

Electrical Power Flows Into First Lockheed Martin F-35

The first F-35 Joint Strike Fighter came alive with electrical power today, as technicians at Lockheed Martin Fort Worth initiated "power-on" -- the incremental process of testing the aircraft's circuits, electronic components and wiring. The event was completed on schedule.

"Power-on is a significant milestone in the manufacturing process of any new aircraft. The successful, on-time achievement of this event further demonstrates that the F-35 Joint Strike Fighter program is progressing as planned, and confirms the value and effectiveness of its innovative design and build process," said Ralph D. Heath, president of Lockheed Martin Aeronautics Co. "Today, we begin making sure that air 'power' is always 'on' when future F-35 pilots take to the skies to defend the freedom of the United States and allied nations," Heath said.

The F-35 is a supersonic, multi-role stealth fighter designed to replace aging AV-8B Harriers, A-10s, F-16s, F/A-18 Hornets and United Kingdom Harrier GR.7s and Sea Harriers.

The aircraft's electrical power system (EPS) consists of two subsystems -- the electrical power generating system (EPGS) and the electrical power management system -- with overall control of the system supplied by redundant software running in the F-35's vehicle-management computers. Software developed by Lockheed Martin provides overall control of the EPS.

"The ability to put electrical power on the jet indicates that the majority of the structure is assembled, the utility systems have been installed and it's time to move into operational checkout of the systems," said Dan Crowley, Lockheed Martin F-35 JSF program manager. "Because the F-35 is such a highly integrated aircraft, many systems and functions must be in place to achieve this milestone. The team has developed and verified the procedures in our labs over the past several months, and they've met a schedule commitment set over 12 months ago."

The F-35 will be the most electronically sophisticated multi-role joint forces fighter aircraft ever built, with capabilities unavailable in current-generation coalition fighters.

Today's event is one more indication of the success of the F-35's digital 3-D solid design process, in which Lockheed Martin and its F-35 suppliers refer to the same computer model for design and production of F-35 systems and parts. The result is unprecedented accuracy and assembly speed. Hamilton Sundstrand of Rockford, Ill., provides the EPGS. The electrical power management system is provided by Cheltenham, England-based Smiths Aerospace, and batteries are designed and manufactured by Saft America, Inc., of Cockeysville, Md.

The first test aircraft, a conventional takeoff and landing (CTOL) F-35A designed principally for the U.S. Air Force, is scheduled to make its inaugural flight in the third quarter of 2006. Component-level assembly is under way for the short-takeoff/vertical landing (STOVL) F-35B, the variant that will serve the U.S. Marine Corps and the U.K. Royal Air Force and Royal Navy. The F-35B will be the second aircraft to enter flight testing.

Three versions of the F-35 are planned: a CTOL, a STOVL and a carrier variant (CV). Each is derived from a common design, and will ensure that the F-35 meets the performance needs of the U.S. Air Force, Marine Corps and Navy, the U.K. Royal Air Force and Royal Navy, and allied defense forces worldwide. Lockheed Martin is developing the F-35 with its principal industrial partners, Northrop Grumman and BAE Systems. Two separate, interchangeable F-35 engines are under development: one by Pratt & Whitney and the other by the General Electric Rolls-Royce Fighter Engine Team.

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 2004 sales of \$35.5 billion.

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