National Aeronautics and Space Administration

Space Technology Game Changing Development

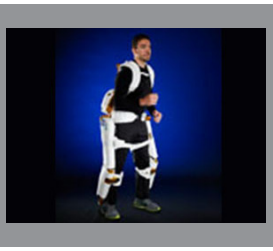
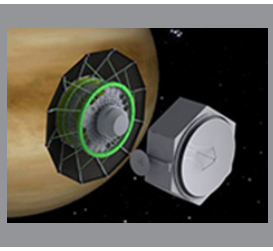
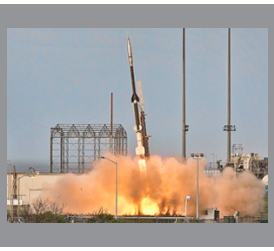
Monthly Highlights

November/December 2012

Composite Cryotank Project Delivers Major Milestone

A 2.4-meter-diameter propellant tank made of composite materials arrived on Nov. 20, 2012 at NASA's Marshall Space Flight Center in Huntsville, Ala., where engineers are preparing it for testing. Composite tanks have the potential to significantly reduce the cost and weight for heavy-lift launch vehicles and for other future in-space missions. The tank's arrival marks a significant milestone that was made possible because of contributions made over the last year by multiple NASA centers and The Boeing Company, the prime contractor for the project. This is the largest composite tank ever produced with new materials that do not require autoclave processing. Complex autoclaves for processing large composite structures are high-pressure furnaces. Boeing used a novel automated fiber placement technique to manufacture the tank in Tukwila, Washington. Marshall is leading the Composite Cryotank Technologies and Demonstration project with support from NASA's Glenn Research Center in Cleveland; NASA's Langley Research Center in Hampton, Va.; and NASA's Kennedy Space Center in Florida through funding provided by the NASA Space Technology's Game Changing Development program.

John Vickers, project manager (from top), John Fikes, and Justin Jackson examine largest out-of-autoclave composite cryogenic tank produced to date in a clean room at Marshall.

Game Changing Program Office Begins Center Reviews

In October, Game Changing Development Program management began visiting NASA centers to review Game Changing projects and to better understand each center's capabilities as well as hear presentations on potential new activities. Management visited Glenn Research Center, Ames Research Center and Johnson Space Center. Additional center reviews are planned for the beginning of the year.

Program Management tour NASA Ames' Arc Jet Facility where GCD testing is being conducted.

Dana Gould, Bob Hodson and Chuck Brooks at GRC.

Program Manager Steve Gaddis takes the EVA Jetpack for a spin at JSC.

Game Changing Education and Public Outreach

Technology Days in Cleveland

Space Technology had a strong presence at the first NASA Technology Days — a collaborative effort between NASA HQ and NASA's Glenn Research Center held Nov. 28-30 in Cleveland, Ohio. The three-day event brought together a broad community of stakeholders from industry, academia, and U.S. Federal government who engaged in discussions and showcased technologies related to strategy building, development and partnerships. A technology exposition featured displays in the following areas: Aerospace, transportation, advanced energy for terrestrial applications, innovative manufacturing and biomedical. The Game Changing Development Program supported the event with an exhibit that showcased NASA Space Technology's additive manufacturing capabilities, inflatable heatshield technology IRVE-3, and Space Power Systems' 3D Virtual Fuel Cell. Program Director Steve Gaddis and Program Executive Tibor Balint both gave presentations at the event and participated in a town hall forum and one-on-one meetings.

Anthony Calomino of the HIAD project describes inflatable technology to Tech Days attendees.

PE Tibor Balint gives an overview of the Game Changing Development Program at NASA Technology Days.

Carolyn Mercer explains the new 3D Fuel Cell exhibit to Steve Gaddis.

Game On!

http://gameon.nasa.gov

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