Flights Test Electro-Optical Sensors For Lockheed Martin F-35

The Lockheed Martin F-35 Joint Strike Fighter team successfully launched the first phase of the F-35 Electro-Optical Distributed Aperture System (EO DAS) early risk-reduction flight-test program, with recently conducted flights near Patuxent River Naval Air Warfare Center in Maryland.

The next-generation EO DAS, developed by a Northrop Grumman Electronic Systems-led team, provides the F-35 with key capabilities that include missile warning; navigation forward-looking infrared (FLIR), which provides imagery to the pilot's helmet-mounted display day or night; and infrared search and track (IRST) capability. DAS sensors also will be flown in a centerline pod on an F-16 to record data in a dynamic fighter environment. On production F-35s, the DAS sensor array will be flush-mounted at various points along the fuselage.

"The DAS system holds the promise of greatly enhancing the combat effectiveness of the F-35, and I am excited to see it beginning to enter flight test," said F-35 Chief Test Pilot Jon Beesley. "Timely detection of threats such as air-to-air missiles by DAS sensors plays a key role in the survivability of the F-35. High-resolution images from the multiple DAS sensors will provide a 360-degree spherical view around and through the aircraft, dramatically increasing the pilot's situational awareness for combat and for STOVL operations."

The objective of the tests is to reduce development risk of the F-35's DAS program by recording data from multiple DAS sensors in flight conditions. The recorded data is then replayed on the ground to evaluate imaging and target-detection algorithms in various electro-optical environmental conditions.

The flight-test program uses a Northrop Grumman Electronic Systems BAC1-11 flying test bed and captures data using prototype versions of the F-35 DAS sensors. Tests include capturing infrared images of cooperative and non-cooperative airborne and ground-based targets in EO environments.

"The EO DAS system is one of several transformational capabilities that are enabling the development of new combat tactics for the F-35," said Tom Burbage, Lockheed Martin executive vice president and F-35 JSF program general manager. "We're currently collecting data from two of the EO DAS sensors together on the BAC 1-11 flights, which provide real flight information to use in developing and optimizing the algorithms for the multifunction EO DAS system. A third sensor will be added later in the flight-test program."

The collaborative test program is an example of Lockheed Martin partnering to help customers meet their defining moments.

The F-35 is a stealthy, supersonic multirole fighter designed to replace a wide range of aging fighter and strike aircraft. Three variants derived from a common design will ensure the F-35 meets the performance needs of the U.S. Air Force, Marine Corps, Navy and allied defense forces worldwide, while staying within strict affordability targets.

Lockheed Martin is developing the F-35 in conjunction with its principal industrial partners, Northrop Grumman and BAE SYSTEMS. Companies worldwide are participating in the F-35's development. Among aircraft the F-35 will replace are the AV-8B Harrier, A-10, F-16, F/A-18 and United Kingdom's Harrier GR.7 and Sea Harrier.

BACKGROUND INFORMATION

Lockheed Martin Aeronautics Co., a business area of Lockheed Martin, 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, 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 Corp. 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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