

## CitationJet History

By the late 80's, Cessna had decided to introduce a second generation member to the Citation family and engineering work was begun on this new improved Citation, the CitationJet. The new "CJ" as it would become known, was announced at NBAA in 1989 and first flew in early 1991. This newer member of the Citation family was to be faster, more fuel efficient, easier to maintain and less expensive to build than its predecessor. The CJ, was actually Cessna's re-entry into the light jet market since the Citation 501 had gone out of production in the mid 80s. The CJ also incorporated a new construction technique, placing the fuselage over the wing. All previous Citations incorporated a stub wing as part of the fuselage with two wing halves bolted onto this stub wing. This wing was the first application of a true natural laminar flow wing on a light jet, and since the wing did not penetrate the cabin, cabin volume was not impacted and the wing had less drag. The typical CJ weighed in at 6500 to 6600 pounds, significantly lighter than a typical late 501 which tipped the scales at 7200 to 7400 pounds. The CJ's maximum ramp weight is 10,500 pounds, maximum takeoff weight is 10,400 pounds and carries only 3200 pounds of fuel compared to 3800 pound fuel capacity for the 501. However, due to the CJs more efficient Williams engines, the CJ flies farther on less fuel, with a range of 1100 miles on a good day. Payload with full fuel did reduce somewhat compared to the 501 it replaced, down to about 500 pounds but maximum cruise speed increased up to 380 kts, primarily due to more efficient aerodynamics.

The first engineering prototype first flew in April of 1991 and the pre-production prototype flew in November of the same year. The FAA Type Certificate was granted to Cessna under FAR Part 23 roughly a year later, making the CJ a single-pilot" Citation from unit number 1. The first customer delivery took place in March of 1993 and another line of Citations was out of the stable. The CJ

was replaced in 1998 at sn 360 with the CJ1, featuring a more up to date Collins Pro Line 21 avionics suite and a 200 pound increase in takeoff weight, up to 10,600 pounds.

Also in 1998 Cessna introduced a stretched version, the CJ2. The first CJ2 prototype flew in April of 1998 and production began in July of the following year. The CJ1 was stretched about 30 inches to make room for 2 more seats and the CJ2 carried 4000 pounds of fuel for a range of 1500 nm or so. Cruise speed increased to 415 to 420 kts. With a maximum ramp weight of 12,500 pounds and typical empty weight of 7700 pounds, the CJ2 has a payload of 700 to 800 pounds with full fuel. CJ2s are equipped with Collins Pro Line 21 avionics and typically Universal FMSs.

In 2005, both the CJ1 and CJ2 graduated to electronic fuel controllers, dramatically reducing pilot workload in takeoff and climb out. The first FADEC CJ1+ was sn 600 and enjoyed another 100 pound increase in ramp and takeoff weights to 10,800 and 10,700 pounds respectively. The first CJ2+ was sn 300 and its maximum ramp weight increased from 12,500 to 12,625 pounds and takeoff weight from 12,375 to 12,500 pounds. The typical empty weight of both the CJ1+ and CJ2+ is 100 to 200 pounds above their CJ1 and CJ2 predecessors.

In 2006, the CJ got stretched again to become the CJ3. The stretch was only slight and did not make room for more seats, just more leg room than the CJ2. Fuel capacity was increased to 4700 pounds, resulting in range increasing to 1900 nm or so. The CJ3 was the first Citation certificated as a “Commuter Category” CJ, allowing an aircraft weighing over 12,500 pounds, 13,500 in this case, to be certificated under part 23. This means that the CJ3 is a single pilot airplane that weighs 13,500 pounds but requires no waiver to be operated without a co-pilot. Even with the additional fuel, this increase in takeoff weight over the CJ2 allowed a 100 pound or so increase in payload with full fuel.

The newest member of the CJ family is the CJ4. The fuselage has been stretched yet again, this time roughly 2 feet. The CJ4 has several “firsts” for a CJ. The CJ4 wing has a mild 12 degree sweep, the hydraulic system is constantly pressurized to 3000 psi and ground spoilers are installed. The windshield is electrically heated and made from glass instead of acrylic. The environmental system uses interesting vortex cooling technology. These are all departures from previous CJ technologies and will be interesting to watch in the marketplace. The swept wing has more surface area though wingspan is reduced and it carries a bit over 5800 pounds of fuel. High-speed cruise is 450 kts and range is increased to over 2000 nm. It will be interesting to watch the CJ4 evolution to this product line.

As of this writing, there have been nearly 1500 CJs delivered and a total of over 6100 Citations of all families have been manufactured.