Boeing Awarded Contract to Test Advanced Helicopter Rotor System

The Boeing Company [NYSE: BA] has been awarded a $3 million Defense Advanced Research Projects Agency contract to test an innovative main rotor system that promises quieter operation, reduced vibration and potentially improved performance for military helicopters like the AH-64D Apache Longbow.

Boeing will test the "Smart Rotor" over the next year at NASA Ames Research Center's 40 by 80-foot wind tunnel in California to study the system's forward flight characteristics and gather data to validate state-of-the-art aero-acoustic analysis codes. These codes are used to predict a variety of data that help identify the cause of rotor noise, allowing engineers to study and compare alternate designs.

Boeing previously validated the robustness and authority of the modified commercial MD 900® rotor system on its whirl tower in Mesa, Ariz.

"If the technology shows the predicted benefits of this advanced system, we may consider adding it to the Apache helicopter to significantly enhance its performance," said Friedrich Straub, Smart Rotor project engineer.

The system, which incorporates several new technologies that make it more capable and quieter than existing rotors, includes trailing edge blade flaps controlled by on-blade piezo electric actuators and control electronics that optimize flap motions. The system, Straub added, ultimately could be applied to other military and civil aircraft as well.

The MD 900 rotor system, designed by Boeing engineers before the company sold the MD 900 production line to MD Helicopters, Inc., in 1999, provided an ideal test platform to study enhancements to the system.

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For further information:
Hal Klopper
Boeing Media Relations
(480) 891-5519
hal.g.klopper@boeing.com
Carole Thompson
Boeing Media Relations
(480) 891-2119
carole.j.thompson-sutton@boeing.com