Lockheed Martin F-35 Takes Shape, Readies For First Flight

The first Lockheed Martin F-35 Joint Strike Fighter completed assembly and was ceremoniously turned over to the flight line in Fort Worth, Texas, USA, on schedule Feb. 19. This represents the next stage of development and the very first completed aircraft. Ground tests will now begin in preparation for first flight later this year.

With design work in nearly every time zone around the world, the F-35 represents the largest international fighter development in history. "The international team developing the F-35 continues its success in keeping the program on schedule and meeting technical objectives," said Tom Burbage, Lockheed Martin executive vice president and manager of F-35 JSF program integration. "Our overriding goal is to deliver an aircraft system that brings a host of 5th Generation breakthrough capabilities to the many countries that will use the F-35. That goal is now within sight."

The United States, United Kingdom, Italy, the Netherlands, Turkey, Canada, Australia, Denmark and Norway are contributing to the F-35's development, and all are expected to sign a memorandum of understanding later this year that will define their plans for buying, owning, operating and maintaining the aircraft. Singapore and Israel are Security Cooperation Participants in the JSF program and are entitled to delivery priorities, certain program information and country-specific technical studies for the F-35.

The F-35 is a supersonic, multirole stealth fighter designed to replace a number of aging fighter and strike aircraft. The F-35 and the Lockheed Martin F-22 are the world's only 5th Generation fighters, combining stealth with supersonic performance, advanced sensor fusion, greatly expanded capacity for interoperability and dramatic reductions in operation and support costs.

Recent program progress includes the successful completion of Critical Design Review for the F-35 conventional takeoff and landing (CTOL) and short takeoff/vertical landing (STOVL) variants on Feb. 17; installation of the Pratt & Whitney F135 turbofan engine on Feb. 13; and pilot manipulation of the F-35 controls and movement of the control surfaces on Jan. 13. Among other recent highlights was "power on" for the first F-35, initiating the flow of electricity into the aircraft last fall; assembly start for the first STOVL F- 35; signing of the System Development and Demonstration contract for the GE Rolls-Royce Fighter Engine Team's F136 interchangeable engine; and the ongoing success of avionics and sensor testing in ground-based laboratories and flying test beds.

"Our global and national strategic objectives continue to move toward joint and coalition cooperation and collaboration and from traditional border defense to forward-deployed coalition operations," Burbage said.

"The F-35 is designed with those shifts in mind," Burbage added, "and along with its stealth capabilities it is positioned to overwhelm adversaries by exploiting the global information grid through integrated avionics, unparalleled situational awareness and a revolutionary sustainment concept."

Lockheed Martin is developing the F-35 with its principal industrial partners, Northrop Grumman and BAE Systems. The aircraft will be built in three distinct versions, although the aircraft will share much of the same equipment and structures. The F-35A is the CTOL version, which will likely be built in the largest numbers; the F-35B will be the world's first supersonic, stealth STOVL aircraft; the F-35C will be an aircraft carrier-based variant with larger wings.

Two separate, interchangeable engines are currently under development for the F-35: the Pratt & Whitney F135 turbofan and the F136 turbofan from the GE Rolls-Royce Fighter Engine Team. Each engine produces 40,000 pounds of thrust, which will make the F-35 the most powerful single-engine fighter ever to fly.

Headquartered in Bethesda, Maryland, USA, Lockheed Martin employs about 135,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2005 sales of $37.2 billion.

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