



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35



DEPARTMENT OF AEROSPACE ENGINEERING

HOT AIR BOLLOONS

LIGHTER-THAN-AIR

- Aircraft whose lifting capability depends on being inflated with a gas such as hot air, hydrogen or helium.*

HEAVIER-THAN-AIR

- Aircraft whose lift is produced by a reaction between aerofoil and motion through the air.*

POWER DRIVEN

- Aircraft, whose propulsion through the air is supported by engine power.*

NON POWER DRIVEN

- Aircraft whose propulsion through the air is derived from gravity and aerodynamic forces, and it is not supported by engine power.*

AEROPLANE (FIXED WINGS)

- Aircraft whose lift is produced by a reaction between fixed wings and motion of the air about them.*

ROTORCRAFT (ROTARY WINGS)

- Aircraft whose lift is produced by rotating wings.*



1. According to the basic design

2. According to the principle of propulsion through the air

3. According to the design of the wings



Types Of Aircraft (Aircraft Categorization)

According to the basic design

According to the principle of propulsion through the air

According to the design of the wings



BASIC DESIGN

HEAVIER-THAN-AIR



LIGHTER-THAN-AIR

PRINCIPLE OF PROPULSION THROUGH THE AIR



POWER DRIVEN



NON POWER DRIVEN

DESIGN OF THE WINGS



ROTORCRAFT (ROTARY WINGS)



AEROPLANE (FIXED WINGS)

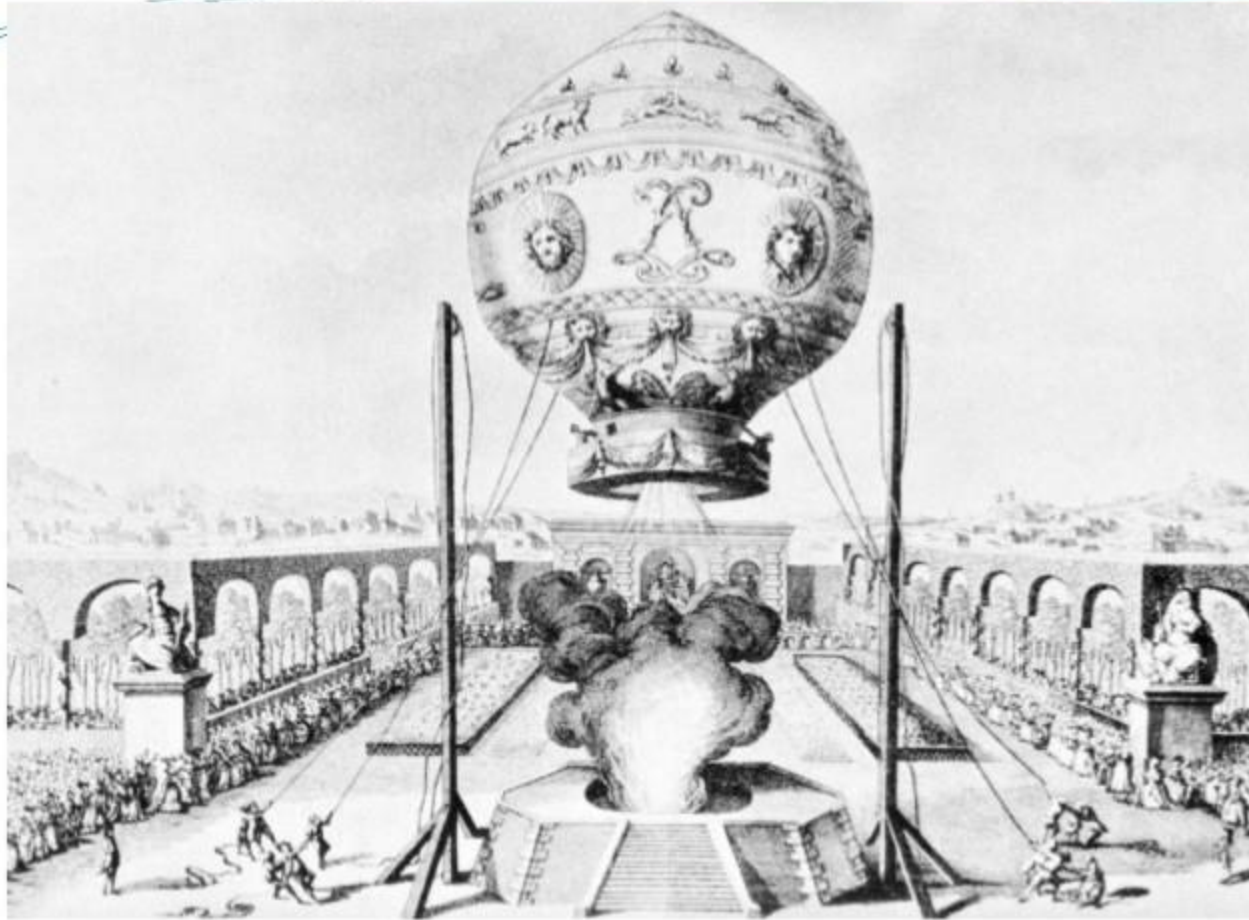




NEHRU K,AP/AERO

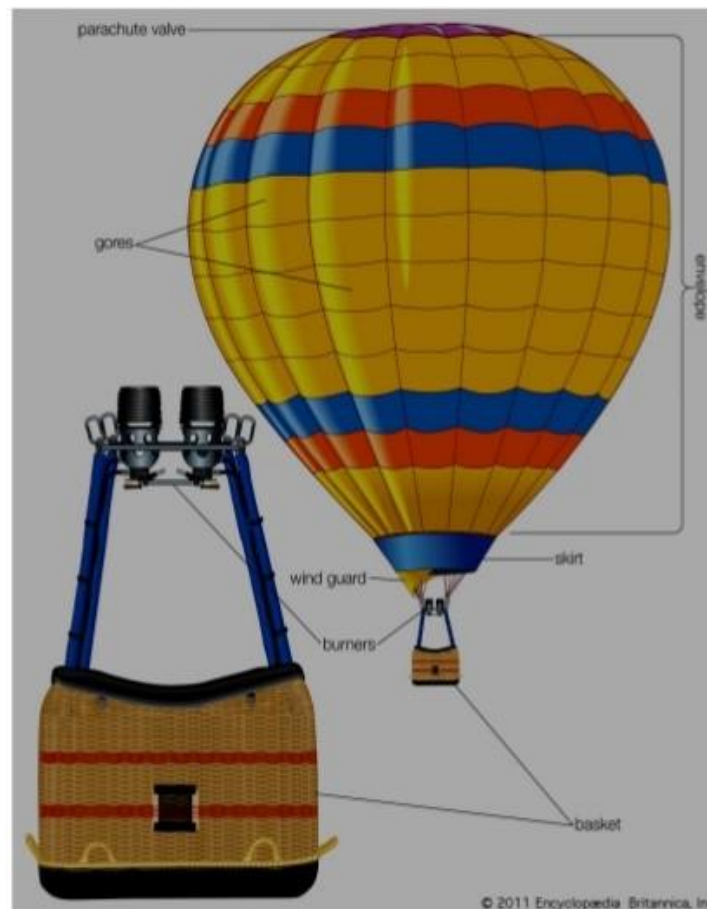
HOT AIR BALLOONS



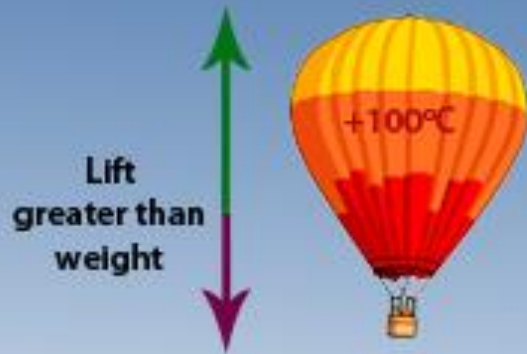


Hot air balloons are the oldest **SUCCESSFUL** human-carrying flight technology. They have 2 parts: the bag or envelope and the gondola or wicker basket. They also need a source of heat. The heated air inside the envelope makes the balloon buoyant, which makes it rise. It can fly to extremely high altitudes.

Parts of a hot air balloon



Positively Buoyant
CLIMBING



Neutrally Buoyant
LEVEL FLIGHT



Negatively Buoyant
DESCENDING



Hot Air Balloon
Buoyancy

What is Buoyancy?

- We've all experienced **buoyancy**. If you throw a football into water, it floats on the surface. In a swimming pool, you can float on your back and large ships float in the sea.
- Even things that sink such as stones, experience a buoyant force, but the force is insufficient to keep them afloat. Buoyancy is a force that pushes up on the underside of an object that's placed in a fluid.
- The fluid doesn't have to be water, it can be a gas such as air and helium balloons experience buoyancy, causing them to rise upwards.

What are the 3 Types of Buoyancy?

Negative, Positive and Neutral Buoyancy

An object placed in a fluid such as water can do three things:

- It can sink. We call this negative buoyancy.
- It can float. We call this positive buoyancy. If we push the object below the surface of the water and let go, the positive buoyancy force pushes it back up again above the surface.
- It can stay submerged below the surface and neither sink to the bottom nor float back to the surface. If it's moved to a different depth below the surface, it stays in that position. This is called neutral buoyancy.