



Oct. 17, 2011

Virgin Galactic Space Vehicles Fact Sheet

[Virgin Galactic](#), the world's first commercial spaceline, owns and operates two space vehicles, SpaceShipTwo and WhiteKnightTwo:

SpaceShipTwo (SS2, VSS Enterprise)

- Uses much of the same technology, construction and design of [SpaceShipOne](#), but is twice the size
- Carries six passengers and two pilots
- Technical specifications
 - Dimensions
 - Wing span: 42 feet
 - Length: 60 feet
 - Tail height: 18 feet (feather down)
 - Cabin details: 6 passenger seats; 90-inch diameter x 12 feet long
 - Cabin approximately the size of a Falcon 900 executive jet
 - Whole fuselage used for passenger cabin – no raised “floor”
 - Large windows positioned throughout the cabin to afford maximum viewing potential for passengers
 - Planning for reclining seats to maximize cabin space in zero-g and for re-entry
 - Feathering wings for re-entry: same technology as SS1; improved aerodynamics
 - Construction: All structural components are 100 percent carbon composite
 - Propulsion: hybrid rocket motor uses benign fuel and oxidizer (the same means of propulsion as SS1) and is controllable – can be shut down at any time during boost phase of flight
 - Power: after release from carrier aircraft, operates on internal power supply for ascent; re-entry and landing are unpowered
 - Gear: tricycle gear configuration; 2x wheeled main gear; 1x nose skid, with abrading shoe, like SS1
- Flight Profile
 - Total flight time around two hours
 - G-Forces: Max gx (front to back): 6g; Max gz (head to toe): 3.5g
 - Planned apogee of spaceflight: at least 110 km
 - Zero-g phase – several minutes of out-of-seat time
 - Velocity: supersonic within eight seconds of rocket ignition with a maximum velocity of approximately Mach 3.5
- Total Number of Flights: 30 times (16 glide flights; 14 captive carry flights; all as of Oct. 17, 2011)
- Milestone dates:
 - Unveiled on Dec. 7, 2009
 - First “captive carry” test flight on March 22, 2010
 - First drop test and solo flight: October 10, 2010
 - First feathered flight: May 4, 2011
- Designed and built by [Scaled Composites](#); future SS2 vehicles will be manufactured by [The Spaceship Company \(TSC\)](#)

WhiteKnightTwo (WK2, VMS Eve)

- Carrier aircraft for SpaceShipTwo
- Largest carbon composite carrier craft in service (all structural components are 100 percent carbon composite)
- Training vehicle for SS2 spaceflight
 - Can simulate SS2 g-force profile
 - Both fuselages replicate that of SS2 and right-hand cabin interior is identical, allowing passenger training
 - Unique high-altitude lift aircraft potentially suitable for various payloads
- Technical specifications:
 - Dimensions:
 - Wing span: 140 feet (only 16 feet less than Boeing 767-300)
 - Length: 78 feet
 - Tail height: 25 feet
 - Construction: Twin boom/fuselage construction
 - Powerplant: uses highly efficient turbo fan jet engines
 - Gear: Quadricycle gear configuration, retractable
 - Performance: SS2 ferry range; U.S. coast to coast
- Flight profile for nominal SS2 release:
 - Total flight time: approximately two hours
 - From takeoff to SS2 release: approximately 45 minutes
 - SS2 release: 50,000 feet
- Total Number of Flights: 75 flights (as of Oct. 17, 2011)
- Milestone dates:
 - First flight: Dec. 21, 2008
 - Test flight program substantially complete with more than 70 successful flights, including high-altitude and long-duration
- Designed and built by [Scaled Composites](#); future WK2 vehicles are being manufactured by [The Spaceship Company \(TSC\)](#)

Environmental Impact

- Air release of SS2 means short rocket burn.
- Both WK2 and SS2 are reusable, resulting in no space debris.

Licensing

- U.S. regulatory framework established by 2004 Commercial Space Launch Amendments Act, which empowered the Office of Commercial Space Transportation within the Federal Aviation Administration to regulate and license commercial space launch vehicles and operators.
- Enshrined the principle of Informed Consent for space flight participants, permitting a licensed operator to carry passengers on space flights, once the passengers are informed of and accept a comprehensive explanation of the potential risks involved.

###

MEDIA CONTACT

Jeff Carr
Griffin Communications Group
(832) 864-7224
(281) 381-5427 cell
Jeff@GriffinCG.com