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Cessna Citation X

Outlook

- Cessna terminated production of the slow-selling Citation X+ in early 2019
- The company delivered only four Citation X+ jets each year during 2016-2018

Orientation

Description. Medium-size, twin-turbofan business jet.

Sponsor. Cessna Aircraft Company.

Status. In production.

Total Produced. Cessna produced 316 Citation X jets and 29 of the upgraded X+ model through 2019.

Application. High-speed executive transportation.

Price Range. Estimated at \$23.7 million, typically equipped.



Citation X+

Source: Cessna

Cessna Citation X**Contractors****Prime**

Cessna Aircraft Co	http://cessna.txtav.com , One Cessna Blvd, PO Box 7706, Wichita, KS 67277 United States, Tel: + 1 (316) 517-6000, Prime
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Subcontractor

Collins Aerospace Systems, Mechanical Systems	http://www.collinsaerospace.com , Four Coliseum Centre, 2730 W Tyvola Rd, Charlotte, NC 28217-4578 United States, Tel: + 1 (704) 423-7000, Fax: + 1 (704) 423-7002 (Generator, 400 Amp Auxiliary; Main System Generator, 150 Amp)
Crane Aerospace & Electronics	http://www.craneaerospace.com , 16700 13th Ave W, Lynnwood, WA 98046-9727 United States, Tel: + 1 (425) 743-8321, Fax: + 1 (425) 743-8234 (Brake Control System)
Garmin International Inc	http://www.garmin.com , 1200 E 151st St, Olathe, KS 66062 United States, Tel: + 1 (913) 397-8200, Fax: + 1 (913) 397-8282 (G5000 Avionics)
Moog Inc	http://www.moog.com , Jamison Rd, East Aurora, NY 14052 United States, Tel: + 1 (716) 652-2000, Fax: + 1 (716) 687-4457 (Primary Flight Control)
Rolls-Royce Corp, Plant 8 Manufacturing Facility	http://www.rolls-royce.com/northamerica/na , 2001 S Tibbs Ave, Indianapolis, IN 46206 United States, Tel: + 1 (317) 230-2000, Fax: + 1 (317) 230-4020 (AE 3007 Turbofan Engine)
Safran Transmission Systems	http://www.safran-transmission-systems.com , 18, Blvd Louis-Seguain, Batiment K1, Colombes, France, Tel: + 33 1 41 30 50 10, Fax: + 33 1 41 30 54 12 (Composite Fan Duct)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data**(Citation X+)**

Design Features. Low-swept-wing design with swept T-tail, retractable tricycle type landing gear. Airframe based on Citation III. The wing features a 37-degree sweep-back angle, and the fuselage aft of the

passenger cabin is area-ruled for high-subsonic speed-drag reduction. T-tail optimized for very low drag, and features one-piece horizontal stabilizer.

	<u>Metric</u>	<u>U.S.</u>
Dimensions (External)		
Length overall	22.43 m	73.6 ft
Height	5.86 m	19.3 ft
Wingspan	21.1 m	69.2 ft
Dimensions (Internal)		
Cabin internal width	1.68 m	5.5 ft
Cabin height, max	1.73 m	5.7 ft
Cabin length	7.67 m	25.2 ft
Baggage capacity	2.93 cu m	104 cu ft
Weight		
Max takeoff weight	16,601 kg	36,600 lb
Basic operating weight (2 crew, 200 lb each)	10,031 kg	22,114 lb
Useful load	6,707 kg	14,786 lb
Maximum payload	1,299 kg	2,864 lb
Payload with full fuel	841 kg	1,855 lb

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	<u>Metric</u>	<u>U.S.</u>
Performance		
Maximum speed	Mach 0.935	Mach 0.935
Maximum cruise speed (37,000 ft)	978 km/h	528 kt
NBAA IFR range (200-nm alternate)	6,004 km	3,242 nm
Ceiling	15,545 m	51,000 ft
Takeoff distance	1,600 m	5,250 ft
Propulsion		
Citation X	(2)	Rolls-Royce AE 3007C1 turboprop engines rated 32.01 kN (7,200 lbst) but flat-rated to 30.1 kN (6,764 lbst) at 29°C.
Citation X+	(2)	Rolls-Royce AE 3007C2 turboprop engines with static takeoff thrust at sea level of 7,034 pounds (31.29 kN) flat rated up to 59°F (15°C).

Seating

Citation X. Standard seating for two crew and nine to 12 passengers.

Program Review

Background. Cessna announced development of the Citation X in 1990, designing it to be the fastest business jet in service. A test aircraft made its first flight in December 1993. The manufacturer made its initial delivery to a customer in July 1996.

Cessna began an improvement program in October 2000 that, among other modifications, included the use of uprated AE 3007C1 engines. The result was a 400-pound (181-kg) increase in maximum takeoff weight and improved short-field performance. First delivery of the upgraded model to a customer was made in 2002.

The manufacturer announced an upgrade program in October 2010 that was to result in a new "Citation Ten" model. Cessna later dropped the Citation Ten label in favor of continuing to use the Citation X designation with the addition of a plus sign (+) to mark the upgraded aircraft.

Improvements included new AE 3007C2 engines, elliptical winglets, a Garmin G5000 avionics suite, a new fiber-optic cabin management system, and a

fuselage stretched by 15 inches to include more cabin space. The higher thrust of the new AE 3007C2 provided a 7 percent increase in the aircraft's cruise speed, allowing the Citation X to reclaim the title of fastest business jet on the market from Gulfstream's G650. The upgrades also increased range by 190 nautical miles (352 km) and maximum payload by 214 pounds (97 kg).

A test aircraft made its first flight in January 2012. The new model achieved certification in June 2014, with the first delivery immediately following.

Citation X Elite Program

Cessna has instituted a refurbishment program for the Citation X. Existing airframes are stripped, repainted and given new wheels, brakes, and tires. The flight deck gets Honeywell Primus Elite avionics, and the tail is equipped with a new horizontal trim actuator. The program completes the upgrade with a new interior, cabin management system, and wireless network.

Funding

Cessna spent an estimated \$200-\$300 million on Citation X development and production tooling.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Late	1990	Cessna announces all-new Citation X
Dec	1993	Citation X first flight
Mid-	1996	Citation X certificated, initial deliveries

Cessna Citation X

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Jan	2002	Citation X performance enhanced
Oct	2010	Cessna announces Citation Ten upgrade program
Jan	2012	First flight of upgraded Citation X
Aug	2013	First upgraded production aircraft makes maiden flight
Jun	2014	Certification and first delivery of upgraded Citation X+ model
Jun	2018	Cessna announces planned termination of Citation X+ production
Q1	2019	Cessna delivers the last Citation X+

Forecast Rationale

Cessna terminated production of the Citation X in the first quarter of 2019.

The Citation X+ is the market's fastest production business jet, but its cabin is smaller than that of other medium-size business jets. It is fast enough to travel coast to coast for business meetings and return home the same day, but it also costs more to buy and operate than aircraft with a similarly sized cabin. It's a niche product

targeted at customers with a very specific need for speed. Lately these customers have been hard to find.

Cessna delivered only four Citation X+ jets each year during 2016-18, well below the rate of deliveries prior to the 2008-09 recession. The move to the upgraded X+ model did not improve sales, and it was time for Cessna to move on.

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