



# F-35 Lightning II Program

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MARINE CORPS AIRCRAFT MAINTAINERS KEEP LIGHTNING IN THE SKY

By Pfc. Remington Hall

**ATLANTIC OCEAN** - Vertical landings, low observability, X-ray vision helmets and laser tracking systems are just a few pieces of space-age technology incorporated in the Marine Corps' F-35B Lightning II.

The tactical power of this 21st Century jet is another example of how Marine Corps aviation is evolving. But it takes more than one Marine in the cockpit to keep this plane in the air.

"Behind all of that flight time, there are many hours of maintenance," said Maj. Adam Perlin, an F-35B pilot from Marine Fighter Attack Squadron 121, Marine Aircraft Group 13, 3rd Marine Aircraft Wing. "Without the Marines working on the aircraft, I'm not going to go anywhere."

On May 18, 2015, Marines from Marine Operational Test and Evaluation Squadron 22, Marine Fighter Attack Training Squadron 501, and Marine Fighter Attack Squadron 121, began working together aboard USS Wasp to support the first phase of Operational Testing (OT-1) of the F-35B Lightning II Joint Strike Fighter.

The three teams of enlisted Marines are the real drive behind the operation: the avionics technicians, powerline mechanics and the airframe mechanics.

"In avionics we work with all the communications, navigation, electrical and weapons systems on the aircraft," said Capt. John Johnson, the officer in charge of the Avionics and Airframe Divisions aboard USS Wasp for OT-1. "The airframes Marines do metalwork and hydraulics; and on this platform, they're in charge of the low observables, or the stealth properties of the aircraft."

"Anything involving the fuel and oil system is our responsibility as powerline," said Sgt. Benjamin McIntire, a powerline mechanic with VMX-22. "Engines, fuel systems, oil systems, tires and things like that."

In simpler terms, avionics covers the computers and software of the plane; airframes deals with the outside, or structural side, of the plane; and powerline Marines take care of the aircraft's mechanical guts.

"We go through pre-flight and post-flight checks of pretty much all the systems, but particularly we have to check the power system before flight," said Cpl. Jared VanSpeybroeck, an avionics technician with VMFAT-501. "Does he have power; back-up power; batteries; are the systems synced? All of these things can make or break your flight plan."

Similar to the avionics team's electronics checks, the powerline team conducts safe-for-flight inspections and after-flight assessments on the structural and mechanical integrity of the plane.

"We make sure each aircraft is safe," said McIntire. "It's a lot of responsibility, performing the in-depth, pre-flight and post-flight inspections, knowing that the life of another Marine is in your hands."

VanSpeybroeck stated that sometimes the nature of his job as an avionics technician can be very challenging, since the cause of an electronics malfunction can be hard to pinpoint.

"We're troubleshooters," said VanSpeybroeck. "The aircraft is a flying computer, so we have to take care of the computer."

VanSpeybroeck also emphasized that the F-35B requires a joint effort by all maintenance shops in order to run properly. "If any shop weren't here, or lacked in capability, then the plane wouldn't fly," said VanSpeybroeck. "The F-35 is a finely-tuned machine that requires a broad spectrum of maintenance in order to perform."



Cpl. Kendal Parish and Sgt. Arben Kupa, both Airframe Mechanics from Marine Fighter Attack Training Squadron 501, reinstall a panel of an F-35B Lightning II Joint Strike Fighter after maintenance aboard the USS Wasp, May 24, 2015. The Maintainers from VMFAT-501 are aboard the Wasp to support maintenance of the F-35B during the operational testing period.

Mcintire recalled a malfunction in one of the F-35's during OT-1, where the pilot returned from flight with a fuel transfer complaint. After troubleshooting, they discovered one of the fuel boost pumps needed to be replaced. The team had planned for many different maintenance contingencies, and had a spare already packed aboard.

"Airframes removed the panel to access the fuel pump," said McIntire. "After our maintenance and testing of the boost pump, the plane returned to service and flew through all of its allotted slots."

Johnson stated his teams contribute to overall efforts to ensure the aircraft is safe. They confirm the integrity of the aircraft, and that the navigations and the communications systems are all in good order so the pilot can make it back to the ship safely.

"They came together from three different squadrons [based in North Carolina, South Carolina and Arizona], and seamlessly transitioned into one solid unit," said Johnson. "I addressed them yesterday and told them this is the group I would want to deploy on a Marine Expeditionary Unit with right now."