



# F-35 Lightning II Pax River Integrated Test Force

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An F-35B Lightning II completed the first ramp-assisted short take off to test the aircraft's compatibility with British and Italian aircraft carriers.

"This test was a success for the joint ski jump team," said Peter Wilson, BAE Systems F-35 test pilot and U.K. citizen, who flew the 19 June mission at Naval Air Station Patuxent River, Maryland. "The aircraft performed well and I can't wait until we're conducting F-35 ski jumps from the deck of the Queen Elizabeth carrier."

Two F-35 partner nations use ramp-assisted short take offs for their carrier operations as an alternative to the catapults and arresting gear used aboard longer U.S. aircraft carriers. The shorter U.K. and Italian carriers feature an upward-sloped ramp at the bow of the ship. Curved at its leading edge, a ski-jump ramp simultaneously launches aircraft upward and forward, allowing aircraft to take off with more weight and less end-speed than required for an unassisted horizontal launch aboard U.S. aircraft carriers.

The F-35B's design allows it to automatically position the control surfaces and nozzles for takeoff; a unique capability compared with previous short takeoff and vertical landing aircraft. Such automation frees up pilot capacity and provides an added safety enhancement.

"The control laws on the F-35B are designed to make the task of taking off and landing at the ship much easier than for previous STOVL aircraft," said Gordon Stewart, flying qualities engineer representing the UK Ministry of Defence. "For ski jump launches, the aircraft recognizes when it is on the ramp and responds by positioning the control surfaces and nozzles automatically for takeoff and climb. This was our first chance to demonstrate these new control laws using a land-based ski jump. We'll be using these results - along with those from future testing - to help us prepare for the first shipboard ski jump launch from HMS Queen Elizabeth."



The F-35 Lightning II Pax River Integrated Test Force from Air Test and Evaluation Squadron (VX) 23 conducted the first-ever ski jump of an F-35B Lightning II short take-off/vertical-landing (STOVL) variant June 19. During flight 298, BAE test pilot Peter Wilson launched aircraft BF-04 from a land-based ski jump located aboard NAS Patuxent River. This test is the first of a series of U.K. ski jump events scheduled for 2015. Ramp Assisted STO [video](#) (see attached) -- Dane Wiedmann, videographer Ramp Assisted STO photo (see attached) -- Andy Wolfe, photographer