## Lockheed Martin Engineers Awarded For Innovative JSF Design

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The American Institute of Aeronautics and Astronautics has honored eight Lockheed Martin Aeronautics Co. engineers for their contributions to the design of the stealthy, next-generation F-35 Joint Strike Fighter.

Paul Bevilaqua, Dave Butcher, George Law, Gerry Murff, Paul Park, Brian Quayle, Kevin Renshaw and Rick Rezabek received AIAA's Aircraft Design Award for 2002. The award is presented to a design engineer or team for "the conception, definition or development of an original concept leading to a significant advancement in aircraft design or design technology."

Lockheed Martin Aeronautics Co., a business area of Lockheed Martin Corp. , is the prime contractor to develop the F-35 for the U. S. Air Force, Navy and Marine Corps and allied nations.

The citation, presented to the team on Oct. 1 at an AIAA forum in Los Angeles, recognizes the engineers "for an innovative tri-service solution next-generation strike aircraft demonstrating commonality, carrier approach and STOVL (short takeoff/vertical landing) flight all in a fourthgeneration low-observable (stealth) airframe."

During flight-testing in 2000 and 2001, three variants of the JSF X-35 demonstrator aircraft established numerous records and proved that the Lockheed Martin JSF design would meet the performance requirements of the U.S. Air Force, Navy and Marine Corps, and the U.K. Royal Navy and Royal Air Force. Flight-test highlights included history's first-ever short takeoff, level supersonic dash and vertical landing in a single flight. The feat was made possible in large part by a revolutionary propulsion system incorporating a counter-rotating lift fan driven by the engine via a drive shaft and clutch.

"This group helped the JSF do what no other aircraft has been able to accomplish truly successfully -meet the fighter performance needs of the Air Force, the Navy and the Marine Corps using a single
design," said Tom Burbage, Lockheed Martin executive vice president and F-35 JSF program general
manager. "It's impossible to overstate how hard this team worked to achieve this very difficult goal.
The honor could not have gone to a more deserving group."

Butcher, Murff, Park, Quayle and Renshaw were central to the basic overall integrated design of the JSF, while Law and Rezabek spearheaded the construction and flight testing of the JSF X-35 demonstrator aircraft. Bevilaqua played a leading role in creating the JSF concept by inventing the shaft-driven lift fan and showing how it could be used to design a family of STOVL and conventional variants of the same aircraft. The fan works automatically with a vectoring rear engine nozzle to produce unprecedented lifting force during short takeoffs, vertical landings and hovers.

Lockheed Martin Aeronautics Co., headquartered in Fort Worth, Texas, is a leader in the design, development, systems integration, production and support of advanced military aircraft and related technologies. Its customers include the military services of the United States and allied countries throughout the world. Products include the F-16, F/A-22, F-35 JSF, F-117, T-50, C-5, C-130, C-130J, P-3, S-3 and U-2.

Lockheed Martin Aeronautics Co. is a unit of Lockheed Martin Corp., headquartered in Bethesda, Md. Lockheed Martin is a global enterprise principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. Employing about 125,000 people worldwide, Lockheed Martin had 2001 sales of \$24 billion.

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