Setting The Record Straight On F-35

U.S. Air Force analyses show the Lockheed MartinF-35 Lightning II is at least 400 percent more effective in air-to-air combat capability than the best fighters currently available in the international market.

The Air Force's standard air-to-air engagement analysis model, also used by allied air forces to assess air-combat performance, pitted the 5th generation F-35 against all advanced 4th generation fighters in a variety of simulated scenarios. The results were clear: the F-35 outperformed the most highly evolved fighters in aerial combat by significant margins.

"In all F-35 Program Office and U.S. Air Force air-to-air combat effectiveness analysis to date, the F-35 enjoys a significant Combat Loss Exchange Ratio advantage over the current and future air-to-air threats, to include Sukhois," said Maj. Gen. Charles R. Davis, F-35 program executive officer.

Recent claims that Russian fighters defeated F-35s in a Hawaii-based simulated combat exercise are untrue, according to Maj. Gen. Davis.

"The reports are completely false and misleading and have absolutely no basis in fact," Maj. Gen. Davis said. "The August 2008 Pacific Vision Wargame that has been referenced recently in the media did not even address air-to-air combat effectiveness. The F-35 is required to be able to effectively defeat current and projected air-to-air threats. All available information, at the highest classification, indicates that F-35 is effectively meeting these aggressive operational challenges."

The Pacific Vision Wargame was a table-top exercise designed to assess basing and force-structure vulnerabilities, and did not include air-to-air combat exercises or any comparisons of different aircraft platforms.

Other erroneous allegations about the program were recently made in a letter distributed and written by industry-watchers Winston Wheeler and Pierre Sprey.

"It's not clear why they attacked the Joint Strike Fighter (JSF) program," said Tom Burbage, Lockheed Martin executive vice president of F-35 program integration. "It is clear they don't understand the underlying requirements of the F-35 program, the capabilities needed to meet those requirements or the real programmatic performance of the JSF team."

Here are the facts:

-- The F-35 is a racehorse, not a "dog," as Wheeler/Sprey suggest. In stealth combat configuration, the F-35 aerodynamically outperforms all other combat-configured 4th generation aircraft in top-end speed, loiter, subsonic acceleration and combat radius. This allows unprecedented "see/shoot first" and combat radius advantages.

-- The high thrust-to-weight ratios of the lightweight fighter program Wheeler/Sprey recall from 30 years ago did not take into consideration combat-range fuel, sensors or armament, which dramatically alter wing loading, thrust-to-weight ratios and maneuverability. We do consider all of this in today's fighters.

-- The F-35 has the most powerful engine ever installed in a fighter, with thrust equivalent to both engines today in Eurofighter or F/A-18 aircraft. The conventional version of the F-35 has 9g capability and matches the turn rates of the F-16 and F/A-18. More importantly, in a combat load, with all fuel, targeting sensor pods and weapons carried internally, the F-35's aerodynamic performance far exceeds all legacy aircraft equipped with a similar capability.

-- When the threat situation diminishes so that it is safe for legacy aircraft to participate in the fight, the F-35 can also carry ordnance on six external wing stations in addition to its four internal stations.

Other important facts:

-- External weapon clearance is part of the current F-35 test program.

-- The government has already proven that no other aircraft can survive against the 5th generation stealth that only the F-22 and the F-35 possess; it is impossible to add this stealth to fourth-generation fighters.

-- The F-35's data collection, integration and information sharing capabilities will transform the battlespace of the future and will redefine the close air support mission. The F-35 is specifically

designed to take advantage of lessons learned from the F-117 stealth aircraft. Unlike the F-117, the ability to share tactically important information is built into the F-35, along with stealth.

-- F-35 is developing, testing, and fielding mature software years ahead of legacy programs, further reducing development risk. The F-35's advanced software, already flying on two test aircraft with remarkable stability, is demonstrating the advantages of developing highly-common, tri-variant aircraft. The software developed span the entire aircraft and support systems including the aircraft itself, logistics systems, flight and maintenance trainers, maintenance information system and flight-test instrumentation.

-- Rather than relying exclusively on flight testing, the F-35 is retiring development risk through the most comprehensive laboratories, sensor test beds, and integrated full-fusion flying test bed ever created for an aircraft program. Representing only 25% of our verification plans, still the F-35's flight test program is comparable in hours to the combined flight test programs of the three primary U.S. aircraft it will replace.

-- The F-35 is one aircraft program designed to replace many different types of aircraft around the world -- F-16, F/A-18, F-117, A-10, AV-8B, Sea Harrier, GR.7, F-111 and Tornado -- flown by 14 air forces.

-- In addition to 19 developmental test aircraft, the F-35 is producing 20 fully instrumented, production-configured operational test aircraft. No program in history has employed this many test vehicles.

"Simply put, advanced stealth and sensor fusion allow the F-35 pilot to see, target and destroy the adversary and strategic targets in a very high surface-to-air threat scenario, and deal with air threats intent on denying access -- all before the F-35 is ever detected, then return safely to do it again," said Burbage.

The F-35 is a supersonic, multi-role, 5th generation stealth fighter. Three F-35 variants derived from a common design, developed together and using the same sustainment infrastructure worldwide will replace at least 13 types of aircraft for 11 nations initially, making the Lightning II the most cost-effective fighter program in history. Two F-35s have entered flight test, two are in ground test, and 17 are in various stages of assembly, including the first two production-model jets scheduled for delivery to the U.S. Air Force in 2010.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2007 sales of $41.9 billion.

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