Boeing Tests Critical Components for Advanced Rocket Engine

Boeing (NYSE:BA) has successfully tested a state-of-the-art liquid oxygen turbopump, marking a significant step forward in the development of next-generation rocket engine technology.

A team comprised of Boeing Rocketdyne Propulsion & Power, U.S. Air Force, and NASA personnel conducted the hot-fire testing at NASA's John C. Stennis Space Center, Miss. Boeing Rocketdyne designs, develops and manufactures rocket propulsion and space power systems including the Space Shuttle Main Engine and the RS-68 and RS-27A engines for the Boeing Delta family of launch vehicles.

The test, one of nine planned, followed a related series of hot-fire tests in which a Boeing Rocketdyne-built pre-burner that provides oxygen-rich gasses to the oxidizer turbopump turbine drive went "six for six" in the series. The Rocketdyne pre-burner was subsequently attached to the new oxidizer turbopump for testing. Both test series were conducted for the Air Force Research Laboratory's Integrated Powerhead Demonstration (IPD).

Bob Brengle, IPD program manager for Boeing Rocketdyne, said "We've combined proven technologies with exciting new innovations in the component including hydrostatic bearings that are virtually frictionless. In addition, a number of the internal parts use a new material that will help provide superior performance. We anticipate excellent performance, even in the oxygen-rich environment where it will do its work."

Upon completion of the hot-fire test series, the oxidizer turbopump will become part of the IPD engine system and help to provide advancement of key technologies that could find application in future Air Force rocket applications or NASA's Next Generation Launch Technology program.

"For its part, the pre-burner that we tested is the first large-scale, oxidizer-rich type to be developed and hot-fire tested in the U.S.," added Brengle. "Smaller ones have been tested at Boeing facilities, but this series of tests is a first of this magnitude. The goal of the test series was to characterize the pre-burner's behavior prior to its connection to the turbopump."

Jeff Thornburg, Air Force Research Laboratory's IPD project manager concurred. "The IPD program supports the Department of Defense's Integrated High Performance Rocket Propulsion Technology (IHPRPT) program, whose goal is to satisfy our Phase One milestones for doubling the capability of boost engines for access to space," said Thornburg. "IPD has also demonstrated a very successful partnership between the Air Force Research Laboratory, Boeing, and NASA's Stennis Space Center and Marshall Space Flight Center."

The IHPRPT program is a coordinated effort between the Department of Defense, NASA and industry to develop revolutionary and innovative technologies by the year 2010 that will generate significant enhancements of rocket propulsion capabilities over current state-of-the-art technologies.

A unit of The Boeing Company, Integrated Defense Systems is one the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a $25 billion business. It provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader launch services.

###

For further information:
John Mitchell
Boeing Rocketdyne
(818) 586-4564
john.k.mitchell@boeing.com
Madonna Walsh
Boeing IDS News Bureau
(314) 234-1362
madonna.a.walsh@boeing.com