Boeing 'Phantom Eye' Hydrogen Powered Vehicle Takes Shape

ST. LOUIS, March 8, 2010 -- The Boeing Company [NYSE: BA] has begun to build Phantom Eye -- its first unmanned, liquid-hydrogen powered, high altitude long endurance (HALE) demonstrator aircraft.

“The essence of Phantom Eye is its propulsion system,” said Darryl Davis, Boeing Phantom Works president. “After five years of technology development, we are now deploying rapid prototyping to bring together an unmanned aerial vehicle [UAV] with a breakthrough liquid-hydrogen propulsion system that will be ready to fly early next year.”

Phantom Eye’s entire propulsion system -- including the engine, turbo chargers and engine control system -- successfully completed an 80-hour test in an altitude chamber on March 1, clearing the way for the propulsion system and UAV to be assembled.

The twin-engine Phantom Eye demonstrator will have a 150-foot wingspan and be capable of flying for more than four days at altitudes up to 65,000 feet while carrying a payload of up to 450 pounds. Phantom Eye is designed to maintain a persistent presence in the stratosphere over a specific area, while performing missions that could include intelligence, reconnaissance, surveillance and communication. Boeing also is developing a larger HALE that will stay aloft for more than 10 days and carry payloads of more than 2,000 pounds, and building “Phantom Ray,” a fighter-sized UAV that will be a flying test bed for advanced technologies.

“We believe Phantom Eye and Phantom Ray represent two areas where the unmanned aerial vehicle market is heading, and rapid prototyping is the key to getting us there,” said Dave Koopersmith, Advanced Boeing Military Aircraft vice president. “These innovative demonstrators reduce technology risks and set the stage for meeting both military and commercial customers’ future needs.”

Phantom Eye evolved from Boeing’s earlier success with the piston-powered Condor that set several records for altitude and endurance in the late 1980s. Boeing, as the Phantom Eye system designer, is working closely with Ball Aerospace, Aurora Flight Sciences, Ford Motor Co. and MAHLE Powertrain to develop the demonstrator.

Phantom Ray evolved from the X-45C program. It is scheduled to make its first flight in December.

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