

## **ORBITEC and Sierra Nevada Space Systems Begin Testing Dream Chaser® Orbital Crew Vehicle Life Support and Thermal Systems**

Orbital Technologies Corporation (ORBITEC) is the prime contractor for Environmental Control and Life Support System (ECLSS) and Thermal Control System (TCS) for the Sierra Nevada Corporation's (SNC) Dream Chaser® Space System. ORBITEC has, along with its partner Hamilton Sundstrand, successfully completed two major tests for SNC under NASA's Commercial Crew Development (CCDev) Program. The tests include the first integrated system testing and first integrated human testing of ECLSS and TCS components developed for the Dream Chaser®, SNC's reusable orbital crew vehicle, intended to carry astronauts to and from low Earth orbit.



SNC is keenly focused on the safety and reliability of its vehicle and operations. Verifying and demonstrating both the functionality and the safety/reliability of the ECLSS and TCS subsystems for simulated full mission durations prior to Preliminary Design Review is a major goal of the entire team. These early tests, using significantly demonstrated hardware, represent a singular example of how ORBITEC and SNC are approaching the crew transportation program. Jim Voss, Vice President of SNC Space Exploration and former NASA astronaut, had this to say regarding the tests, "The ORBITEC/Hamilton Sundstrand team has done a great job of advancing the Dream Chaser life support and thermal control systems to allow this testing. This validates the heritage hardware design that supports an early crew transport capability for our Nation's space program."

The SNC Dream Chaser® testing was completed at ORBITEC facilities in Madison, WI with assistance from the Hamilton Sundstrand office in Connecticut and Texas. Mark Sirangelo, head of Sierra Nevada Space Systems, said, "SNC is proud to partner with the leaders in crew support systems to bring known hardware to the Dream Chaser® and assist in the creation and retention of high value jobs in Wisconsin, Connecticut and Texas."

All tests were completed in an environmental chamber representative of the Dream Chaser® containing a majority of the ECLSS and TCS subsystems that will ultimately be located inside the spacecraft. Successfully completing the integrated hardware testing advanced and matured the ECLSS and TCS architectures and the integrated Dream Chaser® configuration.

"Tests such as these really challenge the subsystems' abilities to work well together and are a great step towards understanding the system dynamics, retiring risks and focusing on a clear path to a successfully operating system, especially when we can run such tests early in the development cycle," said Tom Crabb, President of ORBITEC. "The ORBITEC team is dedicated to supporting SNC's demonstrated commitment to safety, reliability, and efficiency."

**About ORBITEC:** ORBITEC leads technology and subsystem development and integration in Madison, WI, and is the prime contractor for SNC in the areas of life support and thermal control. ORBITEC offers commercially mature solutions and strong capabilities in four distinct areas: life support and environment control, propulsion systems and novel propellants, bio-based products and production systems, and flight-based automated science systems. ORBITEC has been in business since 1988, maintains significant core engineering development and flight system test and validation capabilities, and seeks continual expansion through value-added partnerships for such product integration. See [www.orbitec.com](http://www.orbitec.com) for more information.

**About Sierra Nevada:** SNC is a privately held, world-class prime systems integrator and electronic systems provider known for its rapid, innovative, and agile technology solutions. Headquartered in Sparks, Nev., SNC is the top, woman-owned, federal contractor in the U.S., employing more than 2,200 people in locations in 16 states, along with numerous customer support sites located throughout the world. Sierra Nevada Space Systems has been in business for more than 25 years and has successfully produced over 4,000 systems, subsystems and components for over 400 space missions.

**About the Dream Chaser®:** Based on the NASA HL-20 crew lifeboat, The Dream Chaser® is a lifting body vehicle that offers significant advantages over capsules, including: low-g atmospheric reentry, low impact runway landing, immediate access to crew and sensitive science experiments, and support for ill or injured crew. Using Sierra Nevada's patented hybrid rocket engines for propulsion, there are no toxic fuels or hazardous operations required. It is a highly maneuverable vehicle and is capable of autonomous or piloted operation and landing. The Dream Chaser® Space System is being developed under NASA's Commercial Crew Development (CCDev) Program with substantial co-investment by Sierra Nevada. NASA intends to purchase transport services for crew to LEO starting in 2016 from commercial providers like Sierra Nevada who will own and operate the vehicles.

**About Hamilton Sundstrand:** Hamilton Sundstrand is headquartered in Windsor Locks, Conn with offices also in Texas. Among the world's largest suppliers of technologically advanced aerospace and industrial products, the company designs, manufactures, and services aerospace systems and provides integrated system solutions for commercial, regional, corporate, and military aircraft. It also is a major supplier for space programs over the past 50 years including Apollo, Skylab, Space Shuttle and the International Space Station.

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