

F-35 Lightning II Program Update and Fast Facts

Development Updates

- As of Nov. 20, 2010, the F-35 flight test program has conducted 506 test flights total; 369 test flights in 2010.
- All 19 System Development and Demonstration test aircraft are out of the factory.
- 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, 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, 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.
- First F-35B STOVL variant, BF-1, engaged its STOVL propulsion system in flight for the first time on Jan. 7, 2010.
- 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.

The second F-35A (AF-1) is in flight test.

- Aircraft ferried to Edwards AFB on May 17, 2010
- First flight completed on Nov. 14, 2009.

The third and fourth F-35As (AF-2 and AF-3) are in flight test.

- AF-3, the second mission systems F-35, entered flight testing on July 6.
- 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.

The first F-35B (BF-1) is in flight test.

- On March 18, 2010, BF-1 conducted the first vertical landing, 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.
- First flight successfully completed on June 11, 2008
- All ground tests completed on June 9, 2008

The second F-35B (BF-2) is in flight test.

- 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. The flight occurred at NAS Patuxent River, Md.
- First flight completed on Feb. 25, 2009

The third F-35B (BF-3) is in flight test.

- 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

The fourth F-35B (BF-4) is in flight test.

- [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](#)
- First flight completed April 7, 2010; aircraft is now testing at Patuxent River
- BF-4 is the first mission systems-equipped F-35, ushering in what will be the most powerful and comprehensive sensor package ever to fly in a fighter.

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

- [Arrived at NAS Patuxent River, Md., on Nov. 6, 2010](#)
- [Airworthiness trials completed; final finishes completed](#)
- 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 two Low Rate Initial Production aircraft have exited the factory and will undergo ground testing.

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

- CATBird, a highly modified 737, will fly and proof-test the complete, integrated F-35 mission systems package before it flies in an 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, and full-funding agreement reached, for Low Rate Initial Production \(LRIP\) 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).
- All aircraft in LRIP 1 and 2 are in assembly; assembly has begun on LRIP 3 aircraft.

International Partners

- All F-35 participant countries have joined the F-35 program's next phase. Those countries are the United Kingdom, Italy, the Netherlands, Turkey, Canada, Australia, Denmark and Norway.

Quantities (planned)

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

Average Unit Recurring Flyaway Cost (in FY 2002 dollars)

- F-35A upper-\$40 million
- F-35B mid-\$60 million
- F-35C mid-\$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)
- The U.S. Department of Defense released the President's FY '10 budget request for military programs that accelerates the F-35 program to 513 aircraft in the five year budget plan (an increase of 28 aircraft). (May 2009)
- Australia released its Defence White Paper with a commitment to maintaining a strong national defense for Australia, including the purchase the 100 F-35 Joint Strike Fighters. (May 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

	F-35A CTOL	F-35B STOVL	F-35C CV
Length	51.4 ft / 15.67 m	51.2 ft / 15.61 m	51.5 ft / 15.7 m
Height	14.2 ft	14.1 ft	14.9 ft
Speed (full internal weapons load)	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)
Wingspan	35 ft / 10.67 m	35 ft / 10.67 m	43 ft / 13.11 m
Wing area	460 ft ² / 42.7 m ²	460 ft ² / 42.7 m ²	668 ft ² / 62.06 m ²
Horizontal tail span	23 ft	22 ft	26 ft
Combat radius (internal fuel)	>590 nm / 1,093 km	>450 nm / 833 km	>600 n.mi / 1,111 km
Range (internal fuel)	>1,200 nm / 2,222 km	>900 nm / 1,667 km	>1,200 n.mi / 2,222 km
Internal fuel capacity	18,250 lb / 8,278 kg	13,500 lb / 6,123.5 kg	19,750 lb / 8,958.5 kg
Weight empty	29,300 lb	32,000 lb	34,800 lb
Maximum weight	70,000 lb class	60,000 lb class	70,000 lb class
Max g-rating	9.0	7.0	7.5
Weapons payload	18,000 lb / 8,164.67 kg	15,000 lb / 6,803.89 kg	18,000 lb / 8,164.67 kg