



GO BEYOND

MILITARY  
ENGINES

F135

POWERING FREEDOM

IS006 | 2019

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# PROGRAM MILESTONES & ACTIVITIES



## 6 November | Norway Declares IOC for F-35

Norway declared F-35A initial operating capability (IOC) for its F-35 fleet, becoming the third European country to do so, after the UK and Italy.

## 31 October | First F-35A Arrives in the Netherlands for Permanent Basing

The Royal Netherlands Air Force has received its first F-35A Lightning II to be permanently based on Dutch soil, arriving at Leeuwarden Air Base.

## 13 October | A First for UK F-35Bs

The UK's F-35B aircraft landed on board Britain's next generation aircraft carrier - HMS Queen Elizabeth - for the first time.

## 8 October | Marine Corps F-35Bs, USS America Train Together

Approximately one dozen, fully-operational F-35B Lightning IIs embarked aboard the amphibious assault ship USS America (LHA 6) during routine training in the eastern Pacific.

## 2 October | P&W Awarded \$5.7B F135 Production Contract

Pratt & Whitney was awarded a \$5.7B U.S. Department of Defense contract funding more than 332 F135 engines for the U.S. armed services and international customers. This award represents the largest F135 production contract in program history and covers all Lot 12 and Lot 13 engines, with priced options for Lot 14.

## 26 September | Italian F-35 is the First in NATO Air Policing Mission

On September 26<sup>th</sup>, Italy, the first among all the partner nations, deploys F-35s to Iceland for a NATO Air Policing Mission.

## 13 September | First F-35A Assembled in Italy

The first F-35A rolled off the Cameri, Italy production line where it was assembled at Final Assembly and Check-Out (FACO).

This milestone represents the strong partnership among Lockheed Martin, Pratt & Whitney, the Netherlands, Italy and the F-35 Joint Program Office.

## 19 September | U.S. Air National Guard Receives First Two F-35s

The U.S. Air National Guard ushered in a new era of air power capability as its first F-35s arrived at the Vermont Air National Guard Base in Burlington.

As a new fifth-generation, the F-35s' arrival represents the first time the Guard has received new production fighter jets of any kind in recent history. Seven new F-35s will arrive in Vermont through 2019. The base is on track to receive a total of 20 F-35s.

## 11 September | State Department Approves Sale of F-35s to Poland

The U.S. State Department approves the sale of 32 F-35As to Poland.

## 15 August | First Female F-35B Pilot

U.S. Marine Capt. Anneliese Satz left her legacy on the Marine Corps' F-35B Program when she became the first female Marine to complete the F-35B Basic Course this summer.

## 16 August | Japan Picks Their Next Jets

The Japanese Defense Ministry formally announced their decision to purchase 42 F-35B aircraft as part of their overall program of record of 147 F-35.

## 23 July | Luke AFB Fleet Grows to 100

Luke Air Force Base hit the century mark with the acceptance of their 100<sup>th</sup> F-35. The Dutch jet is part of the 308<sup>th</sup> Fighter Squadron. The first F-35 arrived at Luke just over five years ago.

## 17 July | F-35s Arrive in the UK, Israel and South Korea

Six F-35Bs for the UK ferried safely to Royal Air Force Marham, two F-35s for the Israeli Air Force touched down at Nevatim Air Base and two F-35As for the Republic of Korea arrived at Chengui Air Base – where they will all be stationed.

Ferrying aircraft overseas to international customers is a huge effort requiring close government and industry partnership to plan and execute a complex logistics operation. In a very short timeframe, the F-35 team we delivered 10 aircraft to 3 international customers.

# F135 UPDATE FROM CAPITOL HILL

Matthew Bromberg, Pratt & Whitney's Military Engines president, participated in a House Armed Services Committee Joint Readiness & Tactical Air and Land Forces subcommittee hearing on November 13<sup>th</sup> regarding the F-35 program.

During his testimony, Bromberg provided an update on the production, sustainment and modernization of Pratt & Whitney's F135 engine, which powers all three variants of the fifth-generation F-35 Lightning II fighter aircraft.

Below are noteworthy quotes of Matthew Bromberg's opening statement, as delivered:

“FROM THE 369,000 WASP ENGINES PRODUCED IN WORLD WAR II, TO THE NEARLY 200 F135 ENGINES WE’LL DELIVER IN 2020, EVERY PRATT & WHITNEY ENGINE BEARS A SEAL THAT PROCLAIMS TWO WORDS: DEPENDABLE ENGINES.”

“The F135 propulsion system is the world's most powerful and advanced operational fighter engine. The F135, developed with our international partners, provides unmatched performance, safety, reliability, and affordability – all of which contribute to the National Defense Strategy.”

“With a worldwide fleet of more than 500 F135 engines, Pratt & Whitney is driving toward world-class sustainment. As the fleet grows, we are committed to reducing sustainment costs by 50%. The most important factor is reliability. Fortunately, the F135 has consistently exceeded 94% mission capability.

Pratt & Whitney drives high mission capability through advanced digital analytics, prognostics, and health monitoring. In addition, the Component Improvement Program is a critical funding priority to maintain levels of reliability and low cost sustainment.

Effective sustainment requires collaboration between the U.S. government and Pratt & Whitney. We have a strong history of public-private partnerships and working across government agencies.

Sustainment is a core competency. We support more than 100,000 engines around the world between our commercial and military franchises. And we're committed to sustaining the F135.

With development of the baseline Joint Strike Fighter program complete, focus is now on modernization. It's important to assure that the growth in aircraft capability is matched with propulsion growth. Fortunately, the F135 has ample design margin to permit agile upgrades. We are again working closely with the Joint Program Office to develop a propulsion upgrade roadmap.

In conclusion, the F135 is an integral part of the National Defense Strategy. The F135's unique capabilities of power and stealth provide the warfighter with vital advantages. The F135 supports more than 33,000 high technology jobs across 31 states. We remain laser-focused on meeting our commitments: production, cost, readiness, lifecycle affordability, and propulsion growth. We are committed to delivering the most capable engine to the warfighter, while providing the best value to the taxpayer.”

# NEWSWORTHY

## NORWAY DECLARES IOC FOR F-35A

On November 6<sup>th</sup>, the Norwegian Armed Forces marked a milestone, declaring Initial Operational Capability (IOC) for the F-35A. Norway becomes the third European country to declare IOC, after the United Kingdom and Italy.

Norwegian air chief Brig. Gen. Tonje Skinnarland declared the country's F-35As operational after completing a deployment meant to validate that the Royal Norwegian Air Force can operate the jets away from Norway's home base of Ørland Main Air Station.

Over the last two years, the Norwegian Air Force has conducted intensive operational testing and evaluation of special Norwegian conditions such as winter operations, operations in the northern areas and cooperation with Norwegian Army, Navy and Special Forces.

To conclude the test period, the Norwegian Armed Forces spent several days transferring aircraft and equipment from Ørland Air Station to Rygge Air Station, close to the capital Oslo. Deployment of Rygge's fighter aircraft system includes technicians and other important personnel as well as necessary equipment in order to train and practice operations from there. This was the first time the fighter aircraft were operated from a base other than Ørland Air Station.

Norway's F-35s will deploy to Iceland next year to conduct air-policing efforts on behalf of NATO. By 2022, the Norwegian Air Force will have built up enough F-35s, pilots and maintainers in the country to let the F-35 take over the "quick reaction alert" mission, which calls for operators to stand on a 24/7 alert and scramble, if needed, to intercept aircraft flying near Norwegian airspace. These F-35s will be ready for air-policing in Evenes, Northern Norway.

Norway plans to buy 52 F-35As.

## FIRST F-35A ARRIVES IN THE NETHERLANDS FOR PERMANENT BASING

The Royal Netherlands Air Force has received its first F-35A Lighting II to be permanently based on Dutch soil, arriving at Leeuwarden Air Base on October 31<sup>st</sup>.

The aircraft was assembled at the F-35 Final Assembly and Check Out facility in Cameri, Italy, and flown to Leeuwarden by Lt. Col. Ian Knight, commander of the Royal Netherlands Air Force's No. 323 Squadron.

The Royal Netherlands Air Force expects to receive its next F-35A aircraft in Leeuwarden later this month, followed by eight more in 2020 and 2021. Initial Operational Capability (IOC) is targeted for 2021.

In October, the Dutch Ministry of Defence announced plans to acquire nine additional F-35A aircraft, bringing the total number of F-35s for the Royal Netherlands Air Force to 46. The F-35A was chosen by the Netherlands in September 2013 to replace its F-16AM aircraft.

PRATT & WHITNEY  
AWARDED WITH  
\$5.7B F135  
PRODUCTION  
CONTRACT

Pratt & Whitney announced that it has been awarded a production contract for the 12<sup>th</sup> and 13<sup>th</sup> lots of F135 propulsion systems, powering all three variants of the F-35 Lightning II aircraft.

This award represents the largest-ever F135 production contract, funding more than 332 engines for the U.S. armed services and international customers, and includes program management, engineering support, production support, and tooling. The total contract value for Lot 12-14 is approximately \$5.7 billion and it covers all Lot 12 and Lot 13 engines, with priced options for Lot 14.

“This is a significant milestone for the program and underscores the hard work of our joint government and industry team,” said Matthew Bromberg, president of Pratt & Whitney Military Engines. “We’re proud to be delivering 5th-generation propulsion capability at a great value for the warfighter.”

“With more than 500 F135 engines delivered to date, we’re at an exciting inflection point for the program. We are laser-focused on standing up an effective global sustainment network that will support the F135 throughout its lifecycle,” Bromberg said.

The combat-proven F135 is the most advanced fighter engine ever produced, delivering more than 40,000 lbs. of thrust and unmatched advances in safety, design, performance, and reliability.

AIR NATIONAL  
GUARD'S FIRST  
F-35 TAKES  
FLIGHT

In the beginning of August, the very first F-35A for the Vermont Air National Guard took to the skies for the first time at the Lockheed Martin flight line in Fort Worth, Texas.

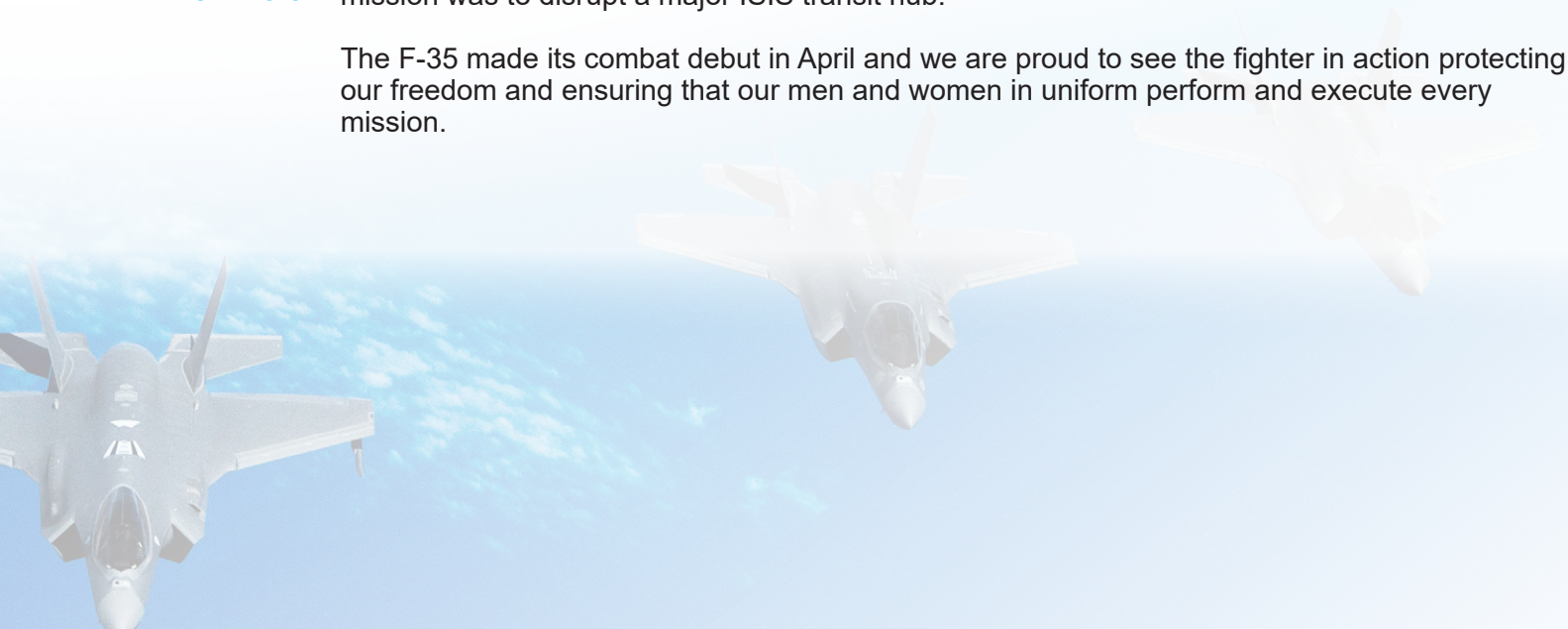
Designated AF-207, this jet will now complete its required company and government flights as it prepares for formal delivery and acceptance.

The Air National Guard's (ANG) first F-35 is scheduled to arrive at the ANG base in Burlington, Vermont in September.

F-35S USED TO  
TARGET ISIS

On the week of September 9<sup>th</sup>, U.S. F-35s and F-15s targeted ISIS militants on Qanus Island in Central Iraq. The U.S. led coalition targeted the island to deny a safe haven for the group. Their mission was to disrupt a major ISIS transit hub.

The F-35 made its combat debut in April and we are proud to see the fighter in action protecting our freedom and ensuring that our men and women in uniform perform and execute every mission.



## NEW LEADER FOR F-35 LIGHTNING II PROGRAM

With a commitment to carry the program forward, a new leader took charge of the F-35 Lightning II Joint Program Office on July 11<sup>th</sup> in a ceremony at the U.S. Navy Memorial in Washington, D.C.

Lieutenant General Eric Fick assumed the watch from Vice Admiral Mat Winter as the program executive officer for the F-35 program. The F-35 Lightning II Joint Program Office is the U.S. Department of Defense agency responsible for developing and acquiring the F-35A/B/C, the next-generation strike aircraft weapon system for the United States Air Force, Navy, Marine Corps, seven international partners, and three foreign military sales customers.

Fick, a veteran of leading multifaceted defense acquisition programs, was the deputy program executive officer for the past two years. He previously served as director of Global Reach Programs for the Office of the Assistant Secretary of the Air Force for Acquisition, where he was responsible for the \$5.6 billion airlift, air refueling, training and special operations.

He entered the U.S. Air Force in September of 1990 after graduating from the University of Notre Dame with a bachelor's degree in aerospace engineering. He has served as a logistics plans and programs officer, mechanical systems engineer, computational fluid dynamics research engineer, chief of test for the Joint System Program Office, and as deputy chief, Air Force Senate Liaison Office.

Lieutenant General Fick has commanded at the squadron and group level and served twice as an Air Force program executive officer. He has logged more than 350 hours in the T-38, F-15, F-16 and other military and civilian experimental aircraft.

Winter's departure as program executive officer also coincides with his retirement after 35 years of U.S. Navy service. With the change in program executive officer from U.S. Navy to U.S. Air Force, the program's service acquisition executive switches from Air Force to Navy, with James Geurts, assistant secretary of the Navy, assuming the duties.



## US, UK, ISRAEL DEMONSTRATE AIR POWER

F-35 Lightning II fighter aircraft from the U.S., UK and Israel participated in Exercise Tri-Lightning over the Eastern Mediterranean Sea on June 25<sup>th</sup>.

Tri-Lightning was a one-day defensive counter air exercise involving friendly and adversary aircraft from the three participating countries, and consisted of active and passive air defense operations.

This exercise is a demonstration of the interoperability between the U.S., UK, and Israel using the F-35A, F-35B and F-35I respectively.

“We build capacity with our strategic partners to harness our air component’s capabilities and skills,” said Lt. Gen. Joseph T. Guastella, commander, U.S. Air Forces Central Command. “The transatlantic strategic relationship between the U.S. and our allies and partners has been forged over the past seven decades, and is built on a foundation of shared values, experience and vision.”

The U.S. Air Force F-35As flew from Al Dhafra Air Base, U.A.E., the Royal Air Force F-35Bs flew from Royal Air Force Akrotiri, Cyprus, and the Israeli Air Force F-35Is flew from Nevatim Air Base, Israel.

“Tri-Lightning was an exercise which had been planned for months, and it provided an outstanding opportunity for the squadron to operate and learn from our fellow F-35 community,” said UK Wing Commander John Butcher, commanding officer, Squadron 617. “In addition it allowed us to share and gain valuable experience that we will be able to exploit during future training and potentially operational deployments, whether embedded on the Queen Elizabeth or from overseas airbases.”

The F-35s from the three nations played as primary friendly, or blue, force players in this exercise, while a variety of other aircraft played the aggressor roles, simulating realistic combat situations between the advanced F-35s and previous generation fighters.

“The exercise today reflects the close cooperation between the participating nations,” said Brig. Gen. Amnon Ein-Dar, chief of Air Staff, Israel. “This training opportunity between Israel, the U.S. and Britain, strengthens shared capabilities and overall cooperation among allies.”

*By Lt. Col. Christine D. Millette | U.S. Air Forces Central Command Public Affairs*

## UK MAKES HISTORY WITH F-35Bs

In June, Royal Air Force F-35Bs made their operational debut with missions over Iraq and Syria.

The UK became the third nation to use its F-35s in combat, following Israel and the United States, to include both the U.S. Air Force and U.S. Marine Corps.

“The F-35s are the most advanced jets our country has ever possessed and will form the backbone of British air defence for decades to come,” UK Defense Secretary Penny Mordaunt said in remarks at Royal Air Force (RAF) Akrotiri. “They have passed every test their training has thrown at them with flying colours and their first real operational mission is a significant step into the future for the UK.”

We salute the RAF for achieving this important milestone and we thank the entire F-35 enterprise who has supported the United Kingdom to ensure their operational success.

# JSF LIGHTNING II SOARS AT AIRSHOWS

## FLYING A UNIQUE FORMATION OVER NEW YORK

On August 22<sup>nd</sup>, the F-35 took to the skies in the Big Apple. In a historic event, the F-35 Lightning II Demo Team, the Royal Air Force Red Arrows and the U.S. Air Force Thunderbirds flew over the Hudson River and the Statue of Liberty.

This flyover was a stunning symbol of American and British partnerships and a chance to reflect on the sacrifices our Armed Forces make to protect and defend our freedom. We are honored to support our men and women in uniform. A flyover of this scale and visibility is no small feat and you know what they say? If you can make it in New York, you can make it anywhere!

A few days later, the New York International Air Show featured the U.S. Air Force F-35A Lightning II Demo Team at New York Stewart International Airport in New Windsor, New York.

Check out videos online of the NY International Airshow for demonstrations of the F-35 in all its glory.

## PLENTY OF P&W POWER AT AIR TATTOO

Members of the military aviation community gathered in England for the annual Royal International Air Tattoo (RIAT), the world's largest military air show. The term "tattoo," in this case, refers to elaborate military performances, and originated from a military snare drum cadence called the "tap-too." This year's event, which took place July 19<sup>th</sup> to the 21<sup>st</sup> in Gloucestershire, displayed aircrafts from more than 20 different nations.

The F-35 always proves to be a favorite at air shows, for spectators and pilots alike.

"MY FAVORITE THING ABOUT FLYING THE F-35 WOULD BE, HONESTLY, THE MOTOR,"

said Capt. Brett "Shock" Burnside, U.S. Air Force. "She's got one motor and puts out about 40,000 pounds of thrust, and especially down here at sea level, when you kick in the afterburner, you can definitely feel it. It puts you back in your seat."





# RAMPING UP. HONING IN.

The second half of 2019 has been busy and I hope this Newsletter provides a snapshot of the numerous significant accomplishments. I'd like to take a moment to reflect on some of those accomplishments and then look to the challenges that lie ahead in 2020 and beyond.

F-35's are now operating from 19 bases around the world and have flown over 220,000 hours.

OVERWHELMING FEEDBACK FROM  
OUR END USERS IS THAT THEY  
LOVE THE F135 ENGINE AND ITS  
CAPABILITY.

We are now supporting an operational fleet of F-35 aircraft that have conducted combat operations with four military Services.

WE HAVE DELIVERED OVER  
570 ENGINES TO INCLUDE  
APPROXIMATELY 155 IN 2019;  
WHICH IS A 70% INCREASE OVER  
WHAT WE DELIVERED IN 2018.

The F135 engine continues to demonstrate significant improvement in safety metrics and our Mission Capable rating for the engine across the Program was greater than 96% in 2019. These statistics and accomplishments would not be possible without the Suppliers that support this great enterprise, and we have lots more to do.

I have briefed the Pratt & Whitney F135 Team on my focus areas for 2020: Quality, Cost, and Sustainment. While we succeeded in ramping part rates and engine builds over the course of 2019, we continued to have problems delivering to contract due, in large part, to quality issues with parts. The Quality signature across the F135 Program must improve to instill confidence in our customers. Additionally, there is tremendous pressure on this Program to reduce both production costs and life cycle costs in order to provide this exceptional propulsion system at an affordable price. Finally, we must place increased emphasis on sustainment in order to support the current operational fleet in 2020 and prepare for first scheduled depot inductions in 2021. Our Suppliers are critical to the Program's success in all three of these focus areas.

Finally, I want to thank you all for the work you put in everyday in order to help this Program succeed. The Joint Strike Fighter Enterprise continues to grow on a global scale. From air shows in New York to operations in the Middle East, the F-35 has become a global symbol of freedom. Your hard work and dedication on the F135 Program helped get it there. Let's continue to work together to keep it at the forefront of airpower for our Customers around the globe.

HAPPY HOLIDAYS!

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BEV DEACHIN  
Vice President | F135 Program





**GO BEYOND**

### Let Us Know How We're Doing!

Do you enjoy reading the F135 Newsletter? Do you have topics in mind that you would like to read more about? Please send your comments and suggestions to Navjot Singh at [Navjot.Singh@pw.utc.com](mailto:Navjot.Singh@pw.utc.com)

### Give Us a Follow!

To keep up to date with the latest developments, achievements, and activities of the F135 Program, follow us on our media channels below:



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