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INVITED PAPER: VIRGIN GALACTIC'S COMMERCIAL SPACELINER

Abstract

Virgin Galactic, a privately funded company based in the USA, is on track to become the world's first commercial spaceline. Virgin Galactic was founded 2004 to commercialize the technology behind SpaceShipOne and WhiteKnight, the Ansari X PRIZE-winning suborbital spaceflight system that made history by becoming the first privately-built vehicle to safely carry human beings into space. Beginning in 2005, Virgin Galactic and prime contractor Scaled Composites began work on a larger, more advanced version of that spaceflight system. Like its predecessor, this system consists of two vehicles: the mothership, WhiteKnightTwo, and the air-launched suborbital spacecraft, SpaceShipTwo. Both of these vehicles have been constructed and have made substantial progress through their test flight programs. These vehicles are designed for frequent, affordable, and safe suborbital voyages, and customers range from tourists to researchers and educators to automated payloads. In late 2011, NASA became a customer of research payload flights on board SpaceShipTwo, purchasing a full flight with options for further flights through the Flight Opportunities Program. In addition to its primary function as an air-launch platform for SpaceShipTwo, additional applications for the WhiteKnightTwo mothership are also anticipated. This paper will provide an update on the testing and performance of both vehicles, the markets identified to date, and other developments currently in work.