



May 15, 2017

Aerojet Rocketdyne Increases Thrust Level of 3-D Printed Bantam Rocket Engine by 500 Percent

Ideal Engine to Power Small Launch Vehicles and Upper Stages

HUNTSVILLE, Ala., May 15, 2017 (GLOBE NEWSWIRE) -- Aerojet Rocketdyne, a subsidiary of Aerojet Rocketdyne Holdings, Inc. (NYSE:AJRD), recently completed a series of hot-fire tests on a 30,000 lbf thrust-class Bantam liquid-fueled rocket engine built with additive manufacturing, also known as 3-D printing. This is a 500 percent increase in the thrust level from the [Baby Bantam engine](#) the company 3-D printed and tested in June 2014.

A photo accompanying this announcement is available at <http://www.globenewswire.com/NewsRoom/AttachmentNg/460503e0-e48f-4256-bd36-fd31de31dd84>

At the 30,000 lbf thrust level, this engine is ideal for the rapidly growing small launch vehicle and low-cost upper-stage markets. This latest milestone paves the way for Aerojet Rocketdyne to develop a family of low-cost, highly reliable rocket engines for booster, upper-stage and in-space propulsion solutions.

Under this activity funded by the Defense Advanced Research Projects Agency (DARPA), Aerojet Rocketdyne successfully completed a series of 17 tests of a LOX/kerosene, regeneratively cooled, liquid rocket thrust chamber assembly demonstrating the performance, durability and reusability of the design. These tests explored a range of engine operating parameters, conditions and run durations validating the design and applicability of the additive manufacturing technology and its benefits. Rigorous development is critical in fielding successful rocket engines and is a key contributor to Aerojet Rocketdyne's unmatched mission success record.

"Our Bantam engine evolved from proven kerosene engine development experience and offers the user high performance at a very low cost with the reliability that Aerojet Rocketdyne has been known to provide for decades," said Dr. Jay Littles, director of Advanced Launch Propulsion Programs at Aerojet Rocketdyne.

"Successful completion of this test series provides empirical validation of the performance, reusability and operability of the engine system and Aerojet Rocketdyne's capabilities in the application of additive manufacturing to liquid rocket engines."

The 30,000 lbf thrust-class engine, which would normally be comprised of over 100 parts, is built from only three additively manufactured major components: the injector assembly; the combustion chamber; and a throat and nozzle section. These three major components are welded together to form a single thrust chamber assembly.

"The demonstration of a regeneratively cooled, high-chamber-pressure engine made completely with 3-D printing is another key milestone in Aerojet Rocketdyne's path to reducing the cost of rocket propulsion systems," added Littles. "Printing the part is not the hard part, it is printing parts that can provide the performance and reliability that our customers depend on that is the key."

The Bantam engine was designed, fabricated and tested in just seven months at a fraction of the cost of producing the engine using traditional fabrication methods. Its recurring price would also be a fraction of the cost of today's products.

"The new generation of product aims to help change the economics of space access that is critical to our warfighter, civil and commercial customers," said Littles.

 3-D Printed Bantam Rocket Engine Undergoes Testing

Aerojet Rocketdyne's 30,000 lbf thrust class 3D-printed Bantam engine undergoes testing at the NASA Marshall Space Flight Center T-116 test facility

"The results of this test program confirm that we are on the right path to take advantage of the advancements we've made in 3-D printing technology as a key part of our strategy to deliver more affordable products to our customers while we maintain the reliability they've come to expect," said Aerojet Rocketdyne CEO and President Eileen Drake. "This successful series is another positive step in the validation of our technical approach and provides the foundation for future engine designs that take advantage of 3-D printing technology to enable us to reduce production lead times and make our products more cost-competitive."

Aerojet Rocketdyne is an innovative company delivering solutions that create value for its customers in the aerospace and defense markets. The company is a world-recognized aerospace and defense leader that provides propulsion and energetics to the space, missile defense and strategic systems, tactical systems and armaments areas, in support of domestic and international markets. Additional information about Aerojet Rocketdyne can be obtained by visiting our websites at www.Rocket.com and www.AerojetRocketdyne.com.

Contact: Glenn Mahone, Aerojet Rocketdyne, 202-302-9941

Glenn.Mahone@Rocket.com

Mary Engola, Aerojet Rocketdyne, 571-289-1371

Mary.Engola@Rocket.com

 Primary Logo

Source: Aerojet Rocketdyne, Inc.

News Provided by Acquire Media