F-35A Lightning II - 2019, SDB-I, JSOW

United States



Type: Multirole (Fighter/Attack)
Min Speed: 350 kt
Max Speed: 920 kt
Commissioned: 2019
Length: 15.67 m
Wingspan: 10.7 m
Height: 4.33 m
Crew: 1
Empty Weight: 13300 kg
Max Weight: 31800 kg
Max Payload: 6810 kg
Propulsion: 1x F135-PW-100

Sensors / EW: - AN/ASQ-239 Barracuda - (F-35) ESM, ELINT, Max range: 926 km
- AN/APG-81 AESA - (F-35, LPI) Radar, Radar, FCR, Air-to-Air & Air-to-Surface, Long-Range, Max range: 370.4 km
- AN/AAQ-37 EO-DAS - (F-35) Infrared, Infrared, Day/Night Spherical Situational Awareness & Fire Control, Max range: 111.1 km
- AN/AAQ-40 EOTS [Laser Designator] - (F-35) Laser Designator, Laser Target Designator & Ranger (LTD/R), Max range: 27.8 km
- AN/AAQ-40 EOTS [IRST] - (F-35) Infrared, Infrared, Navigation / Attack Camera & Air-to-Air Tracking, Max range: 185.2 km
- AN/AAQ-37 EO-DAS MAWS - (F-35) Infrared, MAWS, Missile Approach Warning System, Max range: 9.3 km
- AN/APG-81 OECM - (F-35, AN/APG-81 USN/USAF/USMC) ECM, OECM, Offensive ECM, Max range: 0 km

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Weapons / Loadouts:
- AIM-120D AMRAAM P3I.4 - (2015, AIM-120C-8) Guided Weapon. Air Max: 160 km.
- GBU-12D/B Paveway II LGB [Mk82] - Guided Weapon. Surface Max: 7.4 km. Land Max: 7.4 km.
- AIM-9X Sidewinder - (2005) Guided Weapon. Air Max: 25.9 km.
- GBU-31(V)3/B JDAM [BLU-109/B] - (USAF) Guided Weapon. Land Max: 24.1 km.
- GBU-31(V)1/B JDAM [Mk84] - (USAF, 1999) Guided Weapon. Land Max: 24.1 km.
- GBU-39/B SDB - (USAF, 2006) Guided Weapon. Land Max: 111.1 km.
- GBU-49/B Paveway II GPS/LGB [Mk82] - Guided Weapon. Surface Max: 7.4 km. Land Max: 7.4 km.
- B61 Tactical/Strategic Bomb [340kT Nuclear] - (1968) Bomb. Surface Max: 1.9 km. Land Max: 1.9 km.
- AGM-154C JSOW [BROACH] - (2004) Guided Weapon. Surface Max: 116.7 km. Land Max: 116.7 km.
- AGM-154C-1 JSOW [BROACH] - (2016) Guided Weapon. Surface Max: 116.7 km. Land Max: 116.7 km.

OVERVIEW: The Lockheed Martin F-35 Lightning II is a family of single-seat, single-engine, all weather stealth

multirole fighters undergoing testing and final development. The fifth generation combat aircraft is designed to perform ground attack, reconnaissance, and air defense missions. The F-35 has three main models: the F-35A conventional takeoff and landing (CTOL) variant, the F-35B short take-off and vertical-landing (STOVL) variant, and the F-35C carrier-based CATOBAR (CV) variant.

The F-35 is descended from the X-35, which was the winning design of the Joint Strike Fighter (JSF) program. It is being designed and built by an aerospace industry team led by Lockheed Martin. Other major F-35 industry partners include Northrop Grumman, Pratt & Whitney and BAE Systems. The F-35 took its first flight on 15 December 2006. The United States plans to buy 2,443 aircraft. The F-35 variants are intended to provide the bulk of its manned tactical airpower for the U.S. Air Force, Marine Corps and Navy over the coming decades. Deliveries of the F-35 for the U.S. military are scheduled to be completed in 2037.

F-35 JSF development is being principally funded by the United States with additional funding from partners. The partner nations are either NATO members or close U.S. allies. The United Kingdom, Italy, Australia, Canada, Norway, Denmark, the Netherlands, and Turkey are part of the active development program; Several additional countries have ordered, or are considering ordering, the F-35.

DETAILS: The F-35 appears to be a smaller, single-engine sibling of the twin-engine Lockheed Martin F-22 Raptor, and indeed drew elements from it. The exhaust duct design was inspired by the General Dynamics Model 200 design, proposed for a 1972 supersonic VTOL fighter requirement for the Sea Control Ship. Lockheed consulted with the Yakovlev Design Bureau in the F-35B STOVL variant's development, purchasing design data from their development of the Yakovlev Yak-141 "Freestyle". Although several experimental designs have been developed since the 1960s, such as the unsuccessful Rockwell XFV-12, the F-35B is to be the first operational supersonic, STOVL stealth fighter.

Acquisition deputy to the assistant secretary of the Air Force, Lt. Gen. Mark D. "Shack" Shackelford has said that the F-35 is designed to be America's "premier surface-to-air missile killer and is uniquely equipped for this mission with cutting edge processing power, synthetic aperture radar integration techniques, and advanced target recognition." Lockheed Martin states the F-35 is intended to have close-range and long-range air-to-air capability second only to that of the F-22 Raptor. Lockheed Martin has said that the F-35 has the advantage over the F-22 in basing flexibility and "advanced sensors and information fusion". Lockheed Martin has suggested that the F-35 could replace the USAF's F-15C/D fighters in the air superiority role and the F-15E Strike Eagle in the ground attack role, although the F-35 lacks the range of the F-15.

Some improvements over current-generation fighter aircraft are: Durable, low-maintenance stealth technology, using structural fiber mat instead of the high-maintenance coatings of legacy stealth platforms || Integrated avionics and sensor fusion that combine information from off-board and on-board sensors to increase the pilot's situational awareness and improve target identification and weapon delivery, and to relay information quickly to other command and control (C2) nodes || High speed data networking including IEEE 1394b and Fibre Channel. (Fibre Channel is also used on Boeing's Super Hornet.) || The Autonomic Logistics Global Sustainment (ALGS), Autonomic Logistics Information System (ALIS) and Computerized maintenance management system (CMMS) are to help ensure aircraft uptime with minimal maintenance manpower || Electro-hydrostatic actuators run by a power-by-wire flight-control system || Lightweight, powerful and volatile Lithium-ion batteries similar to those that have grounded the Boeing 787 Dreamliner fleet. These are required to provide power to run the control surfaces in an emergency, and have been strenuously tested.

The F-35 has been designed to have a low radar cross-section primarily due to the shape of the aircraft and the use of stealthy materials in its construction, including fiber-mat. Unlike the previous generation of fighters, the F-35 was designed for very-low-observable characteristics. Besides radar stealth measures, the F-35 incorporates infrared and visual signature reduction measures.

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TYPE: All Weather Stealth Multirole Fighter Aircraft.

SPECIFICATIONS: Crew: (1) || Length: 50.5 ft (15.67 m) || Wingspan: 35 ft (10.7 m) || Height: 14.2 ft (4.33 m) || Max. takeoff weight: 70,000 lb (31,800 kg) || Powerplant: (1) Pratt & Whitney F135 afterburning turbofan || Dry thrust: 28,000 lbf (125 kN) || AB Thrust: 43,000 lbf (191 kN).

PERFORMANCE: Max Speed: Mach 1.6+ (1,200 mph, 1,930 km/h) || Cruise speed: 1.2 mach for 9.8 min || Range: 1,200 nmi (2,220 km) on internal fuel || Combat radius: 613 nmi (1,135 km) on internal fuel || Thrust/weight: With full fuel: 0.87, With 50% fuel: 1.07.

SENSORS: AN/APG-81 AESA radar || AAQ-40 E/O Targeting System (EOTS) || AN/AAQ-37 Distributed Aperture System (DAS) missile warning system || AN/ASQ-239 (Barracuda) electronic warfare system || AN/ASQ-242 CNI system.

ARMAMENT: (1) General Dynamics 25 mm (0.984 in) GAU-22/A 4-barrel Gatling gun, internally mounted with 180 rounds || Hardpoints: (6) external pylons on wings with a capacity of 15,000 lb (6,800 kg) and two internal bays with two pylons each for a total weapons payload of 18,000 lb (8,100 kg) || AIM-120 AMRAAM || AIM-9X Sidewinder || IRIS-T || MBDA Meteor (pending further funding) || AGM-88 AARGM || AGM-158 JASSM || Brimstone missile / MBDA SPEAR || Joint Air-to-Ground Missile (JAGM) || Storm Shadow missile || SOM || Joint Strike Missile (JSM) Anti-Ship || Long Range Anti-Ship Missile (LRASM) || Mark 84 or Mark 83 or Mark 82 GP bombs || Mk.20 Rockeye II cluster bomb || Wind Corrected Munitions Dispenser (WCMD) capable || Paveway series laser-guided bombs || Small Diameter Bomb (SDB) || Joint Direct Attack Munition (JDAM) series || AGM-154 JSOW || B61 mod 12 nuclear bomb.

SOURCE: [SCO] Wikipedia http://en.wikipedia.org