



F-35 Lightning II

Northrop Grumman is a principal member of the F-35 Lightning II industry team led by Lockheed Martin that is developing, producing, and sustaining three variants of this fifth-generation fighter aircraft. In addition to manufacturing the center fuselages for each F-35 variant, Northrop Grumman plays a critical role in maintaining readiness and mission effectiveness through global sustainment and modernization efforts.

INTEGRATED ASSEMBLY LINE (IAL)

- The Northrop Grumman IAL in Palmdale, California is one of the most advanced manufacturing facilities ever assembled to produce military aircraft.
- The facility uses automated technology that couples the strengths of humans and machines on the F-35 production line.
- The IAL is comprised of over 3,000 parts, scalable to 115 assembly positions and completes one center fuselage in 30 hours.
- During assembly, the Northrop Grumman team puts more than 10,000 parts together in the IAL to build the center fuselage of an F-35.

PHYSICAL AIRFRAME

- **Center Fuselage:** Northrop Grumman's Palmdale IAL produces the center fuselage for all three variants – a significant portion of the aircraft's airframe, internal weapons bay, and internal fuel capacity.
- **Airframe Technologies and Skins:** Northrop Grumman leans on six decades of composites manufacturing experience and advanced fiber placement technology to fabricate the upper wing skins, lower wing skins, engine nacelle, engine strap, access panels, bullnose, blade seal, and vertical seal components for all variants.

MISSION SYSTEMS

- **AN/APG-81 Active Electronically Scanned Array (AESA) Radar:** The Northrop Grumman AN/APG-81 AESA fire control radar is the latest and most

capable in the world serving as the cornerstone of the sensor suite for unparalleled situational awareness.

- **Electro-Optical Distributed Aperture System (EODAS):** Northrop Grumman's EODAS provides the warfighter with a protective 360-degree sphere around the aircraft.
- **AN/ASQ-242 Communications, Navigation and Identification System (CNI):** The CNI avionics suite, designed and developed by Northrop Grumman for the F-35, provides dozens of integrated functions that arm the pilot with multi-mission capabilities to adapt to emerging needs for seamless transition from one mission phase to the next.
- **Vehicle Systems:** Approximately one-third of the F-35's mission systems software lines of code are produced by Northrop Grumman software engineers for offboard communications, mission planning and execution systems, prognostic health management and weapons integration. There are 24 million lines of software code in the F-35 total.

ARMAMENTS

- **The Advanced Anti-Radiation Guided Missile – Extended Range (AARGM-ER):** Northrop Grumman's AARGM-ER is a supersonic, air-launched tactical missile system, the most advanced counter-air-defense system for today's most modern surface-to-air threats.
- **Stand-in Attack Weapon (SiAW):** The SiAW missile system enables disruption of an Anti-Access/Area Denial (A2/AD) environment through rapid, lethal engagement of relocatable targets.

GLOBAL SUSTAINMENT AND MODERNIZATION

- **Pilot and Maintenance Training Courseware:** Northrop Grumman provides development and sustainment of F-35 training courseware that addresses all aspects of pilot and unit-level maintenance, including mission-planning system operations and maintainer use of portable maintenance aids.
- **Field Support:** Northrop Grumman provides Field Support Engineers (FSEs) and Contractor Logistics Support (CLS) personnel at F-35 operational sites. They deliver tip-to-tail expertise, including sustainable low-observable support, to ensure mission readiness.
- **Modification Management:** Northrop Grumman field teams perform the modification of U.S. Navy and U.S. Marine Corps F-35 aircraft at operational sites, and the company supports Lockheed Martin in the overall planning and coordination of F-35 upgrades.
- **Product Support Integration:** Northrop Grumman collaborates with the Joint Program Office and Lockheed Martin in managing the F-35 through sustainment analyses, modeling & simulation, and support optimization.
- **Component Repair:** Northrop Grumman is establishing component repair collaboration and ventures with F-35 customers. Additionally, Northrop Grumman is enabling depot activations for its products.

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