

New Horizontal Stabilator Design And Manufacturing Process To Save F-22 Raptor Program \$1 Million Per Aircraft

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Lockheed Martin Aeronautics Co., a business area of Lockheed Martin Corp. , has developed a new horizontal stabilator design for the F-22 Raptor that will save the program \$1 million per aircraft shipset of two. Stabilators are the large, left- and right-hand wing-like aerodynamic control structures horizontally mounted to the F-22's tail. They work either together or independently to control the Raptor's up-and-down (pitch), spin, roll, and yaw movements. Unlike stabilizers, which have both a fixed and a moving surface, the entire horizontal stabilator moves as a single unit to reposition the aircraft in the air.

"The development and implementation of the stabilator's new design and manufacturing process is part of the F-22 program's ongoing product improvement initiative," said Bob Rearden, Lockheed Martin Aeronautics Co. vice president and F-22 program general manager. "The savings incurred through this initiative will help contain the F-22's cost, and ensure that we can build all the Raptor's the U.S. Air Force needs at a price our country can afford." Currently, the U.S. Air Force has an F-22 acquisition goal of 339 aircraft.

Lockheed Martin's new stabilator design involves mechanically fastening composite materials around a central shaft rather than bonding the materials under high pressure and heat in an autoclave. The new design also incorporates removable edges, which will make the stabilators easier to maintain or repair in the field. The manufacturing process associated with the new design will shave approximately 30 pounds of weight from each stabilator and reduce its build time by approximately 25 percent.

Lockheed Martin Aeronautics Co. has competitively selected Vought Aircraft Industries of Dallas, Texas, to build the new stabilator. Under the terms of this initial \$40 million contract, Vought will begin manufacturing the new stabilators early next year and produce 85 shipsets through 2007. Raptor 4040, the fortieth aircraft off the assembly line, will be the last F-22 equipped with the original stabilators. The first F-22 equipped with Vought- built stabilators will be Raptor 4041, the first aircraft to be built in production Lot 3. This aircraft, which will be the first fully combat-ready F-22, is slated for delivery to Langley Air Force Base, Va.

Approximately 20 workers currently build the stabilators at Lockheed Martin's Marietta, Ga., facility. After this work transfers to Vought next year, the Marietta employees will be given the opportunity to retrain as aircraft coaters or finishers, a job area where Lockheed Martin is currently understaffed and actively recruiting.

The F-22 Raptor, the world's first stealthy air dominance fighter, is built by Lockheed Martin Aeronautics in partnership with Boeing. The Raptor is powered by Pratt and Whitney engines and is made from parts and subsystems provided by approximately 1,200 subcontractors and suppliers in 46 states. Primary production activities take place at LM Aero facilities in Marietta, Ga., and Fort Worth, Texas, as well as at Boeing's plant in Seattle, Wash. Final assembly and initial flight testing of the Raptor occurs at the Marietta factory, headquarters for the F-22 program's contractor team.

The Raptor will replace the venerable F-15 Eagle as America's premier front-line fighter jet starting in 2005. The F-22's balanced design of stealth, supercruise speed, and super-agility, along with its advanced integrated avionics and overall user-friendliness, will allow the F-22 to help the Pentagon shorten future wars and save American and allied lives.

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-22, F-35 JSF, F-117, T-50, C-5, C-27J, C-130, C-130J, P-3, S-3, and U-2.

Headquartered in Bethesda, Md., Lockheed Martin Corp. 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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