

A photograph of a Space Shuttle orbiter and external tank on a Mobile Launcher Platform (MLP) being moved by a crawler-transporter. The MLP is a large, white, cylindrical structure that supports the shuttle and its external tank. The crawler-transporter is a massive vehicle with multiple sets of continuous tracks, designed to move heavy loads across the launch complex. The background shows a clear blue sky with some light clouds. The title "The Shuttle" is overlaid in a large, green, serif font.

The Shuttle

By Joey

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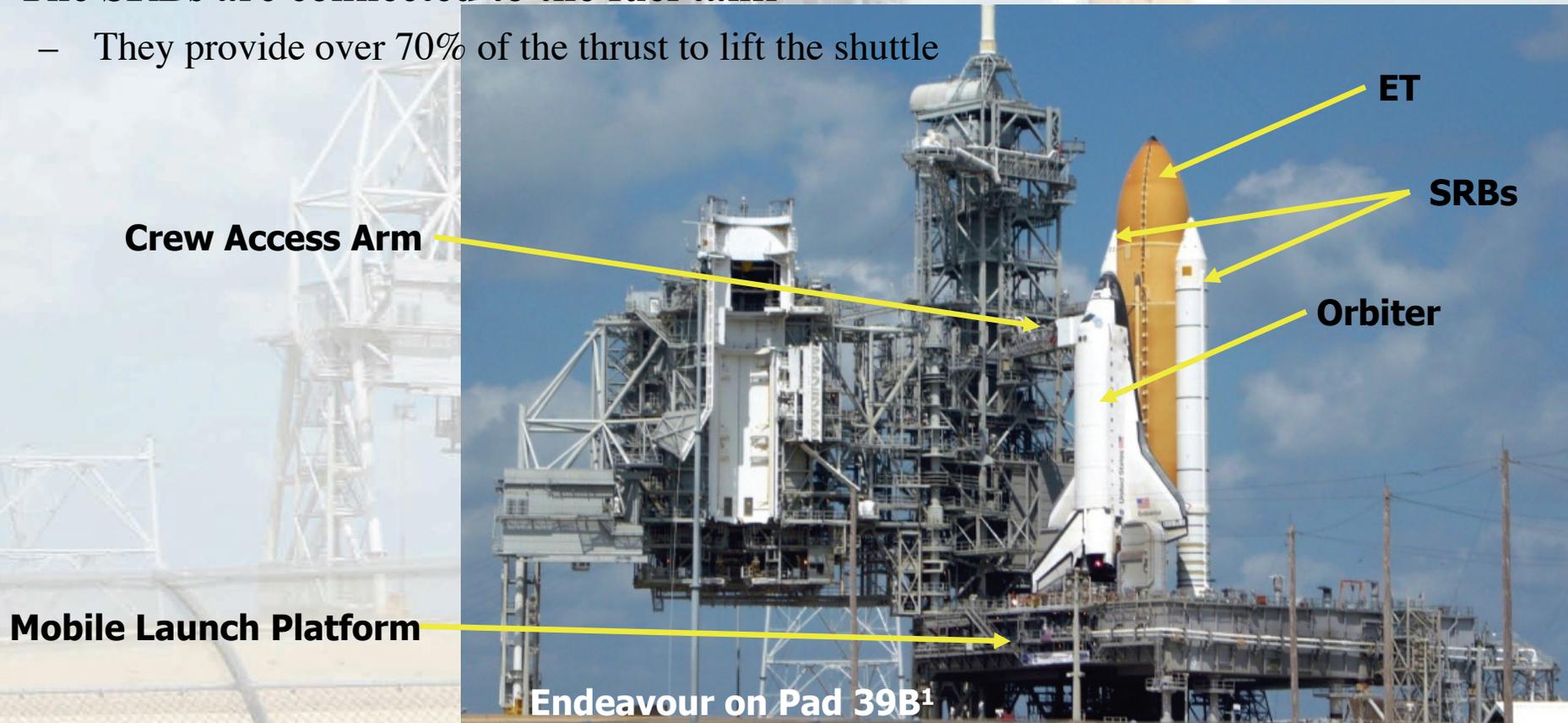
Joey

- **Second Grade , Ca**
- **Wolf Cub Scout**
- **Likes swimming, skiing, Karate, drawing and music**



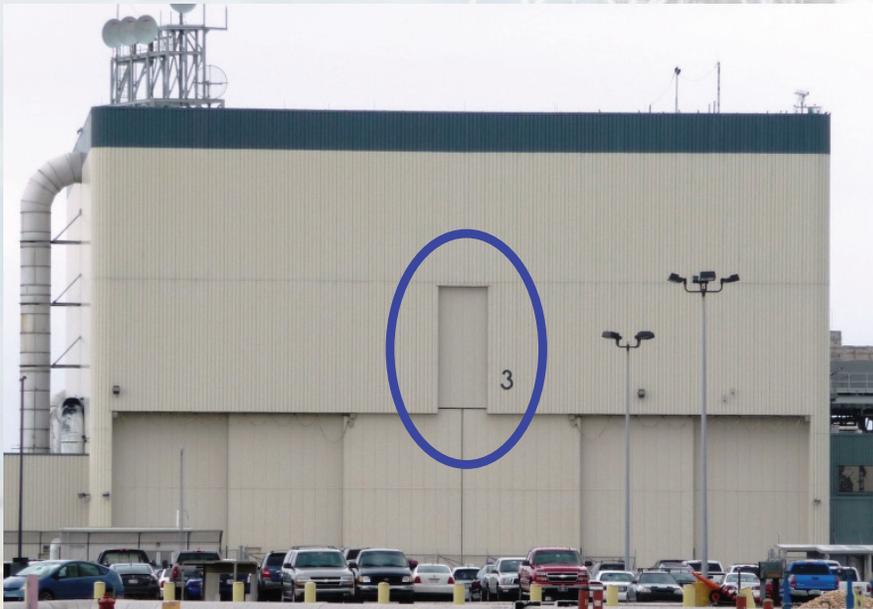
What is the shuttle made up of?

- **The shuttle has 4 main pieces:**
 - The orbiter (This is what most people call the shuttle)
 - An external fuel tank (ET)
 - Two solid rocket boosters (SRBs)
- **The fuel tank connects to the orbiter in 3 places**
 - The ET holds 526,000 gallons of fuel
- **The SRBs are connected to the fuel tank**
 - They provide over 70% of the thrust to lift the shuttle

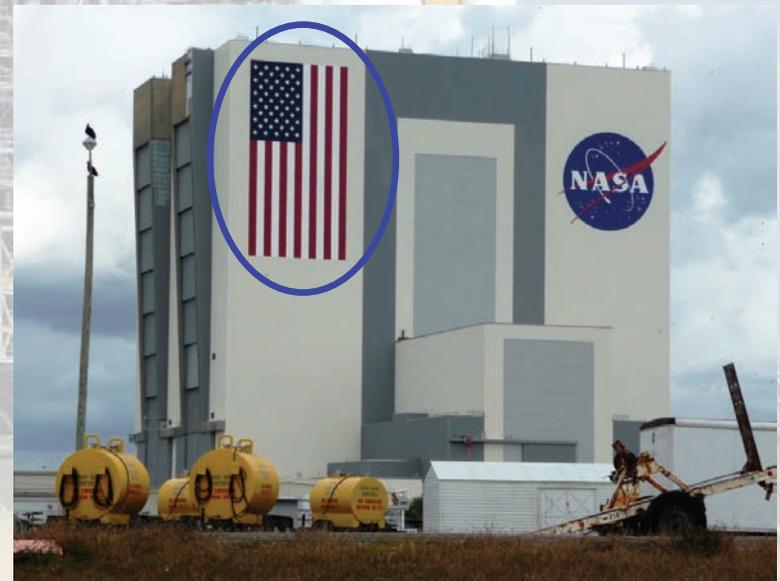


Fun facts about the shuttle

- It's weight is 4,000,000 pounds at take off and 187,000 pounds at landing
- It is 184 ft tall and the orbiter's wing span is 78 ft
 - It is 30 times bigger than a 6 ft tall person
- It flies 150 miles above earth
- It lands at the speed of 215 mph
- The Orbiter Processing Facility (like a garage for the Orbiter) has an extra door above the main door just for the Orbiter's tail
- The stripes of the flag on the side of the Vehicle Assembly Building (VAB) are large enough for a school bus to drive on



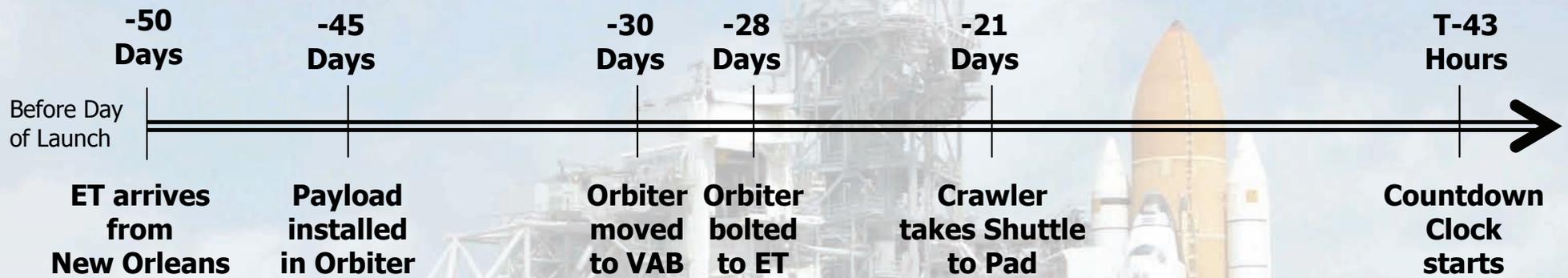
Orbiter Processing Facility³



Vehicle Assembly Building³

Blast off

- The process starts almost 2 months before the shuttle actually blasts off



Vehicle Assembly Building¹



Discovery move to 39A³

Blast off

- On the launch day, lots of things happen in a short time

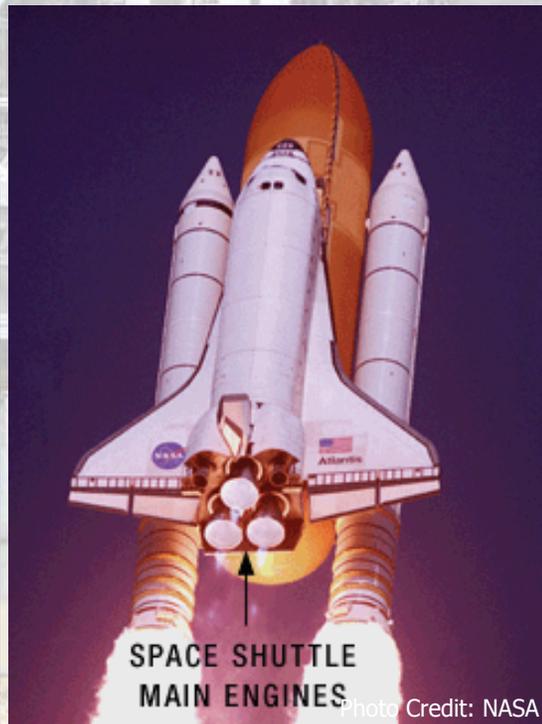
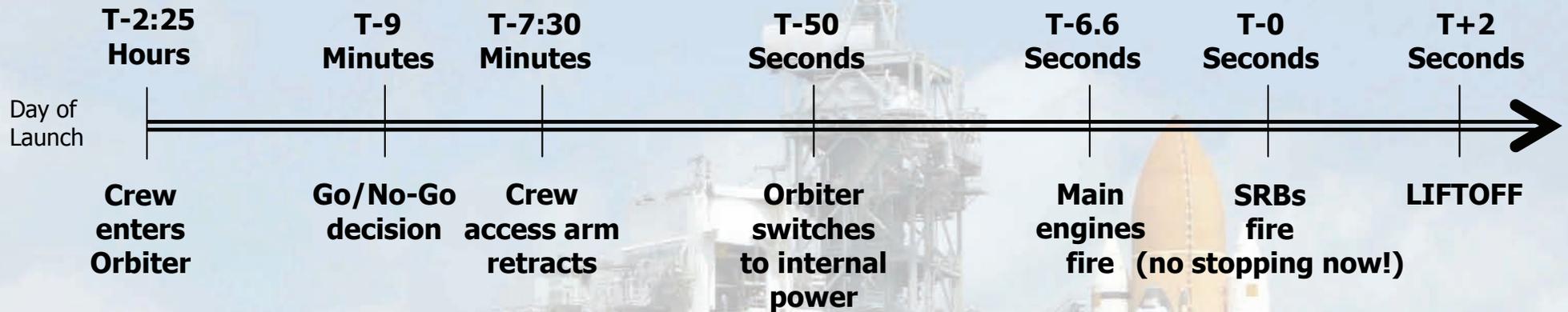


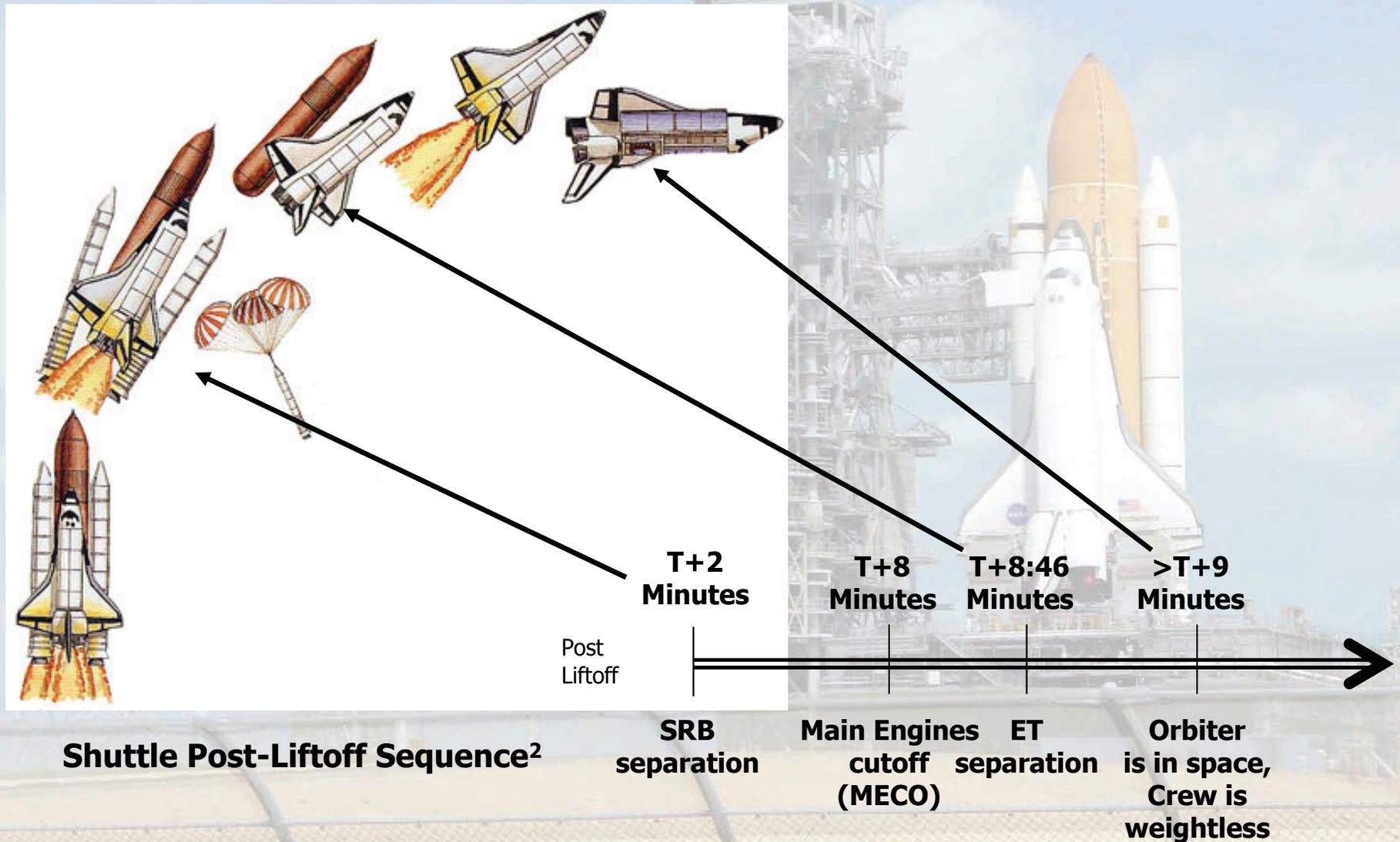
Photo Credit: NASA



Photo Credit: NASA

Blast off

- After liftoff, the ride is really bumpy for about 8 minutes



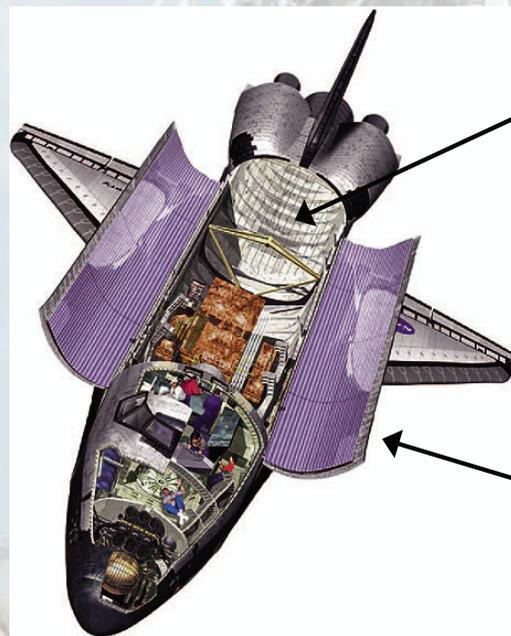
What It's Like to Ride the Shuttle

- **I got to ride the Shuttle Launch Simulator at Kennedy Spaceflight Center**
 - The simulator lasts about 8 minutes
 - The ride was very bumpy
 - It goes from just before liftoff to main engine cutoff and ET separation
 - It was fun and very exciting
- **I also got to walk through a shuttle mockup and see a spare ET and some real SRBs that had been used for shuttle launches**



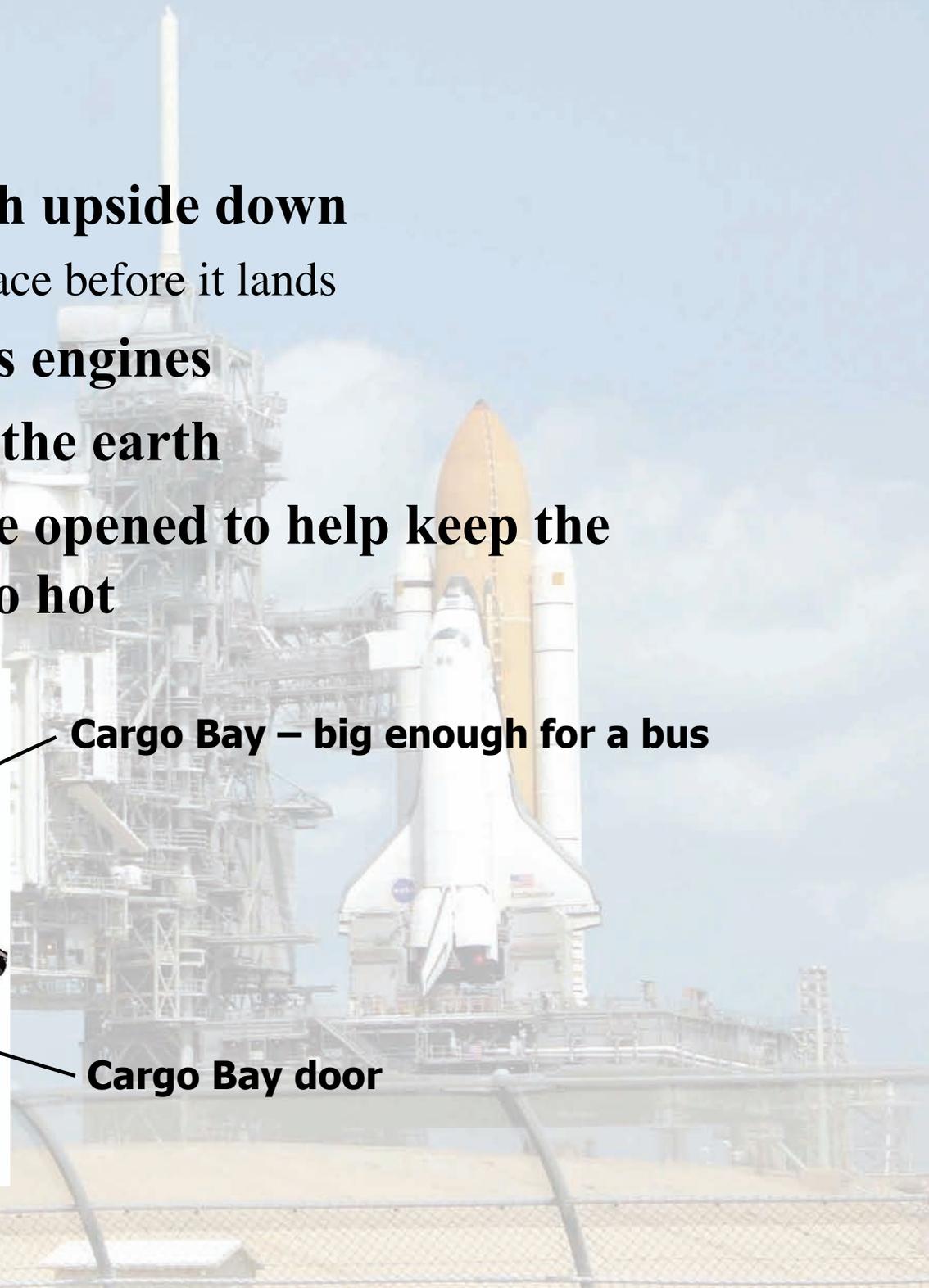
How it orbits Earth

- **It goes around the Earth upside down**
 - It turns right side up in space before it lands
- **It only uses the Orbiters engines**
- **It takes no fuel to orbit the earth**
- **The cargo bay doors are opened to help keep the Orbiter from getting too hot**



Cargo Bay – big enough for a bus

Cargo Bay door



What the Orbiter Does in Space

- **Launches satellites like the Hubble Space Telescope**
- **Helps build the International Space Station (ISS) in space**
 - The orbiter acts like a cargo truck in space
- **The astronauts do science experiments – sometimes even on themselves**



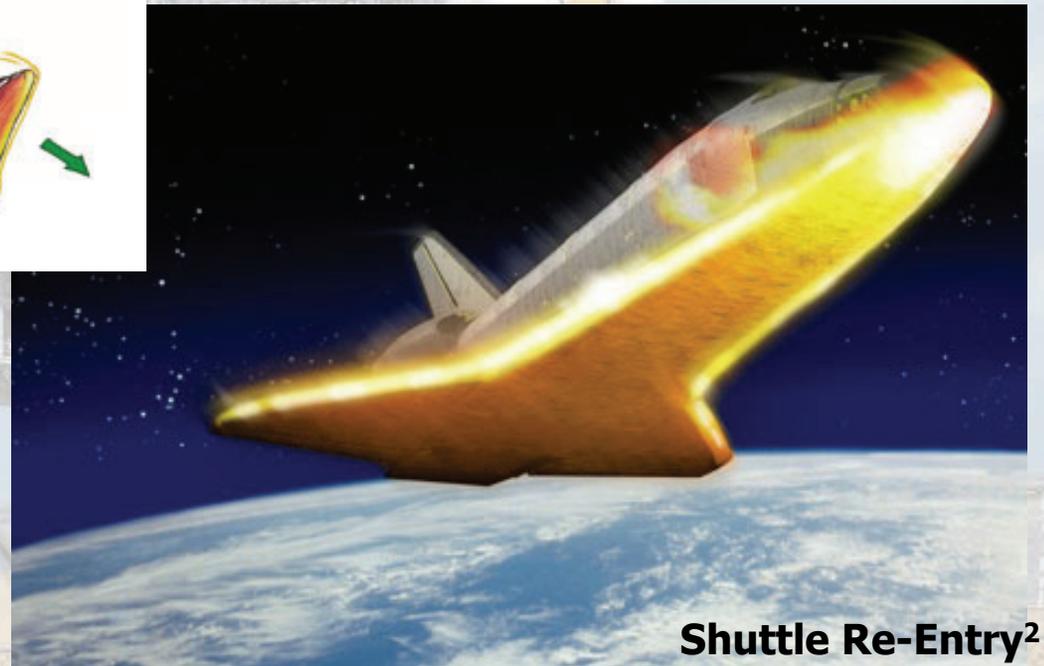
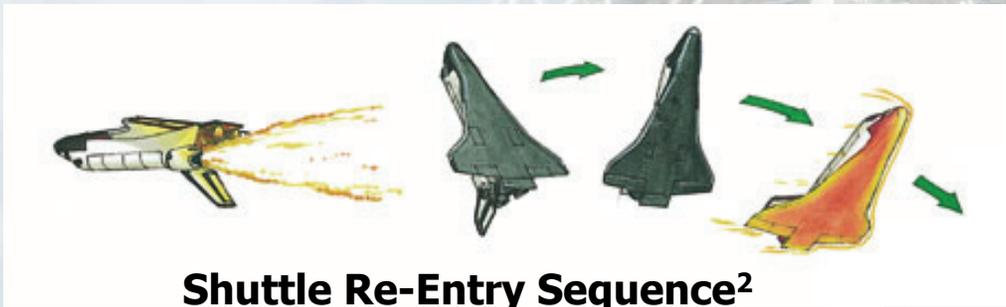
Hubble Space Telescope²



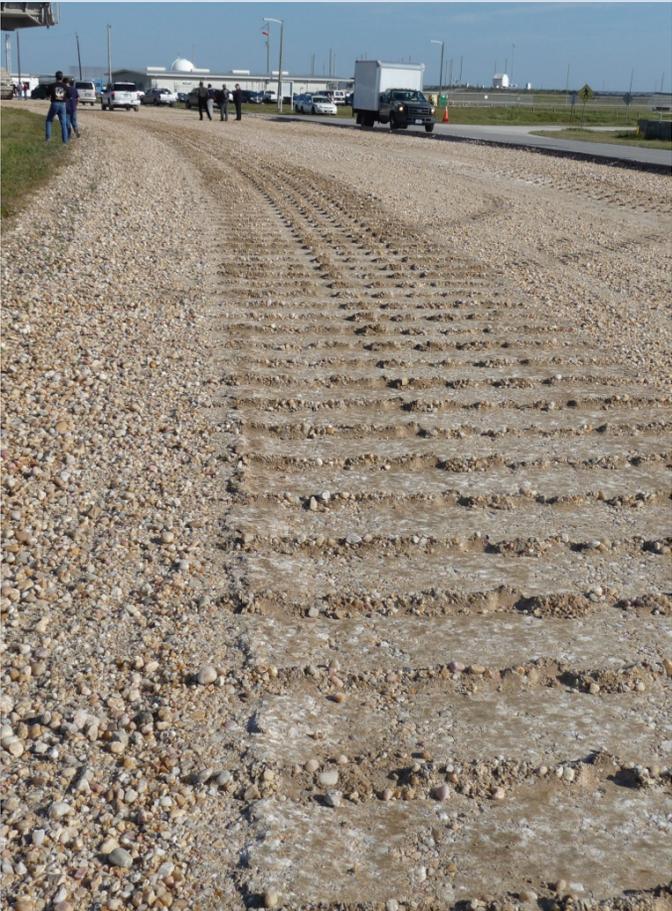
International Space Station²

How it lands

- The shuttle does a back flip to land
- When it is in the atmosphere the shuttle heats up
- The shuttle's tiles keep it from burning
- There are three colors of tile: Gray, White, Black
- This is one of the tiles of the shuttle



Kennedy Spaceflight Center



Astronaut Memorial¹

Crawler Tracks³

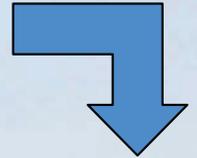


Endeavour, Pad 39B¹

Shuttle Discovery Move to Pad 39A, Jan. 14, 2009



From the VAB



To the Pad



References

- **“Space Shuttle Fact Archive”, by Robert Godwin**
- **“An Educational Read and Color Book of Shuttle Craft”, ed. Linda Spizzirri**
- **“Space Travel”, by Ian Graham**
 - Website: www.spacetravel.dkonline.com
- **www.nasa.gov**
- **Kennedy Spaceflight Center tours and visitor center presentations**



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