Flying the F-22 Raptor

Regional Air Power
New threats, new weaponry

Chief of Air Force
Future of Air Power

DCP
Requirement...outcome
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, 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 multrole 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 operational environments.

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, Raptor pilots and other NATO forces continue to support real world deployments both CONUS and OCONUS.

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