

The Cessna 195

A classic thunders on.

BY PETER M. BOWERS

The Cessna 190 and 195 models are something unique in general aviation. While their basic outlines can be traced directly back to the first production Cessnas of 1927, they would not look out of place in the Cessna factory today, alongside such straighttail taildraggers as the model 180 (Cessna model numbers have nothing to do with the sequence of model development). The late 195 was built 26 years ago, but the design still looks modern from any angle.

Entirely aside from looks, the design has the distinction of being the last of its type. It was the last of the "big" (five or more seats) single-engine, cabin monoplanes on the market to be powered with a radial engine. In fact, one wonders how the 190 version

stayed in production as long as it did, when the engine it used was supposed to have been out of production before the first airplane was delivered.

The prototype of the 190 was begun before World War II ended. The war was winding down, and the government allowed aircraft manufacturers to divert limited manpower and material to the development of new designs for the postwar market.

Cessna had been shaping up ideas for the postwar "Family Car of the Air," but realized that the design would take a long time to develop. With the end of the war now imminent, the company sought to turn out something more conservative and simple that could be brought to flight status in a hurry. This was the Model 190, which was a more-powerful version of the 1935-1942 Cessna C-34/C-165 "Airmaster."

Some design shortcuts were taken by us-

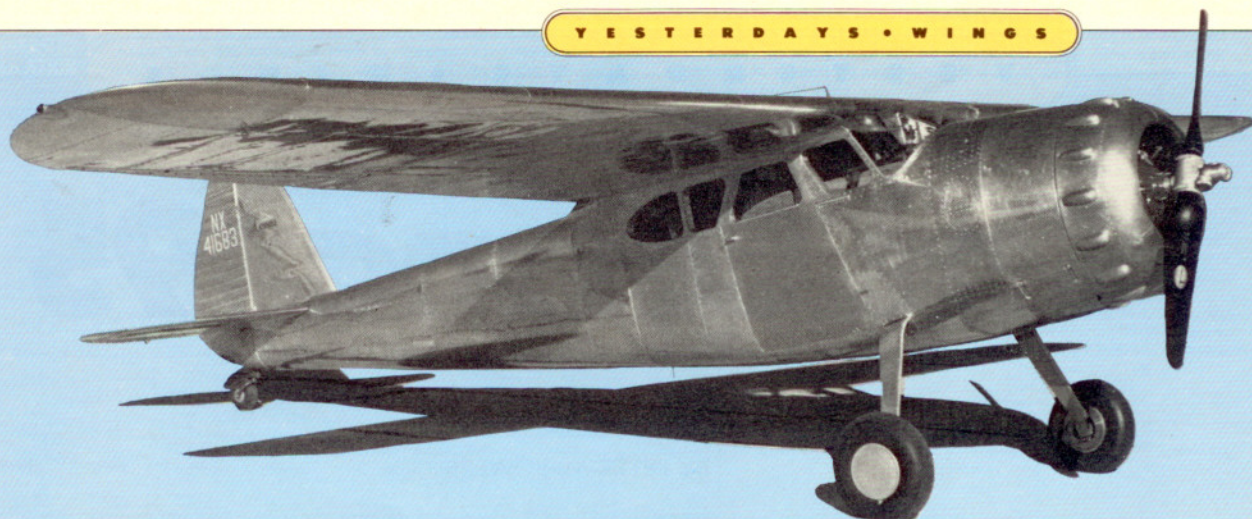
ing the engine/cowling/propeller of the twin-engine T-50 model, which the firm had built in large numbers for the military after selling a few civil versions just before the war. The fuselage was welded steel tubing with fabric cover, very similar in appearance and detail to the Airmaster, and the cabin was again four-place. The cabin was slightly roomier than on the Airmaster; but forward visibility, almost marginal on the prewar model because of the cowled radial engine, was handicapped further by the seven-cylinder, 245-hp Jacobs engine.

While the shapes of the wing and the tail were very similar to those of the Airmaster, the 190 used all-metal construction for these surfaces, including metal skin. This was the first Cessna since the 1932-1933 racers to use stressed skin, rather than double internal bracing, to stiffen a cantilever wing. The skins of the moveable rudder and

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With World War II ending, manufacturers diverted excess manpower and materials to developing civil aircraft. Seeking a fast solution to reentering this market, Cessna came up with the 190/195 series. The prototype was very much like the prewar Airmaster, except for its metal-skinned wings and tail surfaces and spring-steel, single-leg landing gear, a Cessna trademark for the next 20 years.



Forward visibility was a distinct problem in this series. So, Cessna made the engine cowling as small in diameter as possible on the second prototype, slightly increasing visibility.

elevators were stiffened by crimping them into chordwise corrugations, a practice that Cessna retains for some models today. The ailerons were fabric covered, and the flaps had smooth metal skins.

The major innovation was the introduction to commercial aviation of the single-leg landing gear made of chrome-vanadium spring steel. This had been developed by famed racing pilot Steve Wittman on a pair of his well-used racing airplanes, which he had modified in 1936 and 1937. After refining the details a bit, Wittman obtained a patent on his clean, maintenance-free and weight-saving device. He later sold the rights to Cessna, and the 190 was the first application by "the industry."

The new prototype made its first flight on December 7, 1944, barely six months after design work started. The new gear did not work too well at first. After trying various legs that were either too springy or too stiff, Cessna was about to give up on it. Wittman was called in for consultation, however, and, after a change of chord-to-thickness ratio, the gear worked perfectly and the rest is history. The spring-steel landing gear remained a Cessna exclusive until 1966.

Before the 190 could go through certification testing and be tooled up for production, Cessna saw a new market coming up that called for fast action, if the company were to get a share. Early in 1945, Congress passed the GI Bill, which would pay for education for returning veterans—including flight training. Cessna sought to outdo the established 65-hp trainers, such as the Piper Cub and the various Aeronca, Taylorcraft and Luscombe equivalents, by introducing a new 85-hp model. The design concept and timing were right, and the 120/140 two-seater, which flew in June 1945, sold some 7,724 examples through 1950. As a tribute to its durability, 3,443 are on hand today.

With 120/140 production well in hand, Cessna dropped the "family car" idea completely and got back to the 190. However, it now took a different approach. First, it enlarged the airplane to five seats by making it bigger all around and using a 300-hp Jacobs



Cessna had an identity problem with the 190 and the 195 because they looked so much alike. To solve that crisis, the company painted the appropriate numerals on the side of each model.



The LC-126C was the final military version of the Cessna 195 series. It had an extra-wide right door for loading litters and a window on the left side that could be opened as a camera port.



More than half of the 190/195s built still are around. Most have been modified, as the one above, and look entirely different from the prototype. Changes include flatter, more powerful engines, such as the 450-hp Pratt & Whitney Wasp Jr., "booster" wingtips, larger wheels and a dorsal fin.

engine. The two pilots sat at dual controls with a throw-over yoke, while the passengers sat three abreast on a bench-like seat at the rear of the cabin. Entry was by a single, wide door on the right side of the cabin.

The forward visibility problem was kept in mind; so the engine cowling was made as small in diameter as possible, even pressing in bumps to fit over the rocker boxes of the radial engine. Other than size, the only notable change on the wing was the use of crimped metal skin on the ailerons.

The major change was in the fuselage structure. Since Cessna had experience with stressed-skin fuselage construction, as a result of the 120/140 program, this type was chosen for the 190. The by-then thoroughly debugged spring-steel gear was retained.

The second 190 prototype was flown in October 1945, and the third in June 1946. The third differed from the second primarily in the use of a 240-hp Continental W-670-23 engine, a civil refinement of the famous seven-cylinder, 220-hp R-670, which had powered many wartime Stearman and Fairchild trainers and which actually dated from the 160-hp A.70 version of 1929. The major difference from the earlier W-670s was suitability for a constant-speed propeller. Fuel capacity was the same for both—80 US gallons in two wing tanks.

The two final prototypes passed their certification tests with flying colors and, in spite of the different engines, received the same Approved Type Certificate, A-790. Production got under way early in 1947; but Cessna marketed the single design under two model numbers, according to powerplant. The Continental version retained the 190 designation (price \$13,250), while the Jacobs model became the Model 195 (price \$14,950). Other than the engines and slightly different performance, the two outwardly were identical. Cessna simplified the identity problem for the public by painting 190 or 195 on each side of the fuselage near the windshield. The 195 had one feature not shared by the 190—it could be fitted with twin floats. Deliveries of the 195 began in July 1947, and the 190 followed in October.

Both models sold well. About the only chronic gripe from the customers was the poor forward visibility, so Cessna tried a modified version, the X-210, in 1950. The main feature of this was the substitution of a 240-hp, six-cylinder, opposed Continental engine of 471-cubic-inch displacement. This did wonders for the visibility; but, in spite of the same horsepower rating, it could not match the thrust of the Continental, which had 670 cubic inches. Since Cessna was then busy with the L-19 liaison airplane for the military, the X-210 was abandoned and 190/195 production continued.

The Army and the Air Force became interested at that time and bought 83 Model 195s between 1949 and 1952. The first were 15 LC-126As, delivered to the Air Force for arctic rescue work and provided with both floats and skis. Five LC-126Bs, procured for the National Guard, operated on wheels only. The final military order was for 63 LC-126Cs for the Army. These were fitted with double-width doors for loading two litters and one attendant plus the pilot.

Production of the 190 ended in 1953. The supply of out-of-production Continental engines must have been used up; but Jacobs still was in business, and the 195 line continued with an improved version, the A-195. This was built under the original ATC. The A-195 featured new horizontal tail surfaces, enlarged flaps and a large spinner over the propeller hub. The latter is not a valid recognition feature now, as it has been retrofitted to some earlier models. The price of the aircraft had risen to \$20,000. Production of the A-195 ended in 1954, after 1,194 190/195s had been built.

Although production ended at Cessna, that was not the end of 190/195 development. Individual owners initiated further improvements, including other flat engines and more powerful radials, up to 450 hp, plus latter-day booster wingtips. Altogether, 88 Model 190s and 534 Model 195s still are on hand. The high percentage of survivors is a tribute, both to Cessna durability and to the care that these classic airplanes receive from their appreciative owners. □

CESSNA 190	Specifications	CESSNA 195
Continental W-670-23 240 hp @ 2,200 rpm	Powerplant	Jacobs R-755A-2 300 hp @ 2,200 rpm
36 ft 2 in	Wingspan	36 ft 2 in
27 ft 1 in	Length	27 ft 4 in
218 sq ft	Wing area	218 sq ft
15.37 lb/sq ft	Wing loading	15.37 lb/sq ft
13.96 lb/hp	Power loading	11.17 lb/hp
2,015 lb	Empty weight	2,020 lb
3,350 lb	Gross weight	3,350 lb
	Performance	
170 mph	High speed	180 mph
160 mph	Cruise speed (at 70% power)	165 mph
1,050 fpm	Initial rate of climb	1,200 fpm
16,000 ft	Service ceiling	18,300 ft
750+ sm	Range	750+ sm