Rocketdyne RS-68 Engine Certified for Boeing Delta IV

The certification of the Rocketdyne RS-68 engine that will power Boeing's [NYSE: BA] new Delta IV launch vehicle brings to a close a remarkable development path for the first large liquid-fueled engine in the United States in nearly three decades.

"What we have accomplished with the RS-68 is nothing less than the emergence of a new generation of American rocket engine designers and builders," said Byron Wood, vice president and general manager of the Rocketdyne Propulsion & Power business of The Boeing Company. "The men and women who took this engine from a blank sheet of paper to this certification and the beginning of full production of the RS-68 in record time have made their own mark in space history. A torch has been passed from the team that powered us to the moon and built the Space Shuttle Main Engine (SSME) to a new generation using new tools and techniques."

The RS-68 is a liquid hydrogen-liquid oxygen booster engine that generates 650,000 lbs. of thrust. It was developed in less than five years in a program that was required to consider cost and cycle time variables in the design and manufacture of the engine. This RS-68 milestone is also the culmination of a development and certification test program that saw 183 hot-fire tests for a total of 18,645 seconds of test time. All verification objectives were achieved and the robustness of the engine was fully demonstrated.

"We are very pleased with the exceptional job the entire RS-68 Engine Team has done and the great industrial partnership that has been established between Boeing, Rocketdyne, and the U.S. Air Force," said Col Bob Saxer, the U.S. Air Force EELV System Program Director. "The certification of the RS-68 engines marks the completion of a major Delta IV program milestone and places us squarely on course for our first EELV Delta IV launch in 2002."

"The Boeing team at Rocketdyne has set a new standard in rocket engine design for the world," Wood said. "In the development of the RS-68, they achieved technical goals and met cost and cycle-time demands that have never been accomplished before. They have raised the bar in a way that is fitting for the successors of the generation of engineers that developed the F-1 and J-2 engines for Apollo and the SSME."

This has been a year of achievement for the Boeing RS-68 team. In addition to the completion of certification, Boeing completed a series of hot-fire tests of the RS-68 integrated with the Delta IV Common Booster Core. Five tests for a total of 555 seconds were completed at NASA's John C. Stennis Space Center in Mississippi. Boeing also completed acceptance testing and delivered the first flight RS-68 for Delta IV. That engine is scheduled to power the first launch of Delta IV from Cape Canaveral Air Force Station during 2002.

"The program did face a number of technical challenges on the road to development and certification, but very few compared to previous major rocket engine development programs," said Rick Baily, Rocketdyne chief engineer and former program manager for the RS-68 engine. "But each challenge was met and resolved and the solutions were tested to the satisfaction of the Air Force and exacting expectations of our team."

Boeing Rocketdyne is a global leader in liquid-fueled propulsion. In addition to developing and manufacturing the SSME, the Boeing team at Rocketdyne also produces the RS-27A engine for Delta II and Delta III. The Canoga Park, Calif.-based business of Boeing has provided propulsion to virtually every major U.S. space program since the 1950s.

The Boeing Company is the world's leading aerospace company, with its heritage mirroring the history of flight. It is the largest manufacturer of satellites, commercial jetliners, and military aircraft. The company is also a global market leader in missile defense, human space flight, and launch services. Chicago-based Boeing has an extensive global reach with customers in 145 countries.

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For further information:
Dan Beck
(818) 586-4572
daniel.c.beck@boeing.com
Anne Eisele
(562) 797-1022
anne.f.eisele@boeing.com