

## F-35 Lightning II Program Update and Fast Facts

### Development Updates

- As of Feb. 14, 2011, the F-35 flight test program has conducted 628 test flights total, including 81 test flights in 2011.
- All 19 System Development and Demonstration (SDD) test aircraft are out of the factory.
- On Feb. 11, 2011, Lt. Cmdr. Eric “Magic” Buus became the first U.S. Navy pilot to fly the Lockheed Martin F-35C (CF-1).
- On Jan. 27, 2011, the final F-35B STOVL flight test jet, BF-5, accomplished its first flight, and on Jan. 22, another F-35A CTOL aircraft (AF-4) joined the test fleet at Edwards AFB.
- On Jan. 6, 2011, the second F-35B (BF-2) conducted its first vertical landing at NAS Patuxent River, Md.
- On Dec. 30, 2010, the 10<sup>th</sup> F-35 (AF-4) entered the test fleet, accomplishing the program’s last flight in 2010.
- On Dec. 11, 2010, AF-3, the second mission systems F-35, ferried to Edwards AFB.
- On Dec. 9, 2010, the F-35 program reached its 2010 goal of 394 test flights.
- On Nov. 18, 2010, the program accomplished the 500<sup>th</sup> test flight, including the 91 flights conducted by the first test jet, AA-1.
- On Nov. 10, 2010, the first formation flight of two Lockheed Martin F-35B STOVL variant aircraft was completed at Naval Air Station Patuxent River, Md.
- On Nov. 6, 2010, the first F-35C carrier variant (CF-1) successfully ferried to NAS Patuxent River, Md., and Block 1, the first of three principal software-development blocks for the F-35’s mission systems, made its inaugural flight in the F-35B STOVL aircraft.
- On July 6, 2010, the second mission systems F-35, AF-3, successfully conducted its first flight. AF-3 is the fourth F-35A CTOL variant.
- On June 7, 2010, the first mission systems equipped F-35, BF-4, ferried to NAS Patuxent River, Md.
- On June 6, 2010, the first F-35C carrier variant achieved its first flight.
- On May 17, 2010, two F-35As (AF-1 and AF-2) ferried to Edwards AFB in the first multi-ship, long-range F-35 flight.
- On April 7, 2010, BF-4 flew for the first time.
- On March 18, 2010, the first F-35B STOVL variant, BF-1, accomplished its first vertical landing at NAS Patuxent River, Md., confirming its required ability to land in confined areas both ashore and afloat. On March 17, 2010, BF-1 also conducted its first hover and short takeoff.
- Royal Air Force Squadron Leader Steve Long on Jan. 26, 2010, became the first active-duty service pilot from the United Kingdom to fly the F-35, piloting the second F-35B STOVL variant, BF-2, over NAS Patuxent River, Md.
- Software development more than 80 percent complete.

### F-35 AA-1 Flight Testing

- On Dec. 17, 2009, AA-1 conducted its 91st and final flight and is now undergoing live-fire testing at Naval Air Weapons Station China Lake, Calif.
- F-35 AA-1 successfully completed its first flight on Dec. 15, 2006.

**All four F-35A SDD flight test jets are in active flight test.**

- AF-4 entered flight testing on Dec. 30, 2011; ferried to Edwards AFB on Jan. 22, 2011.
- AF-3, the second mission systems F-35, entered flight testing on July 6, 2010; ferried to Edwards AFB on Dec. 11, 2010.
- AF-2 ferried to Edwards AFB on May 17, 2010.
- AF-2 first flight completed on April 20, 2010. The primary role of AF-2 will be weapons testing.
- AF-1: First flight completed on Nov. 14, 2009; Ferried to Edwards AFB on May 17, 2010.

**All five F-35B SDD flight test jets are in active flight test.**

- BF-5: First flight on Jan. 27, 2011.
- BF-4, the first mission systems-equipped F-35, accomplished first flight on April 7, 2010; currently in testing at Patuxent River, Md.
- Block 1, the first of three principal software-development blocks for the F-35's mission systems, made its inaugural flight in BF-4 in November 2010.
- BF-3: First flight Feb. 2, 2010; included first use of Generation II Helmet Mounted Display System; arrived at NAS Patuxent River, Md., on Feb. 17, 2009.
- BF-2: First flight on Feb. 25, 2009; arrived at Patuxent River on Dec. 29, 2009.
- BF-1 conducted the first vertical landing on March 18, 2010, confirming its required ability to land in confined areas both ashore and afloat. The event occurred at NAS Patuxent River, Md.
- On March 17, 2010, BF-1 demonstrated the capability to hover and conduct a short takeoff during a test flight at NAS Patuxent River, Md.
- On Jan. 7, 2010, BF-1 engaged its STOVL propulsion system in flight for the first time near NAS Patuxent River, Md.
- BF-1 first flight successfully completed on June 11, 2008.

**The first F-35C (CF-1) is in flight test.**

- Arrived at NAS Patuxent River, Md., on Nov. 6, 2010.
- First flight completed June 6, 2010.

**All System Development and Demonstration aircraft are on the flight line; 31 production-model F-35s are in assembly.**

- Manufacturing pace is increasing; all test aircraft are in flight testing.
- The first five Low Rate Initial Production aircraft have exited the factory and are undergoing ground testing prior to flight.

**The F-35 Cooperative Avionics Test Bed (CATBird) has begun airborne avionics testing.**

- CATBird, a highly modified 737, is flying and proof-testing the complete, integrated F-35 mission systems package ahead of mission systems flights in F-35 aircraft.
- CATB returned to Fort Worth from Edwards AFB on Aug. 13, 2010, having successfully operated the integrated electro-optical targeting system (EOTS) for the first time.
- CATBird produced first synthetic aperture radar (SAR) maps, first multi-sensor fusion tracks, in November 2009.

- On Nov. 25, 2008, CATBird began in-flight integration of F-35 avionics.

### **F-35 Autonomic Logistics and Global Sustainment (ALGS) system**

- F-35 Autonomic Logistics Information System Operations Center is now operational and supporting flight test aircraft.

### **Funding**

- Long-lead funding approved for Low Rate Initial Production (LRIP) lot 5 (32 aircraft)
- Full funding approved for LRIP lot 4 (31 aircraft, with an option for one Netherlands F-35A)
- Full funding approved for LRIP lot 3 (17 aircraft)
- Full funding approved for LRIP lot 2 (12 aircraft).
- Full funding approved for LRIP lot 1 (2 aircraft)
- Both LRIP 1 aircraft have rolled out of the factory; the first two LRIP 2 aircraft have rolled out.

### **International Partners and Planned Quantities**

- USAF 1,763
- USN/USMC 680
- U.K. RAF/RN 138
- Italy 131
- Netherlands 85
- Turkey 100
- Australia 100
- Norway 48
- Denmark 30
- Canada 65

### **2010 Estimated Average Unit Recurring Flyaway Cost**

- F-35A CTOL \$60 million

### **Decisions**

- Following the Israeli Government decision to select the F-35 as the Israel Air Force's next-generation fighter aircraft, Israeli Ministry of Defense Director General (Maj. Gen. Ret.) Udi Shani on Oct. 7 signed the Letter of Offer and Acceptance for the procurement of the F-35 aircraft. (October 2010)
- Canada announced its selection of the F-35 to fulfill its future fighter requirements. (July 2010)
- The Joint Combat Aircraft program announced that the United Kingdom has received financial approval to purchase its third F-35B operational test aircraft. (Dec. 2009)
- The Australian government made the decision to purchase 14 F-35 aircraft. (Nov. 2009)
- The Norwegian Parliament has decided to support the government's recent decision to replace its F-16 aircraft with 56 F-35 aircraft. The quantity is higher than the 48 aircraft originally planned. (June 2009)
- Dutch parliament made a decision and agreed to procure one test F-35 Netherlands aircraft for inclusion in the test and evaluation phase of SDD. (Apr. 2009)

- The Italian Parliament approved the Ministry of Defence plan to enter into the next phase of their involvement in the program, including the purchase of 131 F-35 aircraft and construction of a final assembly facility at Cameri Air Base. (Apr. 2009)

### F-35 Specifications

	<b>F-35A CTOL</b>	<b>F-35B STOVL</b>	<b>F-35C CV</b>
<b>Length</b>	51.4 ft / 15.67 m	51.2 ft / 15.61 m	51.5 ft / 15.7 m
<b>Height</b>	14.4 ft / 4.38 m	14.3 ft / 4.36 m	14.7 ft / 4.49 m
<b>Speed (full internal weapons load)</b>	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)
<b>Wingspan</b>	35 ft / 10.67 m	35 ft / 10.67 m	43 ft / 13.11 m
<b>Wing area</b>	460 ft <sup>2</sup> / 42.7 m <sup>2</sup>	460 ft <sup>2</sup> / 42.7 m <sup>2</sup>	668 ft <sup>2</sup> / 62.06 m <sup>2</sup>
<b>Horizontal tail span</b>	23 ft	22 ft	26 ft
<b>Combat radius (internal fuel)</b>	>590 nm / 1,093 km	>450 nm / 833 km	>600 n.mi / 1,111 km
<b>Range (internal fuel)</b>	>1,200 nm / 2,222 km	>900 nm / 1,667 km	>1,200 n.mi / 2,222 km
<b>Internal fuel capacity</b>	18,250 lb / 8278 kg	13,500 lb / 6,123.5 kg	19,750 lb / 8,958.5 kg
<b>Weight empty</b>	29,300 lb	32,300 lb	34,800 lb
<b>Maximum weight</b>	70,000 lb class	60,000 lb class	70,000 lb class
<b>Max g-rating</b>	9.0	7.0	7.5
<b>Weapons payload</b>	18,000 lb / 8,164.67 kg	15,000 lb / 6,803.89 kg	18,000 lb / 8,164.67 kg