

Meet



F-22 operations at Langley mark a transition away from the F-15 and toward a new heavyweight champ.

Two F-22 Raptors of the 27th FS tuck in behind a tanker on a mission off the Virginia coastline. The F-22 on December 15 formally achieved initial operational capability, meaning the 27th was certified as having enough aircraft, qualified pilots and ground crews, and support gear to go to war.

the New Boss



Photography by Rick Llinares

With the arrival of the F-22s, USAF's 1st Fighter Wing at Langley AFB, Va., has an embarrassment of riches—two world-class air-combat machines. The F-15 (right) has been a fixture on the ramp at Langley for nearly 30 years and will continue to operate from the base until enough F-22s are delivered to thoroughly replace all three of the 1st FW's squadrons of aircraft. The F-15's mission has always been air-to-air combat, but the arrival of the Raptor signals a possible broadening of the Eagle's repertoire to include more air-to-ground operations.



Photos by Rick Linares



The Eagle (two of which are shown at left) is regarded as the heavyweight champion of the world in air combat, having achieved more than 100 air-to-air victories without a single loss. It has only consistently been defeated by one opponent: the Raptor, in mock combat. In operational tests, the F-22 routinely swept the skies of Eagles, usually outnumbered two-to-one.

While similar to the F-15 in size and shape, the F-22 sits on shorter, stubbier landing gear, shown at right. This is on purpose; the aircraft's closeness to the ground leaves more panels and equipment available to ground crews that formerly used ladders or awkward postures when performing maintenance. The Raptor requires fewer maintainers to keep it in tune and fewer transports to ferry its gear on a deployment.





The Raptor's gold-tinted canopy (left) deflects radar energy, reducing its radar signature. It usually flies "clean" —meaning without external stores. The Air Force may employ external fuel tanks for ferry operations or, in a future war, after air superiority has been achieved.

Below, TSgt. Dave Brault consults a laptop-like device that holds electronic versions of the F-22's technical manuals. The aircraft's self-diagnostic system will be capable of calling ahead to home base and, on its own, informing maintenance that it needs a check or spare parts.



At right, the 1st FW's F-15 "wing bird"—carrying the colors of the wing, usually with the name of its commander painted on the side—comes in for a landing at Langley. At far right, an F-22 ready for operational service stands ready for its next mission.



The 27th Fighter Squadron at Langley is the oldest fighter squadron in the Air Force, so it is fitting that it operates the very best machine in the service inventory. The unit began flying cloth-covered Spads and Sopwith Camels in 1917 and was the first to acquire the Eagle in 1976.

The only drawback to the Raptor's low-slung stance is that pilots have to crouch lower to check munitions inside the weapons bays. The Raptor has four: two belly bays that can accommodate up to six radar-guided Advanced Medium-Range Air-to-Air Missiles or four 1,000-pound Joint Direct Attack Munitions and two cheek bays reserved for air-to-air Sidewinder heat-seeking missiles.



Photos by Rick Linares



At left, two Langley F-15s are shown on an over-ocean training mission. The Raptor cockpit is about the same size as the much-admired F-15 "front office" and offers a comparable view of the surrounding airspace. Unlike the center-stick Eagle, the F-22 has a sidestick controller, put there to make room for a display between the pilot's knees.

The F-22's shape (below) is pure functionality. Gray leading edges on the radome, wings, intakes, and stabilizers indicate the presence of radar-absorbent material. The mottled camouflage disrupts infrared detectors and prevents them from getting an accurate lock on the aircraft's shape. However, since the Raptor will be typically operating above 50,000 feet, few will ever see a Raptor's colors in combat.



Langley houses its Raptors in immaculate hangars (above), where they are well-tended, but the aircraft was designed for deployment and will have no trouble spending days and nights in hostile weather.





At left, SSgt. Reubien Flores performs routine maintenance on a Raptor's cockpit. One of Langley's Raptors is a nonflying maintenance trainer. Langley is slated to have about 140 maintenance people designated to work on the F-22.



Plans call for Langley to have 26 F-22s with 32 pilots in the wing. The Raptor will be able to fly more missions in a day than the F-15 can, and the aircraft will be assigned a higher crew ratio than the Eagle. About two Raptors are arriving monthly.



While some of USAF's best young pilots will fly the Raptor, other weapon systems such as the A-10, F-15, and F-16 will be in service for decades to come. Those communities need their "fast burners" as well. The Langley unit also didn't want the blowback from units losing too many pilots to the F-22. At left is a four-ship of F-15s consisting of the flagship Eagle for the wing and its three squadrons.

A pilot's first flight in the F-22 is also his first solo: There are no two-seaters. However, Raptor simulators are of such high fidelity that few pilots can feel a difference between the sim experience and the real thing. Pilots report being "comfortable" on that first flight—their biggest worry being that they will cause a scratch on one of the Air Force's most valuable aircraft.



It will probably be at least another 18 months before the wing allows Raptors to fly at air shows. With so few available, they will be busy with more pressing duties. At left, two factory-fresh Langley F-22s maneuver near Hampton Roads, Va. In actual combat, a two-ship of Raptors would be separated by many miles and operate in virtual radio silence.



Above, a Raptor prepares to touch down after a training sortie.

At right, air-to-air missiles await loading. The F-15 and the F-22 have their weapons in common; both carry AMRAAM, Sidewinder, and a cannon. However, Raptor pilots readily admit that if they ever resort to using the gun—intended for close-in fights—they will have done a poor job of exploiting the F-22's long-range capabilities.





At left, Capt. Stephen Da Suta checks six before executing a turn in his Eagle. A huge difference between flying the F-15 and the F-22 is that the various sensors and displays on the Eagle must be correlated inside the pilot's head, even as he maneuvers the aircraft, while the Raptor does that work for the pilot, allowing him to spend his time employing the aircraft to its full advantage. Below, a four-ship of Eagles heads for home.



At right, an F-22 flashes an AIM-9M Sidewinder in the cheek weapons bay. The full capabilities of the F-22 go well beyond dogfighting and ground attack. The aircraft will be a critical node in future reconnaissance and command and control of the battlefield, as it will be able to operate deep in enemy territory, surreptitiously feeding data to the entire network of US forces.



The Raptor has been a long time coming. The YF-22 prototype flew in 1990 and development has stretched 15 years through countless reviews, funding cuts, and delays. Without question, the end result has been worth the wait. ■