

# SpaceShipOne – flying the rocket plane

**Rudders:** Manual upper rudder used in subsonic flight. Electrically operated lower rudder gives more force for supersonic flight

**Elevons:** Enable craft to dive or climb during subsonic flight

**Feather:** Craft's wing and tail raised into high-drag configuration to allow safe, stable atmospheric re-entry. Pneumatically activated feather is deployed during coasting – after rocket motor shuts down – and during three minutes of weightlessness

Thrusters used during feathered flight phase to control attitude of craft

**Roll:** Up and down movement of wing tips

Roll thrusters use compressed air during flight in space

**Yaw motion:** Movement of nose of craft from side to side around centre of gravity

Pitch and yaw thrusters

**Pitch:** Up or down movement of nose of craft

**1. Centre stick:** Pulled or pushed – lowers or raises elevons to control pitch and roll. At high speed stick feels as if it is in cement

**2. Rudder pedals:** Prevent yawing while turning craft

**3. Rocket motor:** Arming and firing burns for 65 seconds

**4. Yaw trim controller**

**5. Feathering levers:** Deploy and locking levers

**6. Attitude director:** Shows pitch, roll and yaw rates as craft re-enters atmosphere. Toggle switches beneath feathering levers fire thrusters

**7. Cockpit display:** Shows location of aircraft above Earth, route to destination, amount of compressed air remaining for feather and thrusters, and angle of feather

**8. Landing gear:** Extended at 500ft above runway

**Circular portholes:** 16 dual-pane ports. Shape supports structural integrity of fuselage

