

## **F-22 Raptor Achieves First Supersonic Flight**

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Another major milestone in the F-22 flight test program was achieved when Lockheed Martin test pilot Jon Beesley flew the first F-22, built by U.S. Air Force contractors Lockheed Martin, Boeing and Pratt & Whitney, faster than the speed of sound for the first time.

Powered by two Pratt & Whitney F-119-PW-100 engines, Beesley broke the sound barrier as he pushed the F-22 to a speed of 1.1 mach during a nearly 3 hour flight over Edwards Air Force Base, Calif.

The flight moved the Raptor one step closer to demonstrating its revolutionary ability to supercruise -- to fly at supersonic speeds for extended periods without the use of afterburners. An afterburner is an auxiliary power source that provides extra thrust by injecting fuel into the engines' hot exhaust gasses and burning it.

While the F-22 reached a speed of only 1.1 mach during the flight, it is capable of supercruising at much higher supersonic speeds for much longer periods of time. To date, high performance fighters have had to rely on afterburners to sustain supersonic speeds; however, the F-22's advanced engines are designed to allow supersonic flight without afterburners, which avoids consuming large amounts of fuel.

"The Lockheed Martin/Boeing F-22 and Pratt & Whitney F119 engine are designed to take us into a new frontier -- sustained supersonic flight," explained Brig. Gen. Michael C. Mushala, F-22 System Program director. "The dream has always been to sustain supersonic flight so we could take full advantage of the supersonic frontier in an air superiority fighter."

The F-22 Combined Test Facility, a joint Air Force/contractor team located at Edwards Air Force Base, conducts the F-22 flight test program. The second F-22 off the assembly line in Georgia joined its sister ship, Raptor 01, at Edwards in August.

"The F-22's supersonic milestone only adds to our confidence in this airplane," said Bob Barnes, Boeing F-22 program manager and vice president. "And, as we continue to achieve these important milestones in the air, Boeing and our suppliers are working very hard to control costs on the ground. Together we are producing a revolutionary aircraft that will help U.S. forces continue air dominance into the next century."

The F-22 is widely regarded as the most advanced fighter in the world, combining a revolutionary leap in technology and capability with reduced support requirements and maintenance costs. It will replace the F-15 as America's front-line air superiority fighter, with deliveries to operational units beginning in 2002.

The F-22's combination of stealth, integrated avionics, maneuverability and supercruise will give Raptor pilots a first-look, first-shot, first-kill capability against the aircraft of any potential enemy. The F-22 is designed to provide not just air superiority, but air dominance, winning quickly and decisively with few U.S. casualties. The F-22 also has an inherent air-to-ground capability.

Boeing supplies the F-22's wings, aft fuselage, radar, mission software, avionics integration and testing, as well as training and life-support systems.

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