we can find four forces that let our aircraft to support...

Four forces of flight

Lift - upward

Drag - down and backward

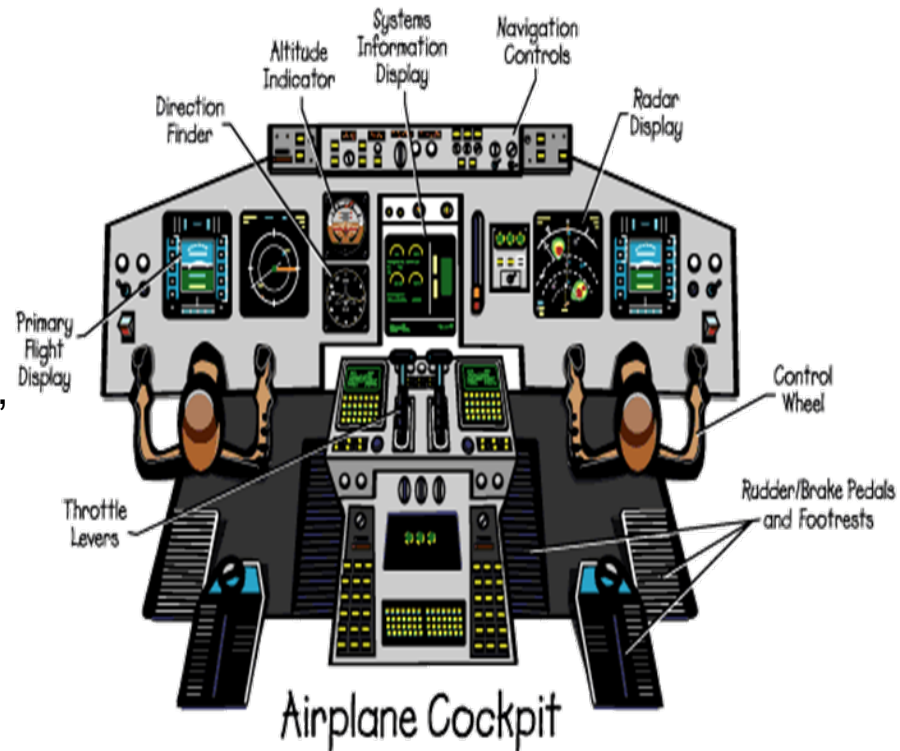
Weight - downward

Thrust - forward



AIRPLANE CONTROL

- **Primary flight display**: is the principal panel, and in the modern aircraft, we can read the altitude, the speed and we can see the thirsty of the Aircraft
- **Direction Finder**: is an instrument used to find a radio/beacon at the ground.
- **Systems information display**: is a display, where there are all information of the state of airplane.
- **Navigation control**: is the apparate of the autopilot.
- **Radar Display**: is a display, where we can see the condition of traffic and atmosphere.
- **Throttle**: we can use for increase or decrease the thrust of the plane.



SAFETY IN THE AERONAUTICAL WORLD

SAFETY IN AIRPORTS



Every time we assist to a disaster with human life losses
we have to reflect about the lack identification of responsible and missing safety rules

WHO EMANATES THE NORMS

The department of the civil aviation has the following functions:

- Vigilance
- Control connected to international agreements
- programming and elaborating the conventional relationship with the agencies

E.N.A.C



It covers the role of coordinating authority among several airport subjects in order to guarantee the services for the customer and the protection of the rights of the passengers.

E.N.A.V



The Services and the activities that ENAV carries out for the Management of the Air traffic in our Country are the following tasks :

- preventing the collisions between aircrafts
- preventing the existing collisions between aircrafts and obstacles in the manoeuvring areas of the airports;
- accelerating and maintaining the flow of the air traffic tidy;
- supplying useful suggestions and information for a sure and effective conduct of the flights;
- giving the alarm to the search organisms and aid, when necessary

Safety in Aircraft

It has become more accurate after recent terrorist attacks. Before the departure every hand baggage must be inspected and it is not allowed to carry some dangerous materials inside the plane.

WHICH OBJECTS ARE DANGEROUS

The liquids object of restrictions are: water and other drinks, scents, gel, bath foam and shower foam, tooth-paste, mascara, creams, lotions and oils, sprays, foams for shaving, other foams and deodorants.

