# RAH-66 Comanche With New Empennage Completes First Flight

The Comanche team, on Dec. 18 capped off a year of successful flight testing with the first flight of a new empennage on RAH-66 Comanche Prototype No. 1.

In addition to the new empennage, Prototype No. 1 flew its "full up" configuration, with lowered exhaust doors, alternate main rotor pylon, main rotor hub fairing and the Comanche fire control radar aerodummy.

Comanche test pilots Rus Stiles and Reggie Murrell flew the Comanche with the new empennage for 1.4 hours at speeds up to 165 knots true air speed, performing 45-degree banks and various controllability checks. After the flight, test engineers began evaluating data to measure the new tail's performance. Further flights will provide additional data.

The new Comanche empennage design consists of vertical and horizontal stabilizers and new vertical endplates on the horizontal structure. The new tail structure, which was mounted atop the RAH-66 FANTAIL shrouded tail rotor earlier this month, is a reconfigurable unit that permits adjustments of tail components to validate and optimize a final tail design for production.

The new tail's development involved utilization of advanced digital "virtual reality" engineering design software that permitted rapid fabrication and assembly of the composite and metal structure. From preliminary design to flight test, the entire development cycle encompasses just 10 months.

Charles Allen, Boeing Sikorsky Joint Program Office director, said, "The new empennage's first flight was a major success in every respect. We expect to refine design changes in subsequent flights and validate a production configuration for the new Comanche tail on schedule. This design program is a key pilot program that has clearly demonstrated the Comanche team's ability to handle complex engineering and fabrication tasks on cost, on schedule and on specification."

The RAH-66 Comanche, the U.S. Army's 21st century combat helicopter, is being developed by U.S. Army Aviation and a team of leading aerospace companies headed by Boeing and Sikorsky Aircraft Corporation, a subsidiary of United Technologies Corp.

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