



FACT SHEET



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F-35 Lightning II Joint Strike Fighter: Hamilton Sundstrand Content

Program Background

In 2001 Lockheed Martin Co. selected Hamilton Sundstrand to supply multiple systems on the company's new F-35 Lightning II Joint Strike Fighter (JSF).

On Oct. 26, 2001, the United States Dept. of Defense awarded Lockheed Martin Co. a 10-year System Design and Development (SDD) contract to begin development of the single-seat, single engine JSF in three variants: the F-35A, a conventional-takeoff-and-landing (CTOL) variant for the U.S. Air Force; the F-35B, a short-takeoff/vertical landing (STOVL) version for the U.S. Marine Corps and the U.K. Royal Air Force and Royal Navy; and the F-35C, an aircraft-carrier version (CV) for the U.S. Navy.

Lockheed Martin Co. is the JSF's prime contractor, while Northrop Grumman and BAE Systems are principal partners in the project.

The JSF is an internationally-oriented program consisting of partnerships with a number of countries including the United States, United Kingdom, Italy, the Netherlands, Turkey, Canada, Australia, Denmark and Norway.

About the Aircraft

The JSF is the United States Dept. of Defense's focal point for defining affordable next generation strike aircraft weapon systems for the Navy, Air Force, Marines, and allies. The JSF brings cutting-edge technologies to the battlespace of the future. Its advanced airframe, autonomic logistics, avionics, propulsion systems, stealth and firepower will ensure the JSF is the most affordable, lethal, supportable and survivable aircraft ever to be used by warfighters across the globe.

The JSF is a fifth generation multi-role stealth fighter. The three JSF variants are derived from a common design and use the same sustainment infrastructure worldwide to replace at least 13 types of aircraft for 11 nations initially, making it the most cost-effective fighter program in history.

JSF final assembly will take place at Lockheed Martin Aeronautics Co. in Fort Worth, Texas, where they will also manufacture the forward fuselage and wings. Northrop Grumman Corp. in Palmdale and El Segundo, Calif., will manufacture the center-fuselage. The aft fuselage and tails will be manufactured by BAE Systems in Samlesbury, England.

The CTOL JSF's first flight occurred in December 2006. The STOVL first flight occurred in June 2008. The STOVL aircraft achieved its first vertical landing in March 2010.

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Hamilton Sundstrand's Rockford, Ill., facility performs critical power generation subsystem testing in its System Integration Lab (SIL). Subsystem testing evaluates engine starting, power generation development, and safety of flight and qualification compliance.



In 2007, the Pratt & Whitney and Hamilton Sundstrand F135 team won the UTC Horner Citation for its efforts in F135 engine design, development and flight certification.

Hamilton Sundstrand provides five systems for the JSF:

Engine Control Systems: on the Pratt & Whitney F135 engine

Electric Power Generation and Conversion system: The JSF's main engine starting is delivered on the ground and in air through the integration of power electronics and a generator. After engine start, the generator and associated power electronics are configured to provide main electrical power to the aircraft at a regulated current. The conversion system contains three power electronics line replaceable units converting electrical power to voltages for the avionics and pilot controls.

Fire Protection and Overheat Detection system: Kidde Aerospace & Defense provides three sub-systems on the F-35 Lightning II Joint Strike Fighter: the Engine Fire Detection, Overheat Detection and Dry Bay Suppression System. The engine fire detection system, which features ultra violet flame detectors, and the overheat detection system, which utilizes Fenwal CFD thermal sensors, are both monitored by the Kidde-supplied Fire and Bleed Leak Controller (FBLC). The Dry Bay fire suppression system is an aircraft survivability enhancement system that features ultra fast infrared optical detectors monitored by the F-35's remote interface unit, and high rate discharge suppressors.

Flight Actuation Control Electronics Module (CE Module): The CE Module provides digital control processing power and software control for the Electrohydrostatic Actuation System that controls the aircraft's flight control surfaces (flaps, rudders and flaperons). There are 12 CE Modules utilized on each aircraft. Each module is installed into Electronic Unit boxes, manufactured by Moog Inc., which provide the actuator's high power drive.

Gun System Control Unit (GSCU): The GSCU provides control functions for both gun firing and clearing, and regulates and distributes 270VDC to both the arm and safe solenoids. It interfaces with the gun sensors to provide safety interlock capability as well as control of the aircraft muzzle and purge doors.

About Hamilton Sundstrand

With 2010 sales of \$5.6 billion, Hamilton Sundstrand is headquartered in Windsor Locks, Conn. Among the world's largest suppliers of technologically advanced aerospace and industrial products, the company designs, manufactures and services aerospace systems and provides integrated system solutions for commercial, regional, corporate and military aircraft. It also is a major supplier for international space programs.

Hamilton Sundstrand is a subsidiary of United Technologies Corporation (NYSE: UTX). Based in Hartford, Conn., UTC is a diversified company that provides high-technology products and services to the aerospace and building industries.

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