

# ***PRESENTATION ON BASIC AIRCRAFT SYSTEM***



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# ***FLIGHT CONTROL SYSTEM***

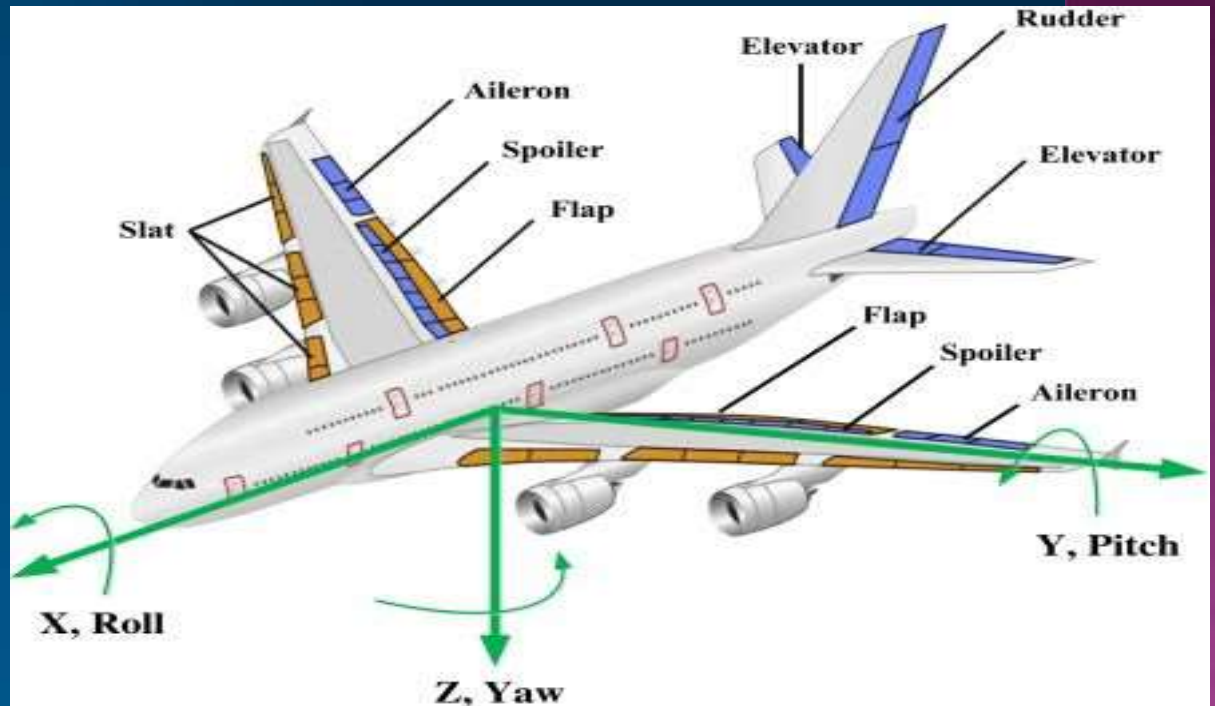
Aircraft flight control are the means by which a pilot control the direction and altitude of an aircraft flight.

**Flight control system are subdivided into two parts:**

- 1) Primary Control
- 2) Secondary Control

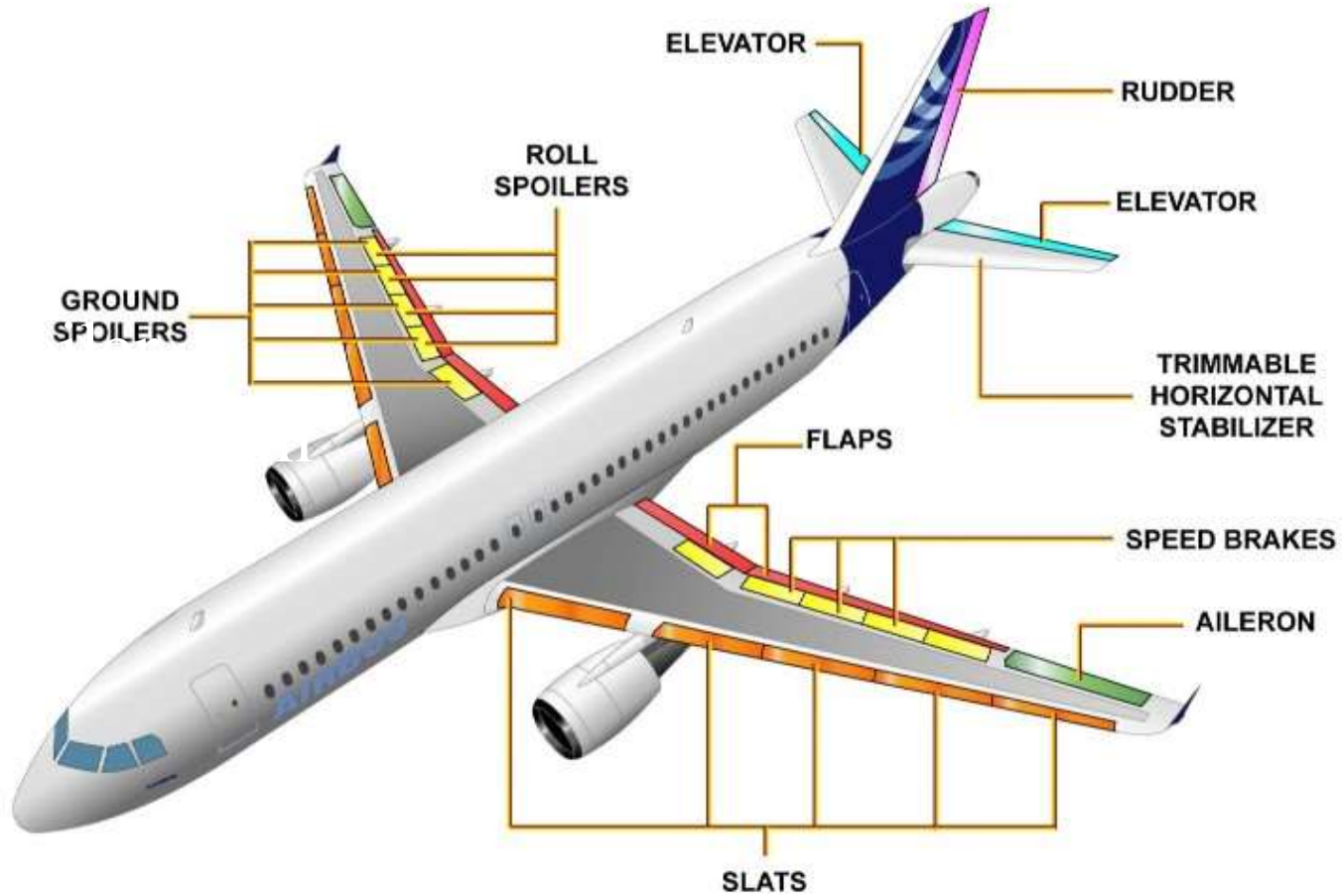
# PRIMARY CONTROL

- Aileron
- Elevator
- Rudder

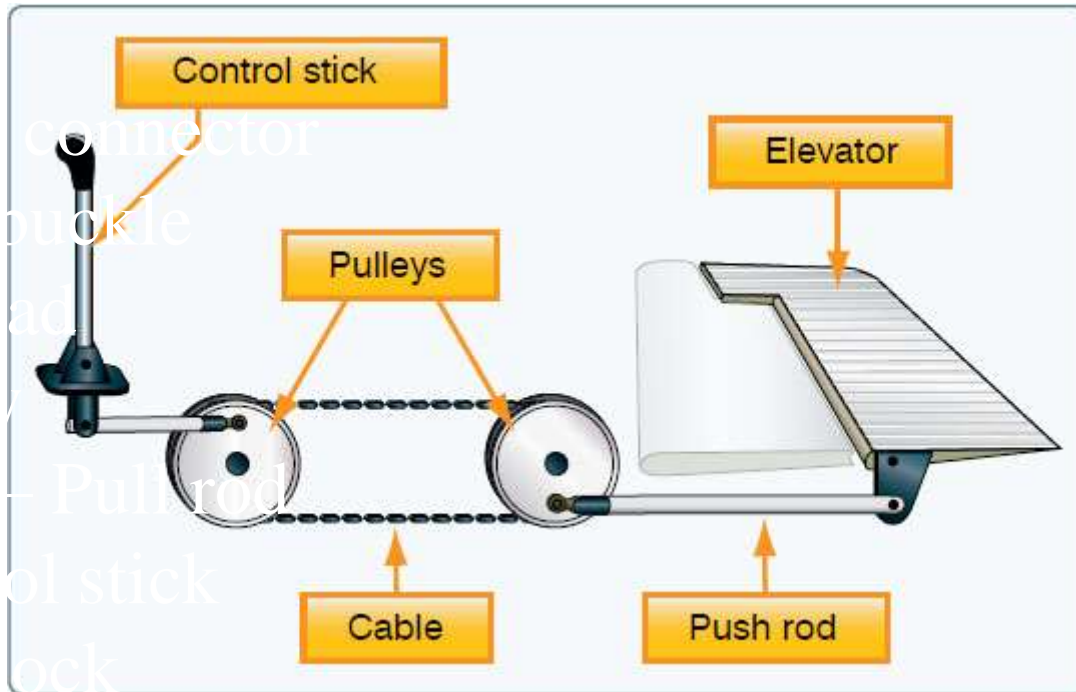


| Primary Control Surface | Airplane Movement | Axes of Rotation | Type of Stability |
|-------------------------|-------------------|------------------|-------------------|
| Aileron                 | Roll              | Longitudinal     | Lateral           |
| Elevator/<br>Stabilator | Pitch             | Lateral          | Longitudinal      |
| Rudder                  | Yaw               | Vertical         | Directional       |

# ***SECONDARY CONTROL***



# ***MECHANICAL CONTROL SYSTEM***



# ***FLY BY WIRE***

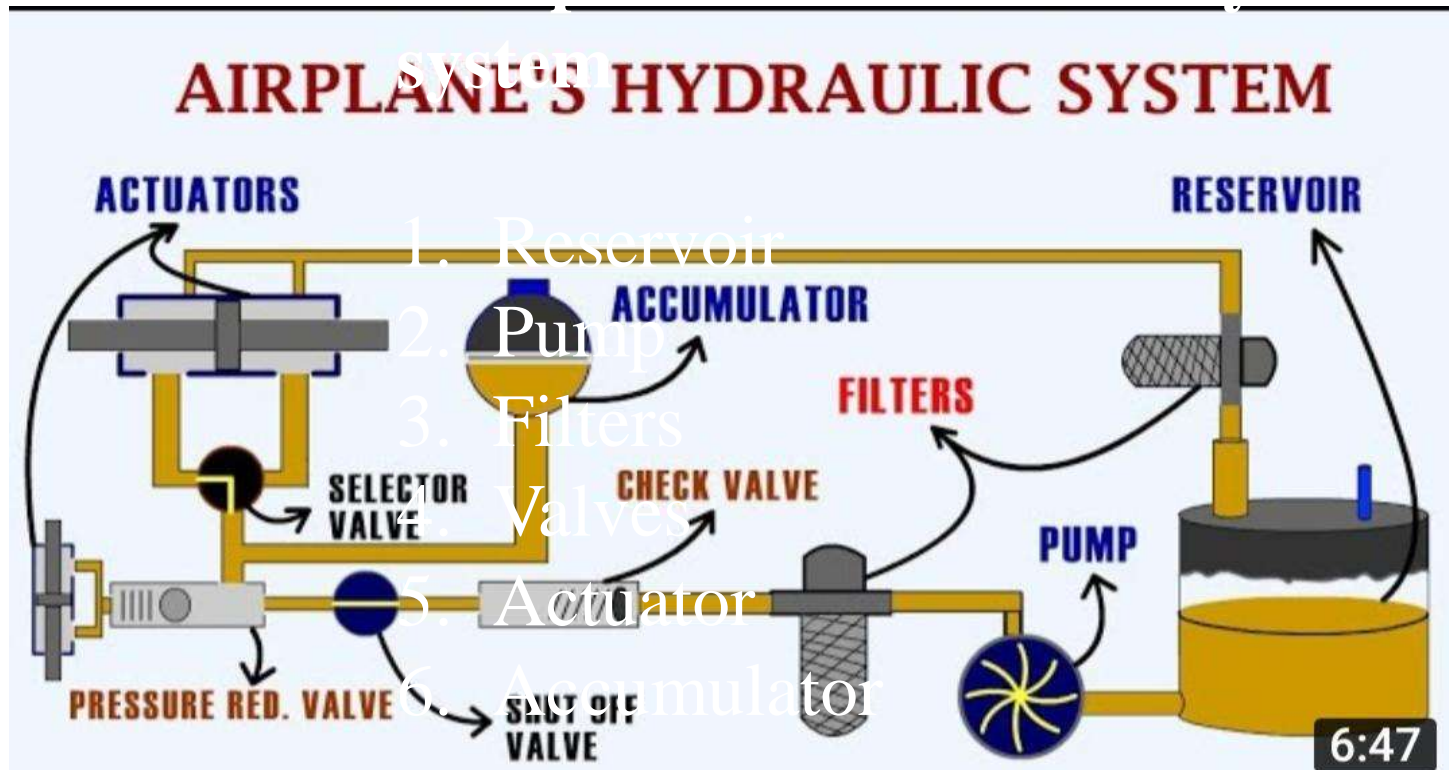
- The term “ Fly – By – Wire” implies a purely electrically signalled control system
- It is used in the general sense of computer configured controls
- Where a computer system is interposed between the operator & the final control actuators
- This modifies the manual inputs of pilot in accordance with control parameters

# ***FLY BY WIRE***

## **Advantage**

1. Reduced wear & tear due to less mechanical contact
2. Intelligent control system
3. Higher accuracy & greater maneuverability
4. Increased Safety and reliability

# AIRCRAFT HYDRAULIC SYSTEM





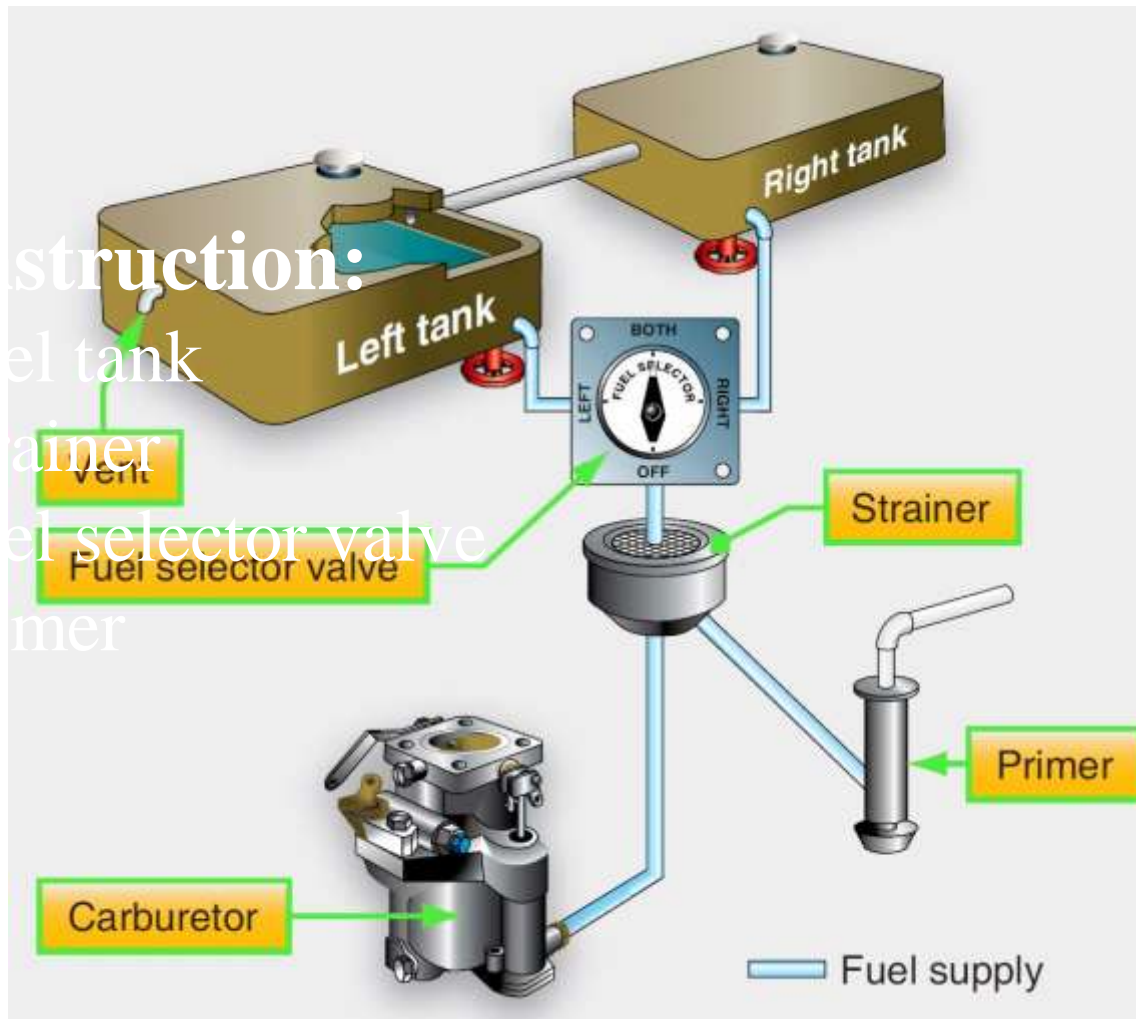
# ***AIRCRAFT FUEL SYSTEM***

**Aircraft fuel system** store fuel in the tanks and then supply this fuel to engines & APU ( Auxiliary Power Unit) it also provide indications such as the fuel quantity & the fuel temperature in the cockpit.

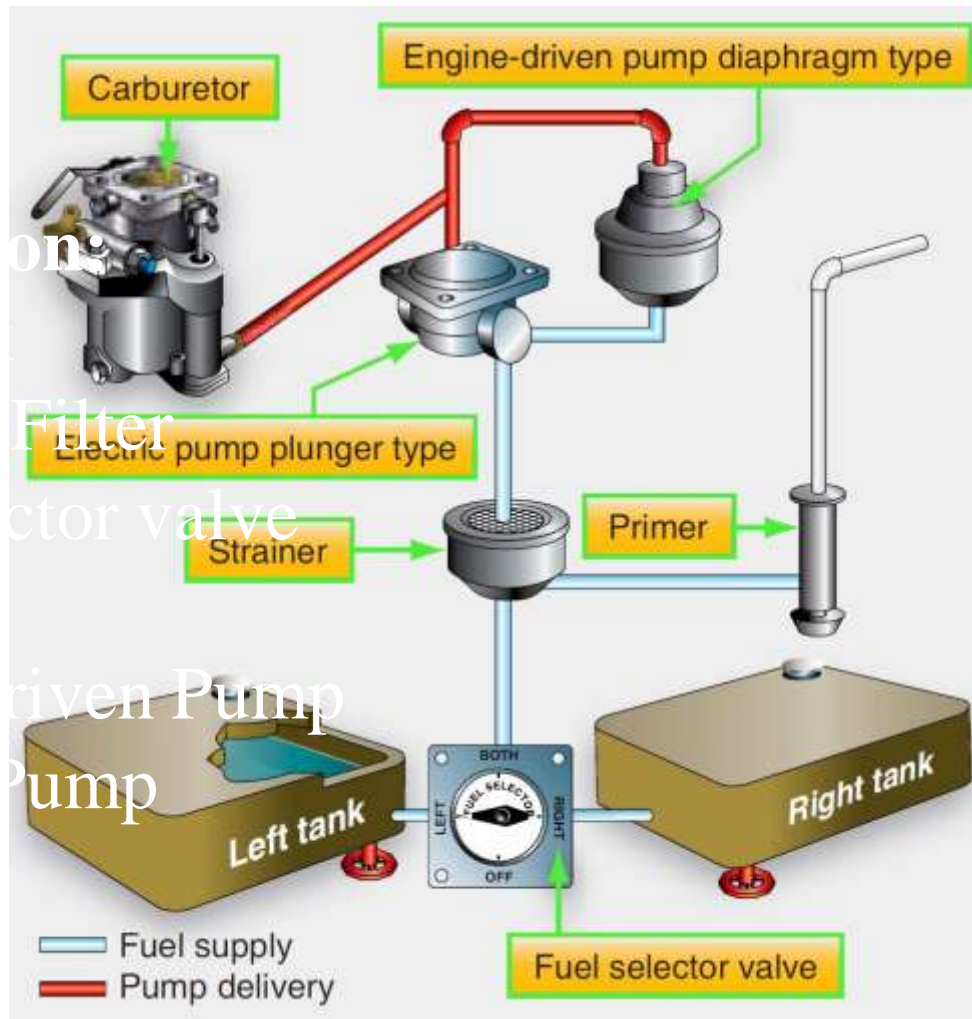
**Aircraft Fuel System are two types:**

- 1. Gravity Fuel Feed system**
- 2. Pressurised Fuel – Pump system**

# ***GRAVITY FUEL FEED SYSTEM***



# ***PRESSURISED FUEL – PUMP SYSTEM***



# ***AIR CONDITIONING SYSTEM***

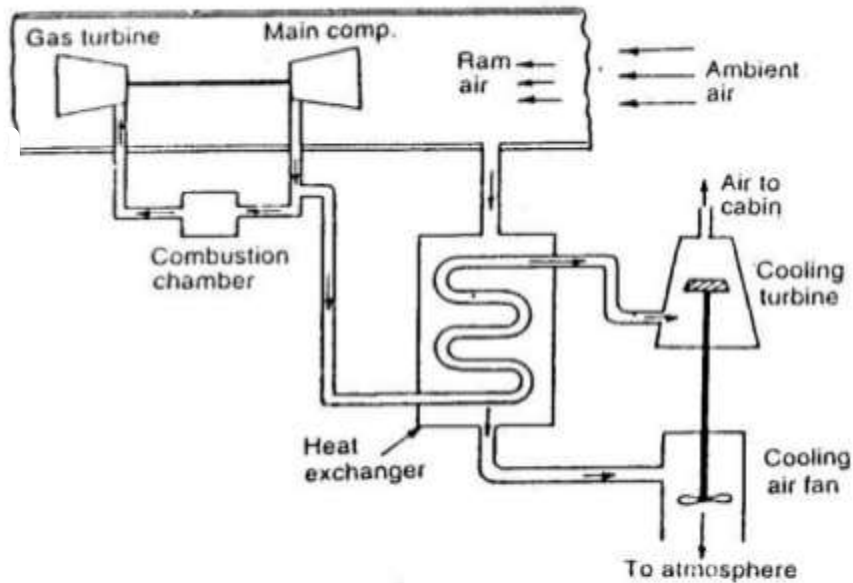
Air cycle air conditioning is used on most turbine-powered aircraft. It makes use of engine bleed air or APU pneumatic air during the conditioning process. Vapor cycle air conditioning systems are often used on reciprocating aircraft.

**Aircraft air conditioning system consists of two system:**

1. Simple Air Refrigeration System
2. Boot – Strap System

# ***SIMPLE AIR REFRIGERATION***

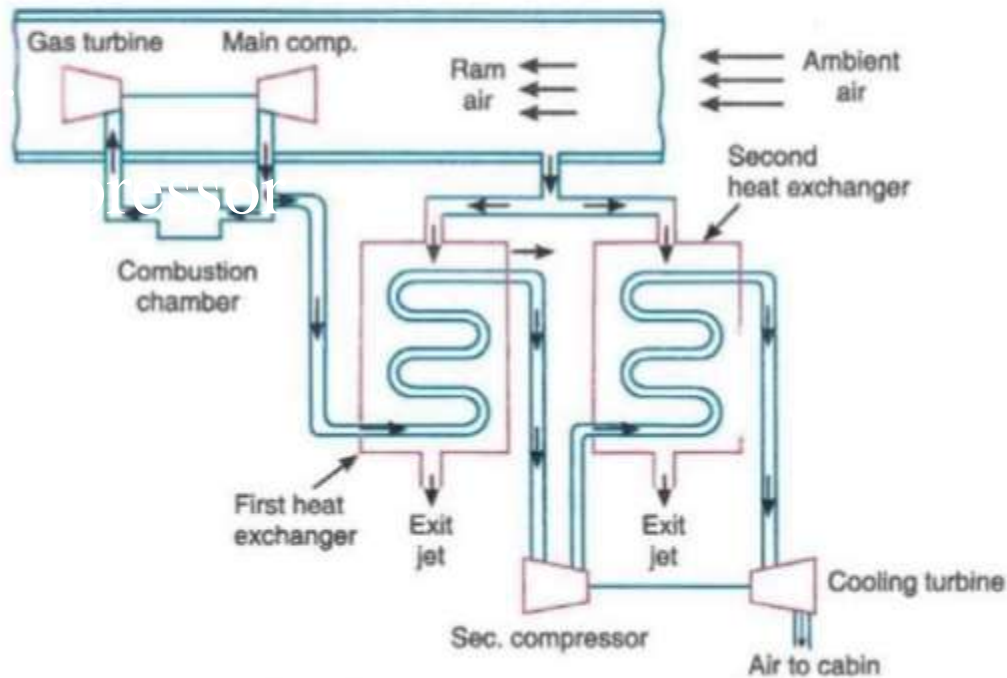
## **1. SIMPLE AIR COOLING SYSTEM**



**Fig. Simple air cooling system**

# ***BOOT STRAP SYSTEM***

## **BOOT-STRAP AIR COOLING SYSTEM**



**Thank You**

