



# F-35 Lightning II Program

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*Story by Samuel King*

EGLIN AIR FORCE BASE, Fla. -- As the Marine Corps celebrates its centennial of aviation this year, a member of the 33d Fighter Wing became a part of that history having recovered the first F-35B Lightning II, here, Jan. 11.

After quick hand signals to the pilot, and well placed steps to clear the engine exhaust, Gunnery Sgt. Matthew Smith, with the Marine Fighter Attack Squadron 501, choreographed parking the F-35B and shut-down engine checks with his fellow maintainers, known as plane captains in the Marine Corps.

"It's just a success to see the aircraft here," said Smith. "It's been a success for the Marine Corps, the 33d Fighter Wing and me personally."

Smith has 16 years experience maintaining aircraft in environments like small-deck aircraft carriers, stateside military bases and deployed environments, but for the last two years he's been gearing up for this day.

Unbeknownst to Smith, his master sergeant at Cherry Point Marine Air Station, N.C., had nominated him for the hand-picked program while Smith had simultaneously wanted to participate based on a briefing he attended given by the senior maintenance chief for the Marine Corps.

It didn't take Smith long to decide once he was chosen.

"All right, let's rock. I'm ready to roll," he recalled saying after hearing the news.

He arrived here Dec. 2009, anticipating training on and maintaining jets locally. But with delays in maturity of the program, the first aircraft, the Air Force variant of the F-35, was received in July 2011.

Incidentally, Smith saw that aircraft landing while standing atop a ladder and peering over his shoulder. He was in the midst of hanging his unit's sign on the Marine's aircraft hangar when the Air Force variant landed. He said he "didn't want to just leave the sign hanging there."

It seems that dedication to see a task through was a clue to what Smith's future would hold.

The shift in receiving F-35s at Eglin meant he could again make history by having the opportunity to help create the first writings of maintainer documents precluding the arrival of joint task lists and joint technical data from Lockheed Martin.

Examples included tasks on how to retrieve the aircraft, remove and replace an engine, tires, struts and all movable surfaces and planning out the placement of the aircraft on a carrier or flight line, according to Smith.



**Top Two Images:**

Gunnery Sgt. Matthew Smith, a maintainer with Marine Fighter Attack Squadron 501, marshals in the first Marine variant F-35B Lightning II **joint strike fighter** to arrive at Eglin Air Force Base, Fla., Jan. 11. EGLIN AIR FORCE BASE, Fla. Photo credit: Samuel King.

**Bottom Image:**

Maj. Joseph Bachmann shakes hands with his plane captain Gunnery Sgt. Matthew Smith, of Marine Fighter Attack Squadron 501, after bringing the first Marine F-35B Lightning II joint strike fighter to its new home at Eglin Air Force Base, Fla. The Marines of VMFAT-501 received two F-35Bs, Jan. 11. Both aircraft were escorted in by Marine F-18 Hornets. Photo credit: Samuel King.

"This allows him to be a part of the team to execute a comprehensive maintenance plan and help ensure success with the Marine Corps' newest weapon, the F-35B," said Master Gunnery Sgt. Juan Villarreal, maintenance chief at the VMFAT-501.

Other steps taken leading up to receiving the aircraft was as a two-week training course Smith attended in Hartford, Conn. at the Pratt and Whitney F-135 engine plant where he received an overview of theories and operations of the engine.

"I learned how the lift fan system on the front of the aircraft works simultaneously with the engine propulsion system."

This feature allows for the short takeoff and vertical landing capability of the Marine variant of the F-35. The back part of the engine pivots 90 degrees to direct the thrust at the ground with STOVL making it possible to land on an L-class, small-deck aircraft carrier.

And while Smith and his team received the aircraft in a traditional mode of landing, it performed what some dub the "transformer" maneuver after landing. The back portion of the aircraft is pointed down to the airfield and then back horizontal as part of the shutdown checklist.

Next, Smith worked alongside fellow 33rd FW Air Force and Navy maintainers taking a three-week cadre course at Eglin in the Spring of 2010. Smith described the course as an in-depth overview of the capabilities and maintainability of the aircraft.

This was followed by 60 days at Patuxent River Naval Air Station in Maryland to learn in-depth tasks such as pulling a lift fan and an engine.

Eglin's newest aircraft edition will be eventually be maintained inside the Navy and Marine Corps hangar.

The more than \$42.5 million hangar boasts air conditioning piped out from plumbing buried in the floor of the hangar, and with an extended hose, is outfitted under the open bay of the jet to cool the avionics when servicing the jet, according to Smith.

This means more efficient maintenance operations with less time retrieving the ground support equipment like the electric and cooling cart, which is about the size of an S-10 pick-up truck, according to Smith.

What lays ahead for Smith and the rest of the Marines are the new challenges inherent with all new programs, said Air Force Col. Andrew Toth, commander of the 33rd Fighter Wing.

But those challenges are welcome since it means a step forward in getting Eglin fully qualified for producing F-35 pilots and maintainers.

"It's been an Air Force show up until this point," said Toth. "By having the two variants of the aircraft here, we've made the transition to becoming a fully integrated wing."

