



## **F-35 Lightning II Program Status and Fast Facts**

May 12, 2017

### **Highlights of the Last Three Months**

- USAF announces F-35A participation at 2017 Paris Air Show. **(May 6)**
- The first Italian built F-35B rolls out of Final Assembly and Checkout Facility in Cameri, Italy. **(May 5)**
- USAF F-35As from 34<sup>th</sup> Fighter Squadron at Hill Air Force Base deploy to Royal Air Force Lakenheath, England, for exercises throughout Europe including deployments to Estonia and Bulgaria. **(April/May)**
- Three F-35I “Adirs” are delivered to the Israeli Air Force at Nevatim Air Base, Israel, joining two other F-35Is which arrived in December 2016. **(April 24)**
- F-35s from Eglin Air Force Base, Florida, participate in 2017 Atlantic Trident Exercise along with F-22s, Eurofighter Typhoons and Dassault Rafales at Joint Base Langley-Eustis, Virginia. **(April 11)**
- F-35s with the Integrated Test Forces at NAS Patuxent River, Maryland, and Edwards Air Force Base, California, successfully conduct the first firing trials of the MBDA Advanced Short Range Air-to-Air Missile (ASRAAM); marking the first time a British-designed missile has been fired from the F-35, and the first time any non-US missile has been fired from the aircraft. **(March 15)**
- Two Australian F-35As deploy from Luke Air Force Base (AFB), Arizona, to make international debut at Avalon Air Show in Australia and successfully return home. **(Feb. 23-March 11)**
- F-35As from Hill AFB, Utah, participate for the first time in USAF Red Flag 17-1 at Nellis AFB, Nevada. The F-35s faced the most advanced aggressor aircraft and simulated threats available, recording an impressive kill-ratio “north of 20-1” and better than a 90 percent aircraft availability. **(Feb. 20)**
- Lockheed Martin delivers the 200th F-35 Center Wing Assembly built in Marietta, Georgia, to the Fort Worth, Texas, F-35 production line. **(Feb. 13)**
- Lt. Col. Nakano, Japan Air Self Defense Force F-35A pilot, completes a solo sortie at Luke AFB, Arizona, representing a historic milestone for the JASDF and 944th Fighter Wing. **(Feb. 11)**
- U.S. Government announces lowest priced F-35s in program history with the finalization of the LRIP 10 contract for 90 aircraft. The price of an F-35A, which encompasses 85 percent of the program, is now \$94.6 million, which includes air vehicle, engine and fee. **(Feb. 5)**
- F-35s have flown more than 90,000 cumulative flight hours since December 2006.

### **F-35 LRIP Deliveries**

- 9 jets delivered in 2011
- 29 jets delivered in 2012
- 35 jets delivered in 2013
- 36 jets delivered in 2014
- 45 jets delivered in 2015
- 46 jets delivered in 2016

### **Program of Record**

USAF	1,763 F-35As
DoN (USN/USMC)	680 F-35B/Cs
U.K. RAF/RN	138 F-35s
Italy	60 F-35As/30 F-35Bs
Netherlands	37 F-35As
Turkey	100 F-35As
Australia	100 F-35As
Norway	52 F-35As
Denmark	27 F-35As
Canada	65 F-35As
Israel	50 F-35As
Japan	42 F-35As
S. Korea	40 F-35As

**Current as of May 12, 2017**

*Produced by Lockheed Martin F-35 Communications Team*

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## **Funding**

- Full funding approved for LRIP lot 10 (90 aircraft)
- Full funding approved for LRIP lot 9 (57 aircraft)
- Full funding approved for LRIP lot 8 (43 aircraft)
- Full funding approved for LRIP lot 7 (35 aircraft)
- Full funding approved for LRIP lot 6 (36 aircraft)
- Full funding approved for LRIP lot 5 (32 aircraft)
- Full funding approved for LRIP lot 4 (32 aircraft)
- Full funding approved for LRIP lot 3 (17 aircraft)
- Full funding approved for LRIP lot 2 (12 aircraft)
- Full funding approved for LRIP lot 1 (2 aircraft)

## **Cost**

- In 2014, the DoD announced an industry-led effort called “Blueprint for Affordability” and expanded the effort in 2016 from a \$1.8 billion to a \$5 billion savings initiative. Also in 2016, it announced the Sustainment Cost Reduction Initiative to save an additional \$1 billion in savings through 2022. The goal of these programs is to drive the cost of an F-35A to less than \$85 million in 2019, where it will be equivalent to, or less, than any 4th-generation fighter.
- The LRIP 10 contract reflects an average airframe unit cost approximately 8 percent lower than the LRIP 9 contract signed in 2016 and an approximate 62 percent reduction since LRIP 1.
- LRIP 10 Aircraft Costs (including jet, engine and fee):
  - 76 F-35As CTOL - \$94.6 million (7.3% reduction from Lot 9)
  - 12 F-35B STOVL - \$122.8 million (6.7% reduction from Lot 9)
  - 2 F-35C CV - \$121.8 million (7.9% reduction from Lot 9)

## **F-35 Quantities by Variant and Country for LRIP 1 – 10**

### **LRIP 1 (2 Total) - 2 U.S. / 0 International**

#### United States

- 2 F-35A CTOL for the U.S. Air Force

### **LRIP 2 (12 Total) - 12 U.S. / 0 International**

#### United States

- 6 F-35A CTOL for the U.S. Air Force
- 6 F-35B STOVL for the U.S. Marine Corps

### **LRIP 3 (17 Total) - 14 U.S. / 3 International**

#### United States

- 7 F-35A CTOL for the U.S. Air Force
- 7 F-35B STOVL for the U.S. Marine Corps

#### International

- 1 F-35A CTOL for the Netherlands
- 2 F-35B STOVL for U.K.

### **LRIP 4 (32 Total) - 30 U.S. / 2 International**

#### United States

- 10 F-35A CTOL for the U.S. Air Force
- 16 F-35B STOVL for the U.S. Marine Corps
- 4 F-35C CV for the U.S. Navy

#### International

- 1 F-35A CTOL for the Netherlands
- 1 F-35B STOVL for the U.K.

### **LRIP 5 (32 Total) - 32 U.S. / 0 International**

#### United States

- 22 F-35A CTOL for the U.S. Air Force
- 3 F-35B STOVL for the U.S. Marine Corps
- 7 F-35C CV for the U.S. Navy

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**LRIP 6 (36 Total) - 31 U.S. / 5 International**

United States

- 18 F-35A CTOL for the U.S. Air Force
- 6 F-35B STOVL for the U.S. Marine Corps
- 7 F-35C CV for the U.S. Navy

International

- 3 F-35A CTOL for Italy
- 2 F-35A CTOL for Australia

**LRIP 7 (35 Total) - 29 U.S. / 6 International**

United States

- 19 F-35A CTOL for the U.S. Air Force
- 6 F-35B STOVL for the U.S. Marine Corps
- 4 F-35C CV for the U.S. Navy

International

- 3 F-35A CTOL for Italy
- 2 F-35A CTOL for Norway
- 1 F-35B STOVL for the U.K.

**LRIP 8 (43 Total) - 29 U.S. / 14 International (4 U.K., 2 Norway, 2 Italy, 4 Japan, 2 Israel)**

United States

- 19 F-35A CTOL for the U.S. Air Force
- 6 F-35B for the U.S. Marine Corps
- 4 F-35C for the U.S. Navy

International

- 4 F-35B STOV for U.K.
- 2 F-35A CTOL for Norway
- 2 F-35A CTOL for Italy
- 4 F-35A CTOL for Japan
- 2 F-35A CTOL for Israel

**LRIP 9 (57 Total) - 34 U.S. / 23 International (6 UK, 6 Norway, 2 Italy, 2 Japan, 7 Israel)**

United States

- 26 F-35A CTOL for the U.S. Air Force
- 6 F-35B for the U.S. Marine Corps
- 2 F-35C for the U.S. Navy

International

- 6 F-35B STOVL for UK
- 6 F-35A CTOL for Norway
- 1 F-35A CTOL and 1 F-35B STOVL for Italy
- 2 F-35A CTOL for Japan
- 7 F-35A CTOL for Israel

**LRIP 10 (90 Total) - 55 U.S. / 35 International (3 UK, 6 Norway, 8 Australia, 2 Turkey, 4 Japan, 6 Israel, 6 South Korea)**

United States

- 44 F-35A CTOL for the U.S. Air Force
- 9 F-35B for the U.S. Marine Corps
- 2 F-35C for the U.S. Navy

International

- 3 F-35B STOVL for UK
- 6 F-35A CTOL for Norway
- 8 F-35A CTOL for Australia
- 2 F-35A CTOL for Turkey
- 4 F-35A CTOL for Japan
- 6 F-35A CTOL for Israel
- 6 F-35A CTOL for South Korea

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## F-35 Specifications

	F-35A CTOL	F-35B STOVL	F-35C CV
<b>Length</b>	51.4 ft / 15.7 m	51.2 ft / 15.6 m	51.5 ft / 15.7 m
<b>Height</b>	14.4 ft / 4.38 m	14.3 ft / 4.36 m	14.7 ft / 4.48 m
<b>Wingspan</b>	35 ft / 10.7 m	35 ft / 10.7 m	43 ft / 13.1 m
<b>Wing area</b>	460 ft <sup>2</sup> / 42.7 m <sup>2</sup>	460 ft <sup>2</sup> / 42.7 m <sup>2</sup>	668 ft <sup>2</sup> / 62.1 m <sup>2</sup>
<b>Horizontal tail span</b>	22.5 ft / 6.86 m	21.8 ft / 6.65 m	26.3 ft / 8.02 m
<b>Weight empty</b>	29,300 lb	32,300 lb	34,800 lb
<b>Internal fuel capacity</b>	18,250 lb / 8,278 kg	13,500 lb / 6,125 kg	19,750 lb / 8,960 kg
<b>Weapons payload</b>	18,000 lb / 8,160 kg	15,000 lb / 6,800 kg	18,000 lb / 8,160 kg
<b>Standard internal weapons load</b>	<ul style="list-style-type: none"> <li>• 25 mm GAU-22/A cannon</li> <li>• Two AIM-120C air-to-air missiles</li> <li>• Two 2,000-pound GBU-31 JDAM guided bombs</li> </ul>	<ul style="list-style-type: none"> <li>• Two AIM-120C air-to-air missiles</li> <li>• Two 1,000-pound GBU-32 JDAM guided bombs</li> </ul>	<ul style="list-style-type: none"> <li>• Two AIM-120C air-to-air missiles</li> <li>• Two 2,000-pound GBU-31 JDAM guided bombs</li> </ul>
<b>Maximum weight</b>	70,000 lb class	60,000 lb class	70,000 lb class
<b>Propulsion*</b> (uninstalled thrust ratings)	F135-PW-100 40,000 lb Max. 25,000 lb Mil. Vertical N/A	F135-PW-600 40,000 lb Max. 25,000 lb Mil. 40,500 lb Vertical	F135-PW-100 40,000 lb Max. 25,000 lb Mil. Vertical N/A
<b>Speed (full internal weapons load)</b>	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)	Mach 1.6 (~1,200 mph)
<b>Combat radius (internal fuel)</b>	>590 nm / 1,093 km	>450 nm / 833 km	>600 n.mi / 1,100 km
<b>Range (internal fuel)</b>	>1,200 nm / 2,200 km	>900 nm / 1,667 km	>1,200 n.mi / 2,200 km
<b>Max g-rating</b>	9.0	7.0	7.5

\*Maximum Power (Max) = with afterburner; Military Power (Mil) = without afterburner; Vertical = without afterburner

## Program Highlights

- **2011** – The USAF accepted its first production-model F-35. F-35 successfully completed static structural testing. BF-2 successfully executed a vertical landing on the deck of the USS WASP. AF-1 achieved the maximum design limit Mach number for F-35, Mach 1.6. Japan announced that the F-35 has been selected as the country's next generation fighter.
- **2012** – The first F-35 night flight completed at Edwards AFB. An F-35A flew its first external weapons test mission. The F-35B STOVL completed in-flight refueling while configured with external weapons. Norway ordered its first F-35. The first international F-35 delivered to the U.K. Luke AFB selected for F-35A pilot training. F-35 completed more than 5,000 flight hours. AETC declared Eglin AFB ready for training.
- **2013** – First F-35C production model delivered. The first four F-35s arrived at Nellis AFB for operational testing. U.S. Marine Corps conducted first operational F-35B vertical landing. U.K. announced RAF Marham in Norfolk as home for F-35. U.S. services declare IOC dates. Australia recommitted to their program of record, which includes purchasing 100 aircraft beginning in LRIP 10. \$4.5 billion reduction in acquisition, operating and support costs reflected in the SAR 12. Cameri, Italy, FACO operations commenced in July. Netherlands officially announced F-35 win in fighter-replacement competition. F-35B completed successful ship suitability testing aboard USS Wasp. The first Netherlands F-35 pilot flew the jet. Lockheed Martin celebrated the inauguration of the 100<sup>th</sup> F-35.
- **2014** – The first F-35A with a Magellan-manufactured horizontal tail assembly successfully flew first flight. The first Alenia Aermacchi-manufactured wing components installed flew on AF-44. Luke AFB received its first of 144 F-35s. Republic of Korea selected F-35A to replace its fighter fleet. Eglin AFB began night-training program. Australia announced additional procurement of 58 jets. The Turkish Ministry of Defence announced its intent to purchase the country's first two F-35As. The final F-35A delivered to Eglin AFB, marking the 58th Fighter Squadron as the first complete U.S. Air Force F-35A squadron. The first F-35B assigned to VMFAT-501 arrived at USMC Air Station Beaufort. The USN decided to base F-35C aircraft at NAS Lemoore, California. The F-35C completed its first phase of developmental test (DT-I) aboard an aircraft carrier, three days ahead of schedule.

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- **2015** – Turkey ordered four more F-35As. RAF Lakenheath, United Kingdom, was selected as the first USAF base in Europe. Nellis AFB received its first F-35A for the USAF Weapons School. The first F-35C for the USMC arrived at Eglin AFB. Squadron Leader Andrew Jackson, Australia's first F-35A pilot, began training at Eglin AFB. Israel signed a contract to buy 14 additional F-35 fighter jets. The Dutch Parliament approved an order for the nation's first eight F-35As. The first internationally built F-35A rolled out of Italian FACO. Luke AFB officially began training pilots. The F-35B completed climatic chamber testing. Marines completed Operational Test 1 (OT-I) with six F-35Bs aboard the USS Wasp. F-35B completed Operational Readiness Inspection at MCAS Yuma ahead of USMC IOC declaration. USMC declared F-35B Initial Operational Capability with 10 jets at MCAS Yuma. The Italian Air Force completed the first fuel transfer from a KC-767A to an F-35A at Edwards AFB. Hill AFB received first two F-35As. AL-1 became the first F-35 to be manufactured and to fly outside the U.S. at the Italian FACO in Cameri, Italy. The first F-35A Norway Delivery Ceremony was held at the Lockheed Martin Fort Worth facility. Hill AFB flew the first combat coded F-35As for the first time as part of the 34<sup>th</sup> Squadron. The Royal Australian Air Force (RAAF) completed the first fuel transfer from a RAAF KC-30A Multi-Role Tanker Transport (MRTT) to an F-35A at Edwards AFB. Norway's first F-35A accomplished first flight. F-35C completed DT-II ship trials aboard the USS Eisenhower, completing 66 catapults and arrestments four days early. Hill AFB celebrated the arrival of its first F-35As. F-35A flyover at Lockheed Martin Armed Force Bowl in Fort Worth, Texas, makes history as first F-35 flyover at collegiate bowl game. The four jets were from the 61<sup>st</sup> Fighter Wing, Luke AFB, Arizona. The DoD accepts its 45th F-35 Lightning II aircraft delivery for 2015, meeting the program production goal for the year. AX-5, Japan's first Japanese-assembled F-35A, begins the mate process at the Nagoya, Japan, FACO facility. Luke AFB, Arizona announces F-35 Heritage Flight Program. Italy becomes the sixth nation to receive an F-35 with the delivery of AL-1 from the Cameri, Italy, FACO. Italy's first jet is the first F-35A to be delivered outside the United States. U.K. National Security Strategy and Strategic Defence and Security Review reaffirmed the U.K. program of record of 138 F-35Bs. Norway's first two F-35As arrive at Luke AFB, Arizona. Italy's first F-35 pilots complete initial training flights at Luke AFB, Arizona. F-35A completes first aerial gun test at Edwards AFB, California.
- **2016** - U.K. MOD, USMC and USAF announce jets participating at 2016 Royal International Air Tattoo and 2016 Farnborough Air Show. The first F-35A full wing-set produced by Italy's Finmeccanica-Aeronautics at the Cameri, Italy, FACO facility, made its first flight on AF-88 in Fort Worth, Texas. AS-1, Israel's first F-35A, begins the mate process at the Fort Worth production facility. Airmen from Hill AFB drop the first laser-guided bomb from an F-35A outside the testing environment. Six Operational Test and Evaluation F-35As from 53<sup>rd</sup> Fighter Wing deploy to Mountain Home AFB, Idaho to simulate a squadron deployment to a base with no existing F-35 support. An Italian Air Force F-35A, AL-1, completes the first transatlantic crossing of an F-35 by flying from Cameri Air Base, Italy, to NAS Patuxent River, Maryland. A new lightweight Gen-III F-35 helmet successfully completes the first round of testing aimed at fixes to the jet's escape system. Israel announces its first two F-35As are scheduled to land in country on Dec. 12. Gen. Chris Bogdan, F-35 Program Executive Officer, testifies before U.S. Senate Armed Services Committee saying radar stability issues are fixed with updated 3i software. F-35 Joint Program Office declares development of 2B and 3i software complete, giving full attention to 3F software which contains the full initial warfighting capability for all variants. Dutch F-35As AN-1 and AN-2 deployed from Edwards AFB to Leeuwarden Air Base (AB), Netherlands, for environmental testing and participation in RNLAf Open Days at Leeuwarden AB. Netherlands tests proved F-35A no louder than F-16s during extensive noise testing. Denmark's Government announces procurement of 27 F-35As. Hill AFB F-35As deployed to Mountain Home AFB with seven jets and 190 people. Jet executed IOC mission tests including SEAD, CAS and Air Interdiction: 88 of 88 sorties flown, 97 percent Mission Capable Rate and F-35A was undefeated in engagements with 4th Gen aircraft. UK/USAF/USMC F-35Bs and F-35As deploy to RAF Fairford for three-week deployment. The U.S. armed services decide to extend the operational life of the F-35 fleet by six years. Eielson AFB, Alaska, is selected as the new home for the Air Force's first operational overseas F-35A squadron scheduled to arrive in 2020. More than 425,000 people attend the 75 Years of Airpower air show at Luke AFB where the F-35A makes its debut appearance as part of the F-35 Heritage Team. Israel celebrated the rollout of its first F-35A Adir from the Fort Worth, Texas, factory. Blueprint for Affordability two-year extension and start of a Sustainment Cost Reduction Initiative that will save the program almost \$6 billion is announced at Farnborough. Israel's first F-35A, AS-1, flies its first flight. United States Air Force declares Initial Operational Capability for the F-35A. Two F-35As from Hill AFB, Utah, make first-ever F-35 appearance in Canada at the Abbotsford International Airshow. Seven F-35Cs land aboard USS George Washington (CVN 73) for DT-III ship trials – two from the Patuxent River Integrated Test Force and five from VFA-101 Grim Reapers, based at Eglin AFB, Florida. These are the first fleet pilots to complete carrier qualifications aboard an aircraft carrier in an F-35C. Twelve Weapons Delivery Accuracy and 13 Weapon Separation tests as part of a month-long weapons firing test surge are completed. The U.S. Navy hosted its first live-fire demonstration to successfully test the integration of F-35 with existing Naval Integrated Fire Control-Counter Air (NIFC-CA) architecture. Turkey approved funding for an additional 24 aircraft, funding 30 of the 100 F-35s on

its program of record. U.S. Government finalized the LRIP 9 contract for F-35 aircraft, issuing a unilateral contract to Lockheed Martin. DoD assigned F-35 Maintenance, Repair, Overhaul and Upgrade (MRO&U) capability for the first component repair assignments Outside the Continental United States (OCONUS), for the first 65 of 774 repairables. The assignments went to Australia, Netherlands and the U.K. F-35B DT-III sea trials were conducted off the west coast of the United States Oct. 29 - Nov. 21. This was the last full test prior to the USMC deploying the F-35B to Japan in 2017. At one time, 12 F-35Bs operated aboard the USS America at once. The first Japanese F-35A was delivered to Luke AFB, Arizona, for training. This marked the first delivery to this nation. Two F-35As were delivered to Amendola AB, Italy. This marked the first deliveries to this nation. Two F-35As were delivered to Nevatim AB, Israel. This marked the first deliveries to this nation, with the Prime Minister and U.S. SECDEF in attendance.

- **2017** - The F-35 program delivered its 200<sup>th</sup> operational jet, Japan's AX-2, to Luke AFB, Arizona, for pilot training. USAF officials announced NAS/JRB Fort Worth, Texas, as the preferred location for the first Air Force Reserve-led F-35 base, which is expected to begin receiving its first F-35As in the mid-2020s. USMC VMFA-121 makes permanent move of F-35Bs from MCAS Yuma to MCAS Iwakuni, marking the first trans-pacific F-35 crossing and permanent deployment of USMC F-35Bs in Japan. USN receives its first F-35Cs at NAS Lemoore, California. Reinstated VFA-125 "Rough Raiders" become the Navy's west coast Fleet Replacement Squadron for the F-35C.

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