Full-Scale F-35 Pole Model Begins Mission Systems Testing

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Multi-phase Mission Systems aperture testing is under way on a full-scale model of the Lockheed Martin F-35 Joint Strike Fighter at the Air Force Research Laboratories' Newport, N.Y., test facility.

The model, manufactured by Advanced Technologies, Inc., of Newport News, Va., is being used to measure installed antenna pattern, gain and phase measurements for the F-35's Communication, Navigation & Identification (CNI) and Electronic Warfare (EW) systems.

The aperture test program, a major Mission Systems development milestone, began on Oct. 1 with testing of the CNI system's upper L-Band antennas from Ball Aerospace. Early test results show the pre-production apertures meet or exceed pattern and gain requirements while installed in the F-35 model. Additional tests are evaluating the performance of the CNI system's Satellite Communications, Global Positioning System and UHF/VHF communications apertures. EW aperture testing will begin in 2005.

"The beginning of aperture testing in this world-class test facility is a significant achievement in the F-35 JSF program," said Bob Elrod, Lockheed Martin executive vice president and F-35 JSF program general manager. "This is a key milestone on the way to our first flight date in 2006."

Future test phases will validate CNI and EW production-antenna performance in a "clean" aircraft configuration (no external stores, landing gear up, doors closed). Later tests will also evaluate the impacts of various external weapons configurations on aperture performance. The installed-antenna data will be used for design validation, performance verification, risk reduction, improved system performance modeling and simulation, and reduction of the number of F-35 flight-test points required to verify avionics performance. The F-35 model will also be used to measure antenna-to-antenna isolation measurements to support F-35 radio frequency (RF) compatibility verification. The model weighs 8,500 pounds and was produced over a 44-week period. With interchangeable wing and tail components, it has the capability to simulate all three F-35 variants.

The F-35 is a next-generation, supersonic, multi-role stealth aircraft designed to replace the AV-8B Harrier, A-10, F-16, F/A-18 Hornet and the United Kingdom's Harrier GR.7 and Sea Harrier. Three F-35 variants -- a conventional takeoff and landing (CTOL), a short-takeoff/vertical-landing (STOVL) and a carrier variant (CV) -- each derived from a common design, will ensure that the F-35 meets the performance needs of the U.S. Air Force, Marine Corps, Navy, the U.K. Royal Air Force and Royal Navy, and allied defense forces worldwide, while staying within strict affordability targets.

Lockheed Martin is developing the F-35 in collaboration with its principal partners, Northrop Grumman and BAE Systems.

Lockheed Martin Aeronautics Co., a business area of Lockheed Martin, is a leader in the design, research and 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, C-5, C-130, C-130J, P-3, S-3 and U-2. The company produces major components for the F-2 fighter, and is a co-developer of the C-27J tactical transport and T-50 advanced jet trainer.

Headquartered in Bethesda, Md., Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The corporation reported 2003 sales of $31.8 billion.

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An F-35 electronic media kit is available at: http://www.lockheedmartin.com/wms/findPage.do?dsp=fec&ci=15965&rsbci=13151&fti

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