

Four Forces of Flight

- **Lift**
- **Weight**
- **Thrust**
- **Drag**

What Controls the Vertical Axis?

The vertical Axis or Yaw of the plane is controlled by the **Rudder**

What Controls the Lateral Axis?

The Lateral Axis/Pitch is controlled by the **Elevator**

What Controls the Longitudinal Axis?

The Longitudinal Axis/roll is controlled by the **Aileron**

What Affect does weight have on Aircraft Manageability?

- Increasing the Angle of Attack for a given flight attitude
- Reducing Speed, Range, Maximum Altitude

Types of Stability

Static – The initial moment after the aircraft equilibrium is disrupted

Dynamic -- The subsequent time following the disturbance

Positive – Tends to return to equilibrium

Neutral -- Stays in the position it was disturbed with no further degrading or return to equilibrium

Negative -- Continues to degrade, constantly moving further from equilibrium

Center of Gravity

Weight x Arm=Moment
Total Weight/Total Moment=CG

Stall

When the Wing Exceeds the **Critical Angle of Attack** and lift is lost. Can occur at any speed.

