AIR FORCE MAGAZINE

# How the F-35A and the F-15EX compare

## F-35A

### Primary Functions
Stealthy, all-weather strike, close air support and air superiority; intelligence, surveillance, and reconnaissance; maritime strike; electronic warfare, and command and control.

### Procurement Costs
**$89.2 millon** 2018 (actual)
**$80 Millon** 2025 (projected)

Lot 11 price. Contracts stipulate maximum cost of $80 million per plane by 2020.

### Cost Per Flying Hour
**$35,000** 2019
**$24,000** 2025 (projected)

### Prime Contractors
Lockheed Martin, Northrop Grumman

### Production Capacity
188 to 221 annually for all versions of the F-35 (including B and C models)

### Initial Operational Capability
**2016**

### Inventory
150+ (USAF only)

### Engine
**1** Pratt & Whitney F135

### Accomodation
One pilot

Max takeoff **Weight**
**70,000 lb.**

### Performance
**COMBAT RADIUS 670 Miles**
**Mach 1.6**
**MAX G-LOADING 9Gs**
**CEILING 50,000**

### Fuel Capacity
- Internal: 18,250 pounds
- External: Two fuel tanks on wing hard points

### Weapons
All US and NATO air-to-air weapons; most US and NATO air-to-ground weapons.
- Internal Capacity (Stealth Mode): 5,700 pounds
- External Capactiy ("Beast" Mode): 22,000 pounds
- 25 mm cannon

### Service Life
Design life 8,000 hours
Tested to 24,000 + hours

### Major Differences From Earlier Versions
Multiple software and processor refreshes, including to weapons capabilities and electronic warfare systems. Current in-production version is the Block 3F Baseline; Block 4 development, now underway, will include software and weapon updates on a twice-annual pace through 2024.

### Allied Operators
**Partner Nations**
**Foreign Sales**

### Congressional Support
Major constituencies for F-35 production: Texas, California, Georgia, Florida. Major bases and installations hosting or supporting the F-35A: Utah, Arizona, Florida, Nevada. Lockheed has placed F-35 subcontracts in all 50 states.

## F-15EX

### Primary Functions
Air superiority and strike in less- or uncontested airspace.

### Procurement Costs
**$98.3 millon** 2019 (proposed)
**$80.3 Millon** 2025 (projected)

Estimate for the first 80 aircraft under a $7.865 billion, five-year proposal, including nonrecurring engineering costs. Average price projected to be $89.7 million per aircraft for the duration of the buy.

### Cost Per Flying Hour
**$27,000** 2019
**<$27,000** 2025 (projected)

### Prime Contractor
Boeing

### Production Capacity
24 to 36 annually

### Initial Operational Capability
**1975** F-15A
**2016** F-15SA*
*F-15SA (Saudi Arabia) is similar to the F-15EX configuration with fly-by-wire controls

### Inventory
F-15C/D 235; F-15E 218

### Engines
**2** Pratt & Whitney F100-PW-229 or GE F110-GE-129 (USAF to decide)

### Accomodation
Two aviators, but all systems can be operated by the pilot in the front seat. USAF plans to operate with pilot only.

Max takeoff **Weight**
**81,000 lb.**

### Performance
**COMBAT RADIUS 1,100 Miles**
**Mach 2.5**
**MAX G-LOADING 9Gs**
**CEILING 60,000**

### Fuel Capacity
- Internal: 13,550 pounds
- With conformal fuel tanks: 23,350 pounds
- External: Three underwing and centerline hard points can accommodate fuel tanks

### Weapons
All US air-to-air weapons; most US air-to-ground weapons; some "outsize" weapons, such as 5,000-pound GBU-28.
- Capacity: 29,500 pounds, all external, on nine stations
- 20 mm cannon

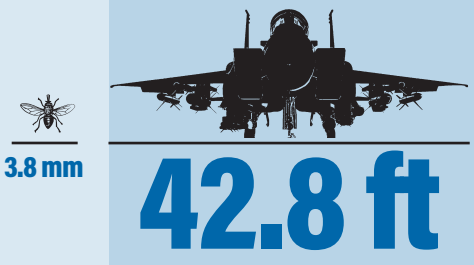
### Service Life
Design life 8,000 hours
Tested to 30,000 + hours

### Major Differences From Earlier Versions
Major changes since the Air Force bought its last F-15Es in 2001 include a digital, fly-by-wire system; the Advanced Display Core Processor II (ADCPII); Suite 9 avionics which make the F-15C and E software compatible; new cockpit displays similar to those on the T-X trainer, and the Eagle Passive Active Warning Survivability System (EPAWSS).

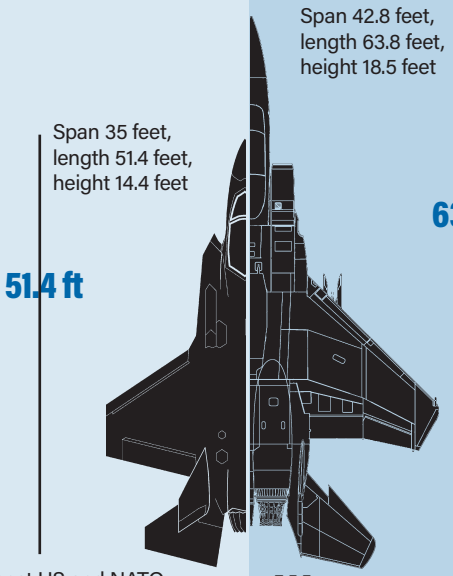
### Allied Operators

### Congressional Support
Major constituencies for F-15EX production: Illinois, Kansas, Missouri, Washington. Major institutions hosting F-15 activities: Georgia, North Carolina, and Oregon. Boeing's military and commercial entities do business in all 50 states.

## Radar Cross Section
(Relative size of aircraft on radar)




## Dimensions




## Detection Range vs. S-400 Missile System


Graphic by Dash Parham/staff; Photos: SSgt. Jensen Stidham; Boeing

Sources: Data from *Air Force Magazine's USAF Almanac, Aviation Week Analysis,* Boeing, F-35 Joint Program Office, globalsecurity.org, Lockheed Martin, USAF