Boeing Rocketdyne Awarded Air Force Hydrocarbon Study Contract

The Boeing Company [NYSE:BA] will make a significant contribution to improving and enhancing U.S. rocket propulsion technology under a one-year, $2.6-million Air Force contract awarded to Boeing's Rocketdyne Propulsion & Power unit to pursue hydrocarbon booster studies under the Integrated High Payoff Rocket Propulsion Technology (IHPRPT) program.

The Air Force Research Laboratory's Propulsion Directorate has been leading the IHPRPT mission since 1993, with NASA and other government agencies as well as industry representatives actively participating. Boeing Rocketdyne is already supporting IHPRPT in other categories, such as cryogenic propulsion through the Integrated Powerhead Demonstration (IPD) effort. Rocketdyne is also developing a number of other propulsion initiatives, including a reusable hydrocarbon engine -- the RS-84 -- under NASA's Space Launch Initiative (SLI).

"The Air Force envisions a reusable Space Operations Vehicle, or SOV, that is driven by operability requirements," explained Brian Anderson, hydrocarbon boost program manager for Boeing. "The Air Force wants a highly operable vehicle that can be ready to launch on demand. While NASA's Space Shuttle can take up to 180 days to turnaround between flights and is schedule-driven, the Air Force wants a quicker turnaround."

The primary focus of this hydrocarbon study is to address IHPRPT hydrocarbon phase II goals. IHPRPT calls for time-phased, integrated technology demonstrations, with each phase successively more challenging. The five IHPRPT hydrocarbon boost phase II goals represent a quantum leap over the currently base lined technology. For example, the Air Force is looking for substantial improvement in specific impulse (Isp), the mathematical measure of a rocket's fuel efficiency, while also requiring substantial improvements in reliability and cost.

Hydrocarbon-fueled vehicles offer some benefits over other propulsion systems. The vehicle is heavier when fueled with kerosene, but because of the propellant's nature, it is lighter when empty -- a benefit in reduced vehicle weight and cost. Also, kerosene costs less to produce and use.

As the propulsion system is defined, vehicle architecture will be determined. The IHPRPT goals will be balanced against the Air Force's requirements for the Space Operations Vehicle concept. Following completion of this one-year study contract, Rocketdyne hopes to receive a follow-on contract to design and build a demonstration engine.

Rocketdyne Propulsion & Power is a global leader in the design, development and manufacture of rocket propulsion and space power systems. Rocketdyne has invested in oxidizer-compatible materials and kerosene-staged combustion engine technologies since 1995, providing a basis for developing highly operable staged-combustion hydrocarbon rocket engines that are reusable.

Boeing Space and Communications (S&C), headquartered in Seal Beach, Calif., is the world's largest space and communications company. A unit of The Boeing Company, S&C provides integrated solutions in launch services, human space flight and exploration, missile defense, and information and communications.
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