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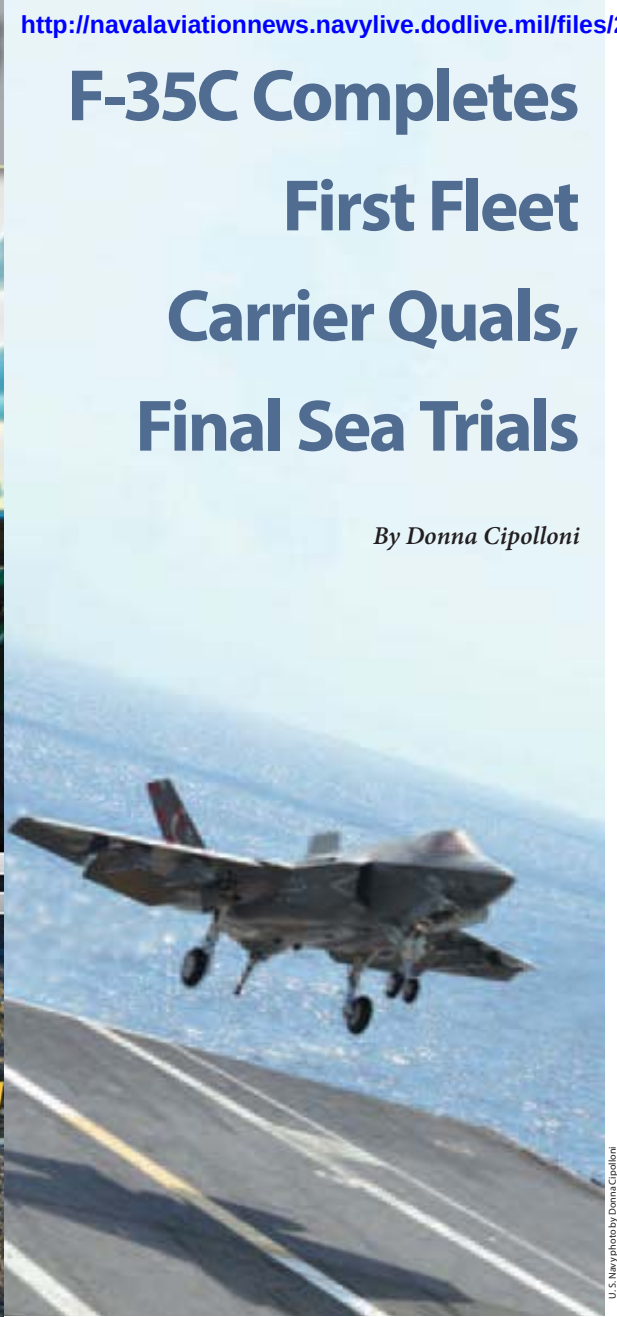
F-35C: Fleet Carrier Qualified

F-35C Completes First Fleet Carrier Quals, Final Sea Trials

By Donna Cipolloni



U.S. Navy photo by Donna Cipolloni

The no-frills C-2 Greyhound's arrested landing Aug. 15 aboard USS George Washington (CVN 73), deployed 100 miles offshore from Virginia, would more aptly be described by its journalist passengers as a "controlled crash" after the aircraft abruptly slammed onto the carrier's flight deck.

Invited to cover the third and final round of at-sea developmental testing, or DT-III, for the F-35C Lightning II—the Navy's carrier variant of the Joint Strike Fighter—our group disembarked and hurriedly crossed the flight deck where the powerful jet blast from two F-35Cs waiting to catapult off the bow only added to the already intense summer heat and humidity.

Operations were well underway as we reached our elevated vantage point on Vulture's Row where, in addition to phase three of testing, we would also witness Naval Aviation history as 12 pilots from the "Grim Reapers" of Strike Fighter Squadron (VFA) 101 out of Eglin Air Force Base, Florida, achieved the fleet's first F-35C carrier qualifications (CQ). Jet after jet thundered on and off the deck as each pilot knocked out two touch-and-go landings and 10 arrested landings in just a day and a half—a record pace compared to CQ with legacy aircraft.

"The work we did [during the two previous test phases at sea] directly fed what VFA-101 was able to come out and do today," explained Tom Briggs, lead flight test engineer with the F-35 Lightning II Integrated Test Force (ITF) at Naval Air Station Patuxent River, Maryland, and recipient of the 2015 Department of the Navy Lead Tester of the Year award. "For those of us involved in the program for quite a while, it was incredibly gratifying to see them come out and use that work to start making this aircraft real and get it out to the fleet."

Following CQ, four Navy test pilots and one Marine Corps pilot assigned to the "Salty Dogs" of Air Test and Evaluation Squadron (VX) 23 kicked off testing with their F-35 Pax River ITF teammates, who comprised a diverse group of technicians, maintainers, engineers, logisticians and support staff.

During the test period, which concluded Aug. 25, one week ahead of schedule, objectives included external symmetric and asymmetric weapons loads; launches and recoveries at maximum weight; approach handling qualities; night operations with the Gen III Helmet Mounted Display; landing systems certifications; and engine logistics. The Pax River ITF completed 100 percent of the 613 required DT-III test points during 41 flights that logged 39.7 flight hours over the course of 10 days.

Cmdr. Ted Dyckman, VX-23 test pilot, started out

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flying F/A-18 Hornets, moved to F/A-18 Super Hornets, and now flies the F-35C. It was his third ship trip and 50th trap—and he has a definite favorite.

"I prefer the F-35," he said. "It's easy to fly, autopilot is nice, cockpit has good visibility, and mission systems make it easy to do your task."

One of the most difficult and hazardous tasks in Naval Aviation is landing on the deck of an aircraft carrier, something now made simpler by Delta Flight Path, a semi-automated landing mode developed by Lockheed Martin in collaboration with Naval Air Systems Command that significantly lowers a pilot's workload.

"The control laws allow aircraft to fly a commanded glide slope," Dyckman said. "Before, you had to manually fly that path through the air. Now, at the push of a button, the airplane will tip over and fly that path. If I have a good approach behind ship, I can push one button. If there are deviations, I can make a correction. Other than that, I may not touch the stick at all during the approach, from the start until touchdown. Coming to the ship is as easy as landing on an airfield now and that enables us to spend less time training guys to land on the ship."

Other testing involved improved nighttime visibility for the aircraft's third generation helmet, which displays symbology right on the pilot's visor.

"I don't have to look down for a piece of info on one display, then to another display and correlate it all in my head; everything appears in the helmet," Dyckman said. "When I look out, even if I'm looking away from where I'm going, I can see my target information, airspeed, altitude, threats. With this airplane, I basically have a display with my aircraft in the center and it presents information for situational awareness."

Test pilot Lt. Cmdr. Daniel Kitts, officer in charge of the VX-23 test detachment, noted three things about the F-35C that excite him.

"The ability to bring the aircraft back aboard the ship safely the first time, every time for the most junior pilot to the most senior is one of its major advantages," Kitts said. "Also, the incorporation of its mission systems to the pilot and the fusion of that information is really going to make it a lethal tactical platform; and its ability to share that information with other assets in the fleet is going to help build the picture for the whole carrier strike group. Not to mention, we're bringing a stealthy airplane to the carrier decks for the first time."

The F-35C's unprecedented stealth-at-sea capability delivers an advantage for penetrating threat envelopes, and its ability to detect and fuse information from many sensors—and link that fused picture to other carrier strike group aircraft, ships and other decision makers—is a game changer, noted Commander of Naval Air Forces, Vice Adm. Mike Shoemaker, while speaking Aug. 18 to an audience at the Center for Strategic and International Studies in Washington, D.C.

"The F-35's performance aboard USS George Washington is giving us the ability to look at the way we conduct work-ups and potentially expand the number of sorties," Shoemaker said. "It will change the way we operate around the ship and change the number of tankers required for daytime and nighttime. The F-35 will give us a lot of flexibility in the air wing and in the way we use those strike fighters."

DT-III was an incremental buildup over five years of work from the Pax River ITF team, beginning with the first aircraft's initial onshore catapult and arresting gear testing, and ending with the hundreds of operational cats and traps that recently took place aboard Washington. Having completed the gross weights and load up testing necessary to equip the fleet with a full launch and recovery bulletin, it was the final phase of testing.

"It's going to be a viable aircraft that's going to do what it's been designed to do," Briggs said.

The Navy is expected to declare initial operational capability in 2018.

Donna Cipolloni is a staff writer for the Naval Air Station Patuxent River, Maryland, Tester newspaper.

U.S. Navy photo by MC2 Kris R. Lindstrom

Sailors prepare to launch an F-35C Lightning II carrier variant assigned to the "Grim Reapers" of Strike Fighter Squadron (VFA) 101, the Navy's F-35C fleet replacement squadron, off the flight deck of USS George Washington (CVN 73).

U.S. Navy photo by Donna Cipolloni

Handler Lt. Cmdr. Greg Curl directs the movement of two F-35Cs from VX-23 and five F-35Cs from VFA-101 aboard the flight deck of USS George Washington (CVN 73).

U.S. Navy photo by Donna Cipolloni

As an F-35C from VX-23 prepares to be catapulted, two F-35C aircraft from VFA-101 await their turn.

What it's Like to Fly the Navy's F-35C

Navy Live BLOG recently caught up with Lt. Nicholas Rezendes, a U.S. Navy fighter pilot assigned to Strike Fighter Squadron (VFA) 101 located at Eglin Air Force Base, Florida. On Aug. 14, he participated in carrier qualifications for the F-35C Lightning II carrier variant aboard USS George Washington (CVN 73).

U.S. Navy photo

Lt. Nicholas Rezendes

The best part of my job as a naval aviator is, for sure, being able to hop in a jet and leave all of life's other concerns behind. Allowing yourself to focus completely on the task at hand can be therapeutic.

I have flown a handful of different aircraft, starting out in flight training with the T-34C Turbo Mentor and the T-45A and C Goshawks. After receiving my wings, I flew the F/A-18C Hornet with Strike Fighter Squadron (VFA) 113. Now, I'm flying the F-35C Lightning II. And just like that sounds, the F-35C is leaps and bounds ahead of what I've grown accustomed to.

The F-35C is a stealth aircraft with powerful avionics that are at the cutting edge of technology. The F/A-18C was at the cutting edge in the '90s, but the venerable Hornet is showing its age after more than two decades; so you can imagine the difference.

Regardless, ignoring the tactical capabilities of the F-35, it is a similar piloting experience to most of the other jet aircraft I have flown. The giant touch screen is a big advantage—it has certainly got me feeling spoiled. As much as I'll always love the legacy F/A-18C, I have to admit that I would probably feel a bit disappointed if I went back to using the smaller, all-green displays in the Hornet.

Every carrier aviator faces the same challenges prior to going to the ship; each one of us gets nervous every time. Now, factor in that we're conducting carrier qualifications with a new platform. You can see that we're operating in a high-pressure and unforgiving environment that requires 100 percent focus from the pilots to the maintainers.

The best part of participating in the F-35C's carrier qualification is witnessing firsthand such a major, significant evolution in carrier aviation. The Lightning II is outfitted with a landing mode that greatly enhances the pilot's ability to safely land aboard an aircraft carrier—a feature that has been developed alongside a similar program for the F/A-18 Super Hornet, known as MAGIC CARPET. The precise landing capabilities granted by these programs come as close as possible to simplifying the most demanding aspects of shipboard recovery.

Leading up to the carrier qualifications, I was particularly excited to see how this jet handled behind the aircraft carrier. It really exceeded my expectations. Having only previously conducted arrested landings in Hornets, the comparison between the two was night and day.

The F-35C brings a multitude of tactical mission sets to the U.S. Navy, and will prove to be a lethal and capable asset to carrier air wings. I'm both proud and excited to be a participant in this history.

Lt. Rezendes, a native of Berkley, Massachusetts, graduated with a degree in criminal justice from Northeastern University in Boston. He earned his commission through Officer Candidate School in 2008. In 2011, he finished flight school in Kingsville, Texas. He deployed aboard USS Carl Vinson (CVN 70) in support of Operation Inherent Resolve in the Arabian Gulf from 2014 to 2015.