

# *SpaceX Moon & Mars Rocket*

*...and material science*



**The Big Falcon Rocket (BFR)**

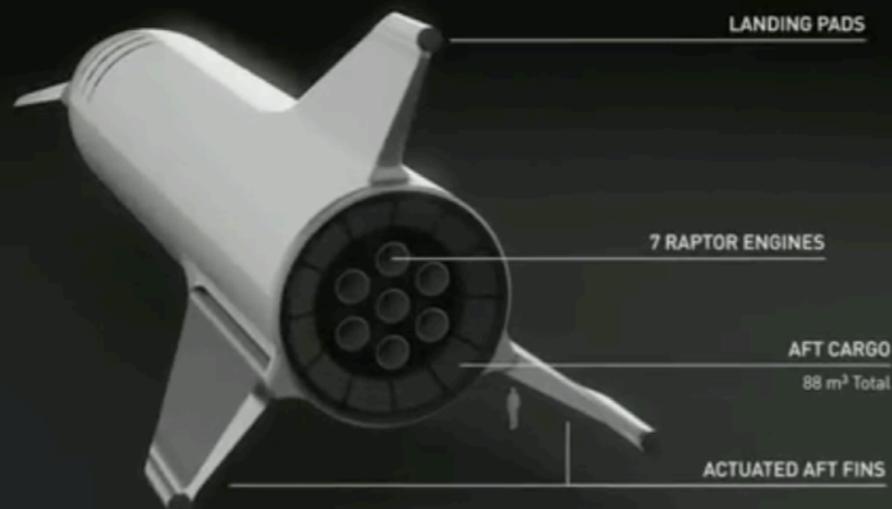
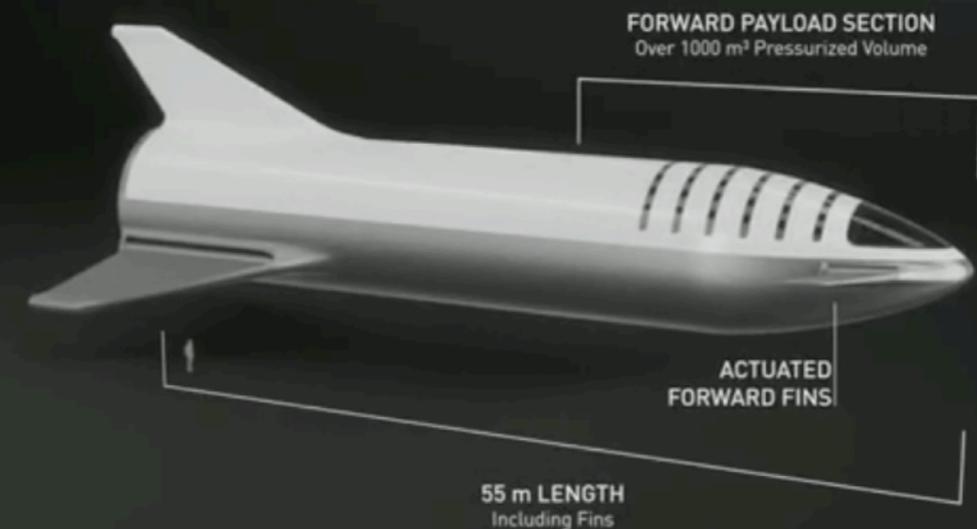
All photos/drawings are provided by SpaceX

# BFR FACTS

BFR is designed to be a 39-story launch system made of two parts:

- a 180-foot-tall spaceship, from tip to tail, and
- a 230-foot-tall rocket booster

- BFR development program could cost about \$US5 billion



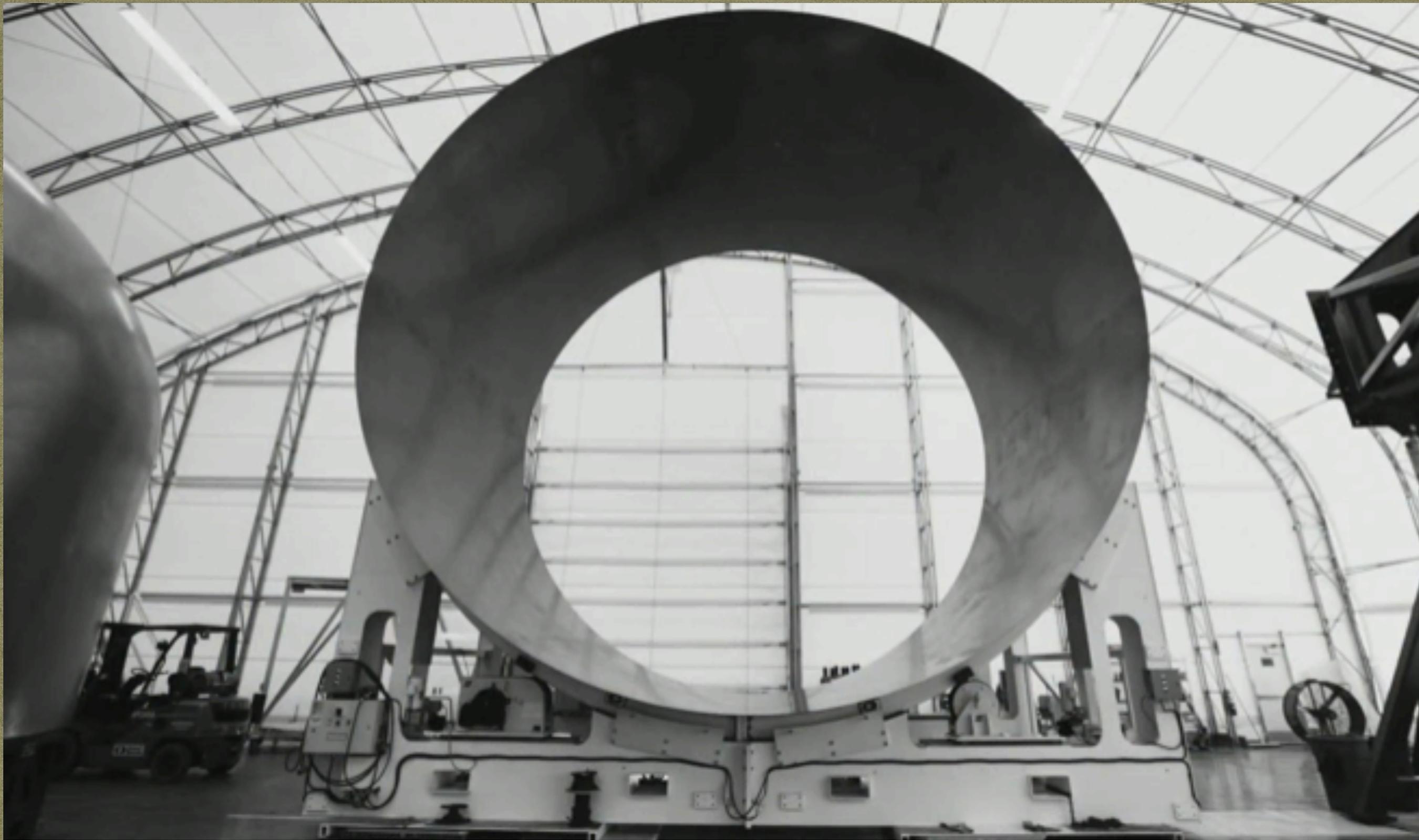
- Vision is to launch the spaceship into orbit and refuel it while it circles Earth
- Then the ship can fire up its engines, fly through space and land on Mars
- then take off again and return to Earth
- It is designed to be *100% reusable*



This is the outside of the cylindrical TOOL called "the mandrel."  
*Robots wrap layer upon layer of carbon-fibre tape around the mandrel to form a 30-foot-wide "barrel section" of the spaceship.*



The outside of the mandrel.



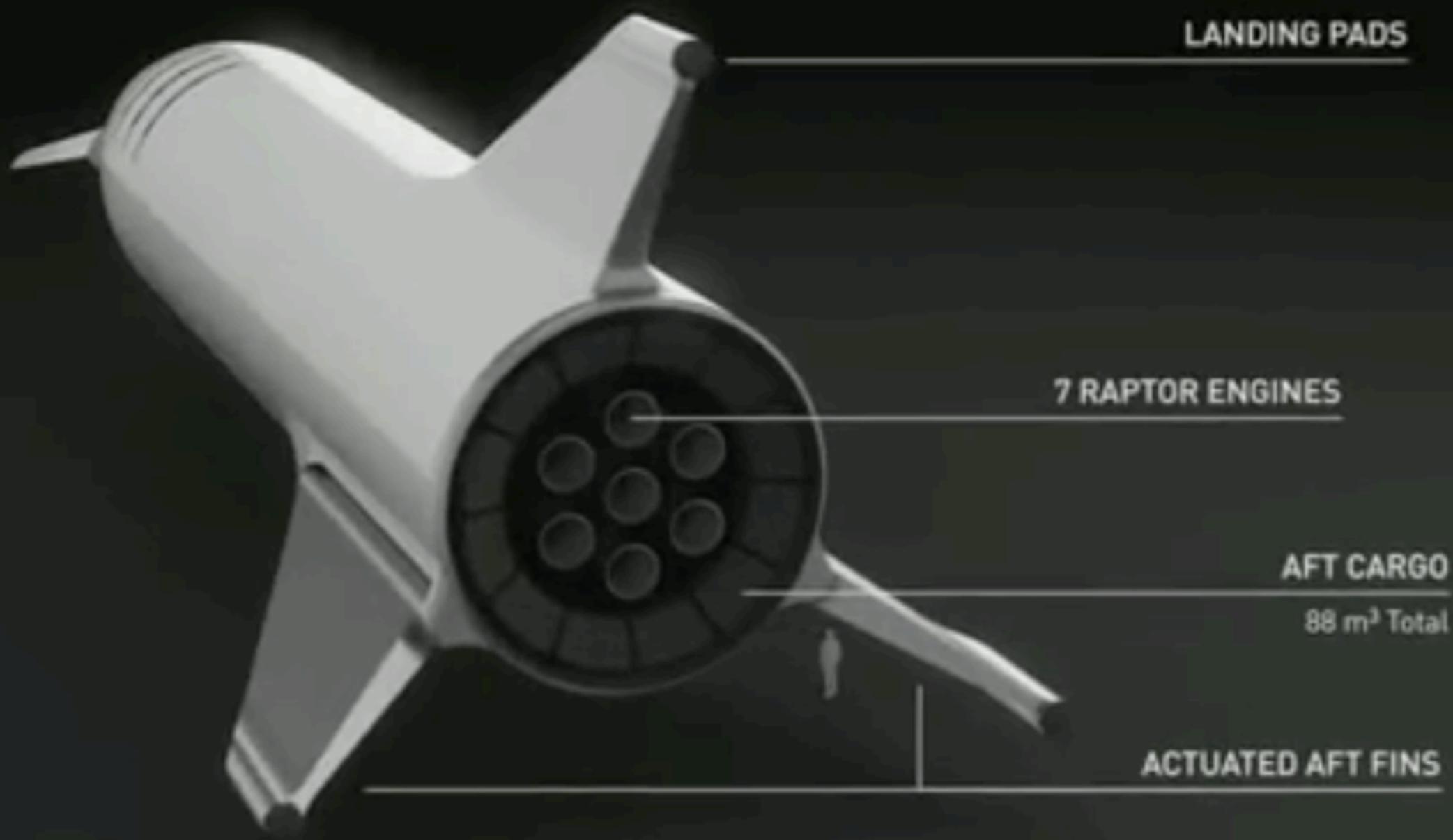
One *barrel section* that's been cured and freed of the mandrel.  
The rounded dome on the left is (supposedly) a part of a propellant tank also made of carbon-fibre composites.



Inside the *barrel section*



Elon Musk hosting the press conference Sept 17, 2018

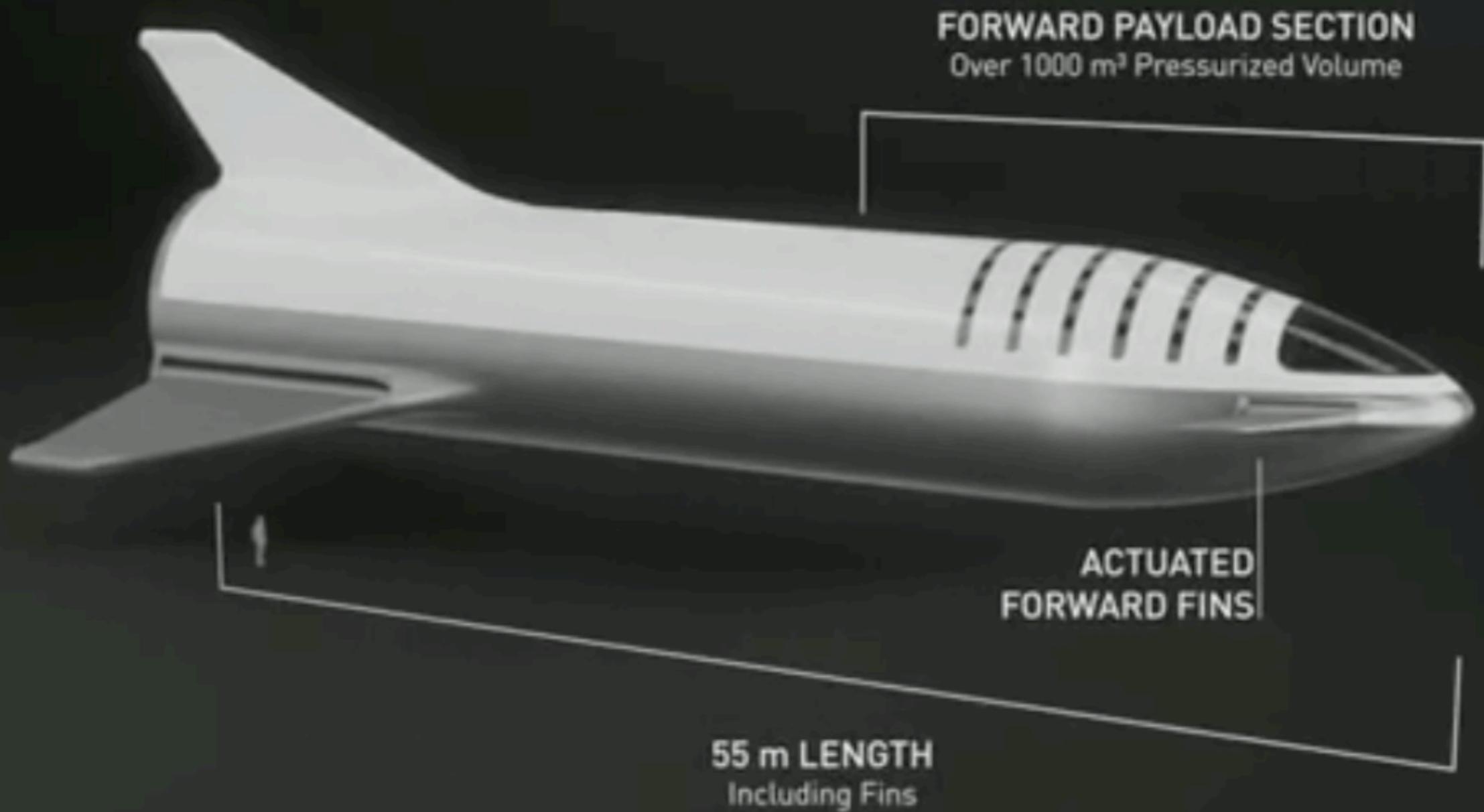


**LANDING PADS**

**7 RAPTOR ENGINES**

**AFT CARGO**  
88 m<sup>3</sup> Total

**ACTUATED AFT FINS**



**FORWARD PAYLOAD SECTION**  
Over 1000 m<sup>3</sup> Pressurized Volume

**ACTUATED  
FORWARD FINS**

**55 m LENGTH**  
Including Fins

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Thank You!



Gary  
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