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## INTERVIEW

# 1st Fighter Wing, Langley AFB, F-22 Ops

OPERATING THE F-22 RAPTOR - A 1ST FIGHTER WING USAF PERSPECTIVE

Dr Carlo Kopp

THE 1ST FIGHTER WING BASED AT LANGLEY AFB IN VIRGINIA is an elite fighter unit that has played a major role in most recent air campaigns. This unit was chosen to be the first to transition from the legacy F-15C introduced during the 1980s to the new Lockheed Martin F-22A Raptor. The 1st FW has flown its new F-22As in several major exercises including Combat Hammer, Northern Edge and Red Flag 2007, covering a diverse range of roles and missions. Earlier this year the Wing deployed a squadron for several months to Kadena AFB in Okinawa, the first overseas deployment of the Raptor. Roles and missions covered in exercises and deployments include air dominance, the best known capability of the F-22A, but also air strikes at heavily defended targets using JDAM satellite aided bombs, lethal suppression of hostile air defence systems using the JDAM, and extending the coverage of ISR platforms such as the E-3C AWACS and RC-135/W Rivet Joint in heavily contested airspace.

The recent decision to spend an additional \$5 billion with Lockheed Martin for an additional 60 F-22A Raptors to be built from 2008 at a rate of 20 per year through to 2011 brings the total number of F-22s ordered to 183, confirming the aircraft's future as the US Air Force's premier combat aircraft.

DefenceToday is pleased to provide readers this exclusive interview with Lieutenant Colonel Kevin Fesler of the 94th Fighter Squadron, 1st Fighter Wing, Langley AFB Virginia.



**DefenceToday:** As the first operational unit flying the F-22A, the 1st Fighter Wing has been very visible in exercises and public displays of the aircraft. What is the greatest difference from a pilot's perspective against the legacy F-15Cs the unit flew previously? To what extent do stealth, supercruise and the sensor suite alter the tactical equation?

**LtCol Fesler:** There is simply no comparison. While the F-15 is an incredible and proven platform, the F-22 is a fifth-generation aircraft and a quantum leap in capability the Air Force can bring to the fight. This transformational combat aircraft is effectively invisible to threats, it cruises at supersonic speeds, is highly manoeuvrable, and provides the joint force an unprecedented level of integrated situational awareness.

With its unique and dominant capabilities of stealth, supercruise, agile manoeuvrability and highly integrated avionics, the Raptor can:

- Penetrate the growing and deadly high-threat environment of surface-to-air missiles, day or night, to strike critical targets and enable follow-on joint forces [to attack in a lower threat environment]
- Provide unique cruise missile defense options for theater commanders and homeland defense
- Defeat any adversary aircraft currently flying or under development
- Help secure battlespace awareness with an exponentially increased ability to find, fix, track, assess and engage targets

- Provide critical information to other aircraft and ground forces
- The F-22 has highly integrated avionics, which provide the pilot an unprecedented situational awareness with a single battlefield display.
- The F-22 requires less maintenance time and personnel to maintain than the F-15, which equates to more time spent dominating the skies and a mobility footprint that is much smaller. It gets to the fight, light and lethal and can stay there!

**DT:** In 2005 the 1st FW contributed F-22s to the Combat Hammer exercise flown out of Hill AFB in Utah. Reports indicated the aircraft performed well in GBU-32 JDAM deliveries. How effective did the F-22 prove to be, both in terms of its ability to hit targets, and in its ability to stand off from terminal defences using supersonic JDAM deliveries?

**LtCol Fesler:** To date, the F-22 employing GBU-32 JDAMs has a 100 per cent hit rate. When you combine the JDAM's precision with the speed of the F-22, the stand-off ranges are impressive. Supersonic releases allow the F-22 to stay outside surface-to-air threats and increase survivability, while bringing JDAM proven lethality to the fight.

**DT:** The 2006 Northern Edge exercise produced a lot of visible media coverage, especially in terms of unprecedented kill ratios chalked up by 1st FW F-22s, flown against a range of adversary aircraft. How was this achieved?

**LtCol Fesler:** The F-22A Raptor reaps the benefits of decades of stealth



The F-22A Raptor is now the premier US multirole fighter, being used for air dominance, precision strike and ISR roles. Planned upgrades will see further enhancement of these capabilities. from left: Plan view of the 'Raptor'; F-22A delivers an HE bomb from internal bomb bay; F-22A Raptors of the 1st Fighter Wing USAF (USAF)

research and development and field experience. Designed as 21st-Century combat systems, fifth-generation fighters combine stealth, manoeuvrability and integrated avionics to ensure multi-role, joint air dominance. Providing more complete battlefield awareness, the capability improves net-centric operations, non-traditional intelligence, surveillance and reconnaissance, persistence, flexibility and readiness. The only systems with the capability to operate against all potential threats and ensure no safe haven for our would-be enemies is the Raptor.

**DT:** One of the public comments which emerged from Northern Edge was the value of the F-22 in extending the ISR coverage footprint provided by the AWACS and Rivet Joint. How effective were these tactics?

**LtCol Fesler:** Because of its stealth technology, the Raptor has been able to venture into the battlespace unnoticed and help support the AWACS and Rivet Joint during exercises such as Northern Edge. The F-22s communicated Red Force surface and air threat information to the entire OCA package. The SEAD assets were then able to use that information fused with information from other sources to target the threats. In addition to its primary role as an air dominance fighter, this is just one of the many ancillary capabilities the Raptor brings to the fight.

**DT:** The February 2007 Red Flag exercise was the first during which F-22s were flown together with Allied aircraft in simulated offensive profiles. What types of missions and profiles were flown by the 1st FW in Red Flag, and how effective did the F-22 prove to be as a fighter escort, and deep strike asset?



**LtCol Fesler:** The F-22 was tasked with defensive counter-air (DCA), destruction of enemy air defenses (DEAD), dynamic targeting (DT), and offensive counter-air (OCA) missions during Red Flag. The Raptor allows the pilot to have complete battle-space awareness from both a defensive and offensive perspective. The stealth characteristics allow the F-22 to be very effective as a deep strike asset, especially in a denied environment. The integrated avionics, coupled with overwhelming situational awareness lend themselves to the fighter escort mission.

**DT:** A US journal recently quoted an F-15C pilot flying in Red Flag who complained about being able to eyeball the F-22 but not being able to lock his weapons for a shot. How does the 1st FW see the balance between BVR and close-in combat in future air campaigns?

**LtCol Fesler:** I will not speak for the 1 FW, but the F-22 will dominate in any environment, WVR or BVR. We are not really interested in balance between our capabilities and that of adversaries; we are interested in overwhelming dominance. The aerodynamic performance of the aircraft makes it a formidable opponent in a close-in fight. The combination of the aircraft performance with our robust training creates an unequalled force in all arenas. With respect to BVR, it is hard to kill what you can't see. The F-22 will have first look and first shot opportunity against all threats.

**DT:** Supersonic cruise is a new capability provided by the F-22. To what extent has it altered tactics, planning and combat persistence?

**LtCol Fesler:** Supercruise is another tool in the kit to execute our tactics. The Raptor nation has worked hard to develop tactics, techniques and procedures to leverage the unique capabilities of the platform. The specific planning and combat persistence of the F-22 has been developed and optimized over the course of every exercise and deployment we conduct. Some tactics from the proven platforms are appropriate for the F-22 and others need to be replaced to accommodate the enhanced performance of the aircraft.

**DT:** Current US Air Force planning sees the Holloman AFB F-117A Nighthawk wing being re-equipped with F-22s later in the decade. From a survivability, accuracy and flexibility perspective, how do these two aircraft compare?

**LtCol Fesler:** Flexibility has seen the largest margin of improvement based on the technological advances in the years since the F-117 was developed. The flexibility, freedom of manoeuvre and integrated avionics in the F-22 increase survivability. The F-22 can fight its way into the target area with BVR weapons, which is not an option for the F-117.

**DT:** The F-22 Block 20 configuration is to introduce further enhancements such as additional radar air to surface modes, and the GBU-39/B Small Diameter Bomb. How do you see these future capabilities impacting the aircraft's roles and missions?

**LtCol Fesler:** The ability to fix a target's location with accuracy and employ ordnance from the same aircraft reduces the time-line to put bombs on target. The joint warfighter will benefit from the increased capability with quicker suppression of enemy air defenses, for example. The SDB will increase the stand-off ranges and provide additional bombs for employment on the respective target set.

**DT:** How does the F-22's reliability and maintainability on the flightline compare against the legacy F-15C, accepting that the 1st FW has borne the brunt of this learning curve in an operational environment?

**LtCol Fesler:** It is hard to compare the two platforms, as the Raptor program is still in its early stages. Once the program has matured, we expect to see continued reduced maintenance time required per flight hour (as compared to the F-15C), giving it a lighter footprint and making it an easily deployable aircraft.

**DT:** When is the 1st FW expected to complete its transition from the F-15C, and achieve full operational capability across all three squadrons?

**LtCol Fesler:** For the foreseeable future, the 1st FW will continue to have two Raptor squadrons and one F-15 squadron. Both Raptor squadrons have their full complement of 20 F-22s and while no official FOC classification has been determined, Raptors have and continue to support real world deployments both CONUS and OCONUS.

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