



LOCKHEED MARTIN 
We never forget who we're working for®

F-22 Raptor 5TH Generation Fighter
Dominating the Skies. Overwhelming the Threat.



Defining the 5TH Generation Fighter

The F-22 calls for an entirely new way of thinking about fighter capabilities. By integrating a wealth of different features – from stealth to supercruise – this fighter redefines the meaning of air dominance. It brings a quantum leap in lethality and survivability. It offers sharply enhanced situational awareness capability through a more reliable, highly maintainable aircraft. These attributes can only be realized through a design created from the ground up to develop the world's most capable fighter.

Advanced Stealth. With embedded antennas, integrated sensors, aligned edges, internal weapons and fuel, and special coatings and materials, the Raptor is able to pick and choose where and when it engages the threat while remaining virtually undetected by enemy air defense systems.

Supercruise Speed. The F-22 is able to achieve and maintain speeds in excess of Mach 1.5 for extended periods of time without the use of afterburners. This allows the F-22 to respond to distant, time-critical targets, performing the mission faster with less exposure and risk. Survivability and lethality are both enhanced because of its extreme speed.

Extreme Fighter Agility. Superior aerodynamic performance derived from the Raptor's blended mold lines, large control surfaces and thrust-vectoring nozzles allows the F-22 to outmaneuver any threat through faster acceleration and razor-sharp turns.

Information Fusion. Advanced integrated avionics, processing data from a variety of onboard and net-enabled, off-board sensors, provide the F-22 pilot with a seamless real-time, intuitive, 360-degree display of the battlespace, which allows the pilot to enter the fight on his own terms.

Joint Force Enabler. The F-22 Raptor as a key enabler assures future air dominance in any threat environment. This in turn ensures safe and effective joint and coalition forces operations – starting on day one of a conflict – even amid the most sophisticated and numerically superior anti-access enemy threats.



GENERATION FIGHTERS



The F-22 gives pilots the best battlefield situational awareness of any warfighter in history.



Outstanding Sustainment for an Outstanding Fighter

A fast-changing world requires a new way of thinking about aircraft support. That's why Lockheed Martin is committed to taking ownership of total support for the F-22 by providing higher readiness, more sorties, faster response and lower life-cycle cost to our customer. Our tightly integrated design and support teams provide the fastest, most effective link between the F-22 operator requirements and delivered capability.

This is achieved by:

Performance-Based Logistics (PBL). This is a long-term arrangement under which the contractor receives incentives to meet performance requirements. The result: greater reliability and readiness rates. The concept has already been proven with the F-117 stealth fighter and is being rapidly expanded through all of the company's products, from the F-16 to the F-35 Lightning II – and the F-22 Raptor.

Partnership of Suppliers. The supplier network ensures the F-22 receives efficient support, anywhere in the world. This includes aircraft operation, modernized supply chain management, inspections, simulator facilities, maintenance and field support.

The Lockheed Martin-led team shares our customer's objectives and is dedicated to a

collaborative partnership with the U.S. Air Force to accomplish a successful transition to long-term PBL.

Key maintenance enhancements include:

- A totally electronic diagnostic system provides a paperless approach for all F-22 troubleshooting and maintenance; information is downloaded to a portable maintenance aid (PMA) directly from the aircraft.
- The Integrated Maintenance Information System and Diagnostics and Health Management are integrated to indicate to the maintainer specific actions required to rapidly repair anomalies.
- The Pratt & Whitney F119 engines are designed to allow standard flight line maintenance using just six common hand tools available at commercial hardware stores.
- Strategically placed low-observable access panels, along with access points in the landing gear wells and weapons bays, make the Raptor easier to arm, fuel and maintain while avoiding the need to disturb the F-22's low-observable coatings.



Transformational Leap

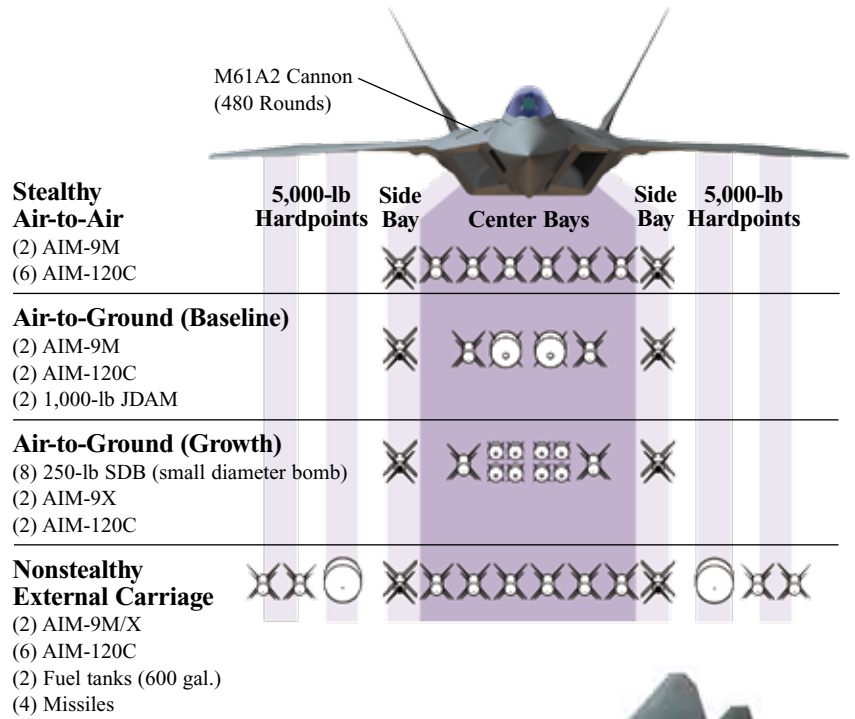
The F-22 is leading U.S. Air Force transformation efforts. Its ability to penetrate anti-access airspace while finding, tracking and targeting enemy air and ground-based threats will ensure ease of maneuver and freedom from attack for all joint forces.

The F-22's unique combination of advanced stealth, supercruise, maneuverability and integrated avionics will lead the initial "kick down the door" force, enabling 24-hour stealth operations in addition to freedom of movement for all follow-on forces – fully leveraging our nation's technological advantages.

The F-22 gives U.S. forces and allies an advantage that will endure well into the future. By incorporating revolutionary advances in technology, the F-22 is ready to dominate any and all adversaries from the outset of any conflict. This capability provides a critical edge to joint force commanders. Rapid achievement of air dominance allows maximum flexibility for U.S. and coalition forces.

Weapons Capability

Current Air-to-Air and Air-to-Ground Armament



F-22 Raptor

Length 62 ft / 18.90 m
 Height 16.67 ft / 5.08 m
 Wingspan 44.5 ft / 13.56 m
 Wing area 840 ft² / 78.04 m²
 Horizontal tail span 29 ft / 8.84 m
 Engine thrust class 35,000 lb / 15,876 kg



Assures Future Air Dominance Like No Fighter in History

Advanced stealth. Information fusion. Supercruise. Fighter agility. Unsurpassed situational awareness. New standards of reliability and maintainability. Net-enabled operations. Lethal, survivable, sustainable and deployable – one of only two 5TH generation fighters in the world. And the only 5TH generation fighter in service today.

Welcome to the era of the F-22 Raptor – the only fighter capable of simultaneously conducting air-to-air and air-to-ground combat missions with near impunity. This is accomplished with a never-before-seen standard of survivability even while facing large numbers of sophisticated airborne and ground-based threats.

The Raptor is operational today. Two squadrons of F-22s are assigned to Air Combat Command's 1st Fighter Wing at Langley AFB, Va. Raptor pilots and maintainers train at Tyndall AFB, Fla., while operational testing is conducted at Edwards AFB, Calif., and Nellis AFB, Nev. New F-22s continue to roll from the production line and will soon operate out of Elmendorf AFB, Alaska, Holloman AFB, N.M., and Hickam AFB, Hawaii.

2006 Collier Trophy Award Winner

The National Aeronautic Association named the F-22 Raptor Team winner of the 2006 Robert J. Collier Trophy. Established in 1911, the coveted Collier Trophy is America's most prestigious award for aeronautical and space development, honoring those who make significant strides in the advancement of aviation.

The Raptor Team's Collier Trophy award is a testament of the performance, safety and efficiency the fighter provides to the United States and world aviation through its development, testing and manufacturing phases. The main focus of the award was the Raptor's overwhelming performance in the 2006 Northern Edge joint military exercise. The inescapable conclusion was true: In the history of military aviation, the Raptor is a fighter like no other.



The Power of Partnership

Lockheed Martin is the program's principal systems integrator, in partnership with Boeing and Pratt & Whitney. Nearly 1,000 subcontractors and suppliers in 42 states manufacture parts and subsystems for the Raptor. Principal aircraft production activities take place at Lockheed Martin facilities in Marietta, Ga., Fort Worth, Texas, and Palmdale, Calif., as well as at Boeing's plant in Seattle, Wash. Final assembly and initial flight testing of the Raptor occur at the Marietta factory, production headquarters for the F-22 program's contractor team. The Raptor's low-observable control surface edges, antennas and radomes are built in Palmdale, while its mid fuselage is built in Fort Worth. Boeing builds the aircraft's aft fuselage and wings. Two F119 Pratt & Whitney engines power the F-22. The F119, the world's most advanced combat aircraft engine in production, features a unique thrust-vectoring nozzle, integrated stealth characteristics and the capability to supercruise, or achieve Mach 1.5+ speeds, without the use of afterburners. The engines are built by Pratt & Whitney in Middletown, Conn., with key components from Columbus, Ga., and Berwick, Maine.



GENERATION FIGHTERS

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