

Boeing Wins \$15.9 Million Cooperative Agreement to Build New Apache Fuselage

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A four-year, \$15.9 million cooperative agreement to design, manufacture and flight-test a new center fuselage section fabricated from advanced composite materials for Apache helicopters has been awarded to The Boeing Company.

The award was granted by the U.S. Army Aviation Applied Technology Directorate (Aviation and Missile Command) at Fort Eustis, Va., under the Rotary Wing Structures Technology Demonstration program. The program funds cost and weight reduction initiatives for the Army's existing and future helicopter fleet.

The award is a significant milestone for the company's Phantom Works and for the Apache development program. It projects the company to the forefront of the aerospace industry in the use of leading-edge technology to design and manufacture major aircraft structures using advanced composite materials. The new Apache fuselage section, essentially from the aft cockpit of the aircraft to just behind the engines, will be lighter, stronger and easier to manufacture than the existing all-metal structure.

"This is a major success for the Phantom Works and for the Apache program," said Andy Logan, vice president of advanced rotorcraft systems of the Phantom Works. "This is the first advanced composite structure for us, and it is a significant step in the future of Apache airframe development."

Successful completion of the agreement also brings the potential of lengthening the service life of Apache helicopters. The company currently is remanufacturing AH-64A Apaches into the advanced AH-64D Apache Longbow configuration. By incorporating the composite fuselage section and other advancements also under consideration, the Apache helicopter and its derivatives could remain in military service well into the 21st century.

Among the advanced techniques used will be the Boeing-developed Design, Manufacturing and Producibility Simulation (DMAPS) process. DMAPS is a three-dimensional computer-modeling tool that allows engineers and technicians to design "virtual" aircraft with a far greater degree of efficiency and accuracy than previous techniques.

Using the DMAPS process, teams of experts from design, manufacturing and user groups will make simultaneous and coordinated contributions to the aircraft's development. This method ensures that all parts will fit precisely before any structures are formed. It also ensures that field technicians will have ample room inside the craft to perform routine maintenance tasks.

Additionally, the company will use Boeing-developed techniques for the application of advanced resins in composite materials that replace traditional metal fasteners with a stitching process for greater structural integrity and lower manufacturing cost.

Phantom Works engineers from Mesa will lead the team, and others from Long Beach, Calif., St. Louis and Philadelphia will contribute technology and expertise to the project. Phantom Works is an advanced research and development unit of Boeing that pursues breakthrough improvements in the affordability, quality and performance of aerospace systems.

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