LAUNCH AMERICA

National Aeronautics and Space Administration

NASA's Commercial Crew Partners

NASA's Commercial Crew Program is working with American aerospace companies Boeing and SpaceX as they develop and operate a new generation of spacecraft and launch systems capable of carrying crews to low-Earth orbit and the International Space Station. The station is a critical testbed for NASA to understand and overcome the challenges of long-duration spaceflight.

Commercializing human spaceflight and cargo transportation builds a strong low-Earth orbit economy, encourages competition, spurs innovation and drives down costs. It also allows NASA to focus on putting the first woman and first person of color on the Moon, and then Mars.

SPACEX

SpaceX Falcon 9

LAUNCH LOCATION: NASA's Kennedy Space Center in Florida

LAUNCH PAD: Launch Complex 39A (LC-39A)

HEIGHT: 229.6 feet

CONFIGURATION: Two-stage rocket

DIAMETER: 12 feet

PROPELLENT: LOX (liquid oxygen) and rocket grade kerosene (RP-1)

PROPULSION: Nine SpaceX Merlin engines – 190,000 lbf each

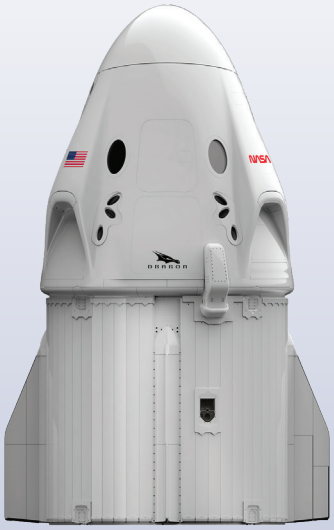
SpaceX Dragon

HEIGHT: 26.7 feet

DIAMETER: 13 feet

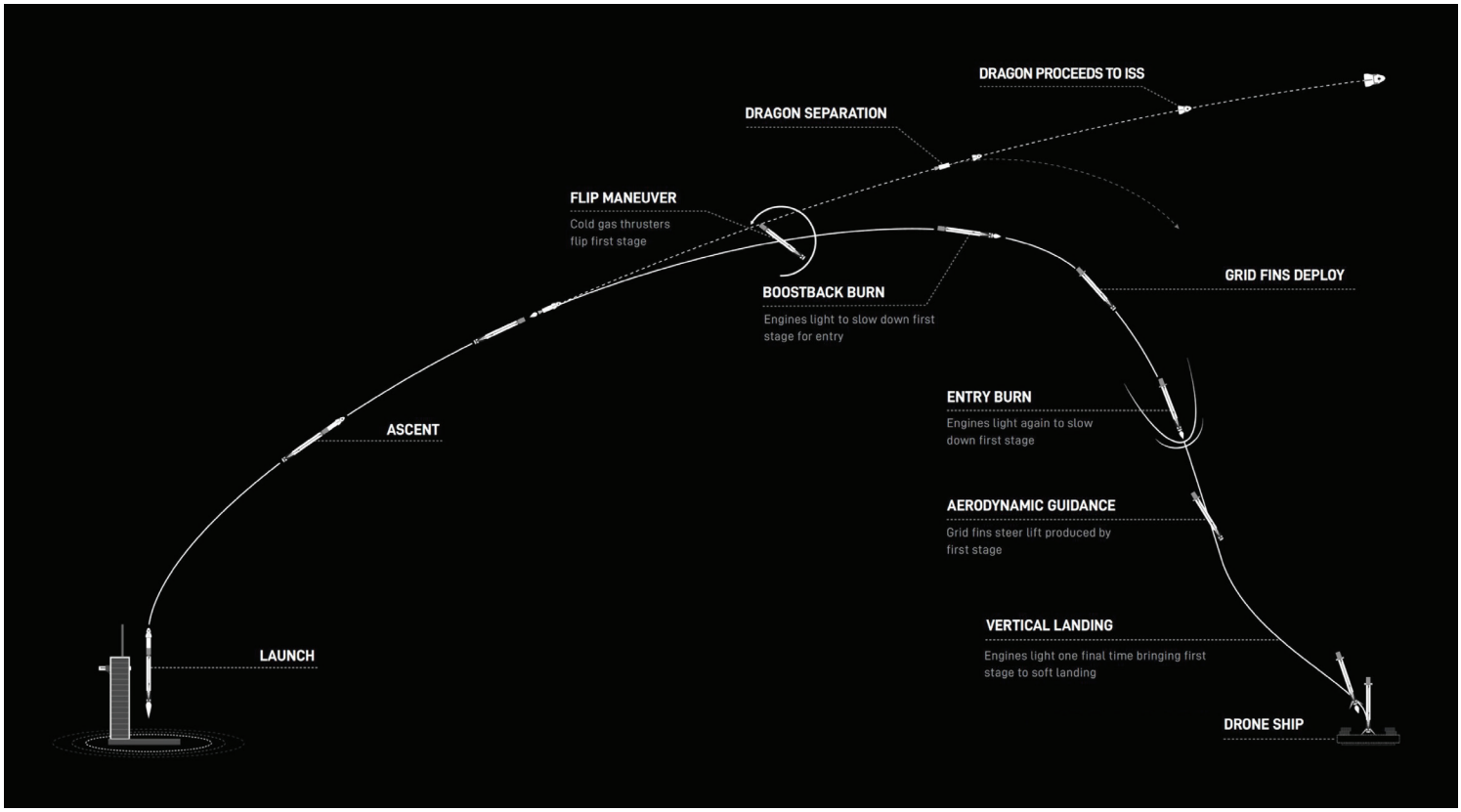
CREW CAPACITY: Up to seven

RETURN: Splashdown-based water return



Mission Profile

Launch, Ascent: SpaceX's Dragon spacecraft launches on the company's Falcon 9 rocket from Launch Complex 39A at NASA's Kennedy Space Center in Florida. The spacecraft is composed of two main elements: the capsule, which is designed to carry crew and critical, pressurized cargo, and the trunk, which is an unpressurized service module. Falcon 9's second stage will accelerate Dragon to an orbital velocity of 17,500 mph prior to spacecraft separation on its path to rendezvous and dock with the International Space Station.



Rendezvous and Docking: Once in orbit, the crew and SpaceX mission control monitor a series of automatic maneuvers that will guide Dragon to the station. After a series of orbit adjust maneuvers, Dragon will be in position to rendezvous and dock with the station. The spacecraft is designed to autonomously dock, with the ability for the crew to take control and pilot manually if necessary.

Undocking, Deorbit, Reentry and Landing: Dragon conducts a series of maneuvers upon departure from the station to safely depart its vicinity in preparation for deorbit. That leads to atmospheric reentry followed by drogue parachute deploy, which then extracts the four main chutes ahead of splashdown at one of several splashdown zones. A prime and backup site are selected based on favorable weather conditions for splashdown and recovery of the spacecraft and crew. The seven zones are located off the coast of Florida: Pensacola, Panama City, Tallahassee, Tampa, Jacksonville, Daytona, and Cape North.

SpaceX's recovery ship is fully staffed and equipped with a crane to lift the capsule out of the water and onto the main deck. The ship is also outfitted with a medical facility and helipad, allowing for routine medical checks as well as for the swift transport to shore.