

# Hail Centurion

Shoppers looking for a hearty retract inevitably come around to the Cessna 210

**IN** 2000, Cessna's first retractable single turns 40. No doubt, the engineers employed by the Wichita manufacturer would be amazed to learn that their handiwork is prized as the model enters its fifth decade. So much so that pilots with large families and a penchant for speed may want to take this opportunity to face the general direction of Kansas and salute.

■ Although it wasn't so in the beginning, the Cessna 210, eventually called Centurion, would become one of the most alluring high-performance load-haulers in the business. Its ability to tote a serious load at speeds fully reasonable for the installed power has made the 210 a top seller when new and quite desirable as a used aircraft. In the early days, the 210 struggled to achieve performance parity with the Beech Bonanza but outperformed the crosstown rival in both punch and payload. The first 210s were an obvious step up from the popular 182 of the day, with strut-braced wings and clear familial ties. ■ Mike Gilmore manages his real-estate holdings, but his real

BY MARC E. COOK

PHOTOGRAPHY BY MIKE FIZER





passion is recreation. From his base in Angwin, California, Gilmore makes the trek to Baja California, Mexico, at least twice a year. In 1983, he moved up from a Cessna 182. When asked if he considered any of the 210's competition, Gilmore pauses ever so briefly and replies simply: "No." Didn't you even look at Bonanzas or Saratogas? Shake of the head. "I was a relatively low-time pilot at the time, and the 210 just made the most sense to me. Never gave the others a thought," he says.

Here again is the payoff of Cessna marketing's masterstroke—make the models similar in style, systems, and handling qualities. Do this from the bread-and-butter light singles all the way up the line. Remove or reduce the intimidation factor of progressing to faster, more powerful airplanes and you create a successful sales conduit.

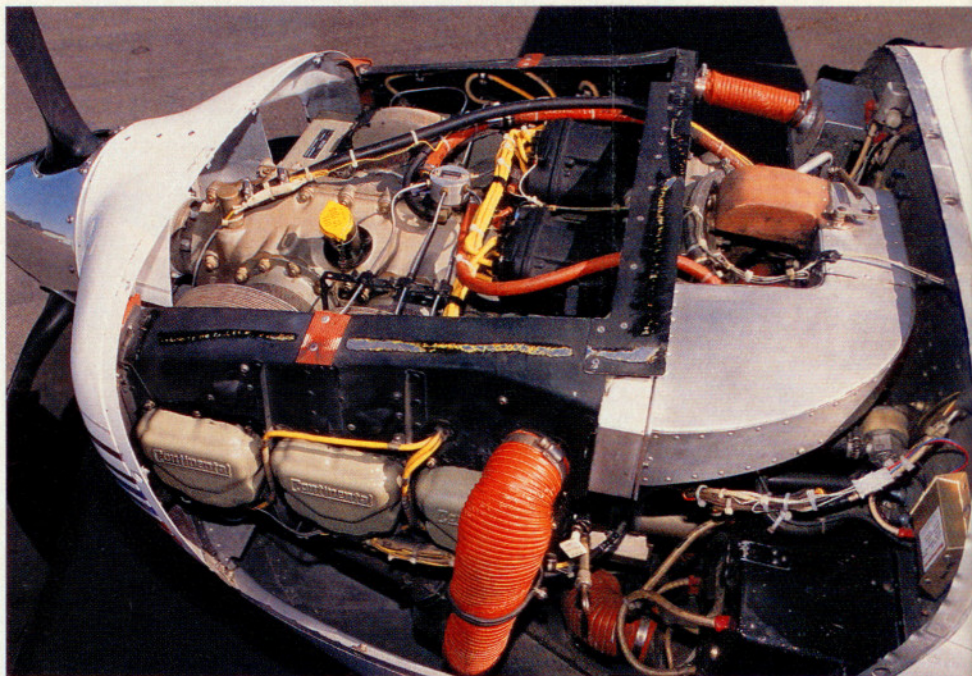
Sitting through the history of the Cessna 210 is a bit like having your college roommate re-spin the account of how he broke into the sorority house in his senior year—it's a tale that doesn't

*All 210s came from the factory with some form of big-bore Continental engine starting with the IO-470 in 1960. By the end of the line in 1986, a 325-hp turbo IO-520 could be had.*

get better with the retelling. (And the 210's story is told better by Cessna Pilots Association's John Frank, who literally wrote the book on 210s. Call 805/922-2580 or visit [www.cessna.org](http://www.cessna.org) to order.) But it is useful to understand that there are several iterations of 210s to fit a wide range of budgets and maintenance

temperaments.

Earliest of all 210s are the 1960 models, actually introduced in the twilight of the 1950s; they are basically 182 airframes fitted with retractable landing gear and a fuel-injected version of the Skylane's 470-cubic-inch Continental, rated at 260 horsepower. The hydraulic







gear system was fantastically complex—related in intricacy if not in motivation to the Ford Starliner of the period, whose hard top retracted into a flip-up trunk. (You get the idea that in the late 1950s we thought we could accomplish any engineering task by throwing more *stuff* at it?)

Cessna got cracking on improving the 210, first by adding more windows and then, in 1962, widening the cabin by four inches. In 1964, the IO-470 was

replaced by an IO-520 of 285 hp, while a turbo version came online in 1966. For 1967 the dowdy struts gave way to a new cantilever wing with 3 degrees of dihedral. Many pilots thought that these first strutless 210s looked funny, so Cessna reduced the dihedral angle by half for the 1969 model, necessitating a rudder-aileron interconnect to maintain suitable directional stability at low speeds. The next year, Cessna revamped

*The familiar panel layout from lighter Cessna singles makes stepping up to the 210 an easier affair. The 210 has enough room and useful load to comfortably take four and bags.*

the cabin again, making the 210 a six-placer and switching from four side windows to two large ones.

Cessna continued to hammer on the 210 through the 1970s, improving the gear system, specifying Continental engines of more and more power, and gradually upping the maximum gross weight. In 1979, the 210 reached its height of popularity and, coincidentally, shed its clamshell main gear doors for open slots in the aft fuselage. Ironically, Cessna finished in 1985 and 1986 with the 210R models, a substantially modified airplane that would have suited the company well into the 1990s, had it elected to keep the 210 line open.

Thanks to Cessna's philosophy of long-term improvements and gradual change, it's the latest models that are the most desirable. The 210R—available in 310-hp nonturbo, 325-hp turbocharged, and 325-hp pressurized iterations—is high on the desirability scale, although also depressingly rare. Fewer than 175 R models were built.

N-suffix 210s were built from 1979 to



1984 and form the largest pool of Centurions extant. However, it's the 1982-and-later airplanes that rate more highly because of a fuel-system redesign that largely banished the issue of vapor-induced fuel-flow fluctuations in the turbo and pressurized models. For the first time, there was a Both position on the fuel selector.

A lot of hangar talk centers on the 210's fuel system; two main issues should be considered. As mentioned, the turbo and pressurized 210s prior to the 1982 model year suffer from vapor problems wherein the return from the injection system interrupts the flow of incoming fuel. Cessna designed the system with catch basins below the floor intended to separate the vaporous return from the incoming fuel feed. This system meant that there could be just two fuel lines (one front, one rear) from the tank to the reservoir tanks with no need for a separate vapor-return conduit. It's a nice, elegant engineering idea that didn't work very well. Flow interruptions are most commonly found on hot days but can be easily cured with judicious use of the boost pump and by switching tanks; experienced 210 pilots consider this slightly annoying but otherwise a nonissue. Later models had a

dedicated vapor-return line and larger-diameter fuel-feed lines.

A fair number of 210s have experienced fuel exhaustion, often attributed to improper filling of the integral wing tanks. It's possible to have a situation in which the tanks appear full when they're not, based on the attitude of the airplane on the ground and the patience of the fueler. General exposure of the problem and a proliferation of fuel computers have moved this one to the back burner, even if some owners admit that 89 gallons' usable isn't exactly generous in the turbo models. (Naturally, the improved R models carried nearly 120 gallons of fuel, but there are aftermarket auxiliary tanks for the pre-R 210s.)

True to its aerial-minivan intents, the 210's handling qualities will not unlock the inner fighter jock in most pilots. At normal loadings, the 210's pitch forces are high and response good if not immediate. Roll forces are light, with yaw response in between. With an aft loading, you might be convinced that you've

*The hydraulic landing gear system on 210s can be fussy if neglected. Later models shed the gear doors from the main gear, reducing complexity and maintenance hassles.*

boarded a different airplane, but the 210 nonetheless maintains its trademark Cessna safety-over-sexy handling qualities. As is true with many designs, the early airplanes are more pleasing in handling than the later, heavier models, with the exception of the last-of-line Rs. They received a new, wider horizontal







stabilizer and wingtip extensions, and they also managed to shed the heavy pitch downspring and bobweight. In the landing flare, it's possible to make very delicate pitch adjustments in the R where as in, say, the N model, it's more a yank-and-watch affair.

The experts' consensus marks the 1972 L model as the best point of entry

for those new to the 210. By then, the 210 had the large cabin, cantilever wing, and a revised landing-gear hydraulic system that relied on an electric power pack; this replaced the old engine-driven pump. According to *Vref*, prices for a 210L start at \$89,500, with the turbo model carrying a \$9,500 premium. The airplanes continued to get better from

there; the last-year T210R sells for a whopping \$256,000 on the used market, so says *Vref*.

Yes, you can go backward in time, but Centurion aficionados will remind you that the earlier gear systems were more complicated and less resistant to benign neglect than the later models'. That's not to say the 210 gear system is dangerously fussy or frustratingly unreliable. It is, however, much less tolerant of neglect than other systems. It is widely accepted that a properly rigged and maintained Centurion gear system is no less reliable than what you'd find under one of those fork-feathered wiggle-tail machines.

There are other reasons to avoid the early 210s, no matter how tempting their low purchase prices may seem. (A 1960 Cessna 210 sells for \$47,500, according to *Vref*.) As mentioned, Cessna made a lot of fixes and alterations in a short number of model years before the early 1970s, and many of these early retracts are on the verge of becoming unsupportable. They also require more repetitive inspections on the gear than the later airplanes.

All this talk about landing gear makes Mike Gilmore smile. Mechani-



cally inclined, he has always been watchful of his 210's maintenance. But one day while he was en route from the San Francisco Bay area, he discovered that the gear wouldn't go down. After first emptying a container of hydraulic fluid into the reservoir and seeing it just mist away behind the airplane, he decided that he would not just give up

and belly it in. So Gilmore switched on the autopilot and crawled in the back to see what he could do. Because there are no internal access panels to the main gear, he used a screwdriver to punch a hole through the baggage-bay floor into the main-gear cavity. There he discovered that one of the gear-door actuators had blown out an end seal,


venting fluid and preventing the gear uplocks from releasing. Gilmore tripped the uplocks by hand, crawled up front, opened a cabin door, and pulled the main gear into their downlocks with the tow bar. He had enough fluid left in the system to pump down and lock the nosewheel. The subsequent landing was, as you might expect, an anticlimax.

What, then, is the future of the Centurion? Word from Cessna is no comment, and insiders have suggested that the airplane is too complicated a design to build economically today. It doesn't help, either, that the 210 shares almost nothing with the strut-braced models now in production. Rumors persist of a next-generation 210 replacement that's nothing at all like the beloved Centurion. Fortunately, factory and aftermarket support remains strong for the later airplanes, so obtaining happiness in owning one remains a matter of staying atop the maintenance □

#### 1980 Cessna Centurion 210N

Vref standard value: \$155,000

Specifications		Performance	
Powerplant	Continental IO-520-L 300 hp @ 2,850 rpm for five minutes, 285 hp @ 2,700 rpm continuous	Takeoff distance, ground roll	1,250 ft
Recommended TBO	1,700 hr	Takeoff distance over 50-ft obstacle	2,030 ft
Propeller	McCaughey three-blade constant-speed, 80-in dia	Maximum demonstrated crosswind component	21 kt
Length	28 ft 2 in	Rate of climb, sea level	950 fpm
Height	9 ft 8 in	Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption)	
Wingspan	36 ft 9 in	@ 78% power, best power	173 kt/4.7 hr
Wing area	175 sq ft	6,000 ft	(97 pph/16.2 gph)
Wing loading	21.71 lb/sq ft	@ 65% power, best economy	165 kt/5.9 hr
Power loading	12.67 lb/hp	10,000 ft	(80 pph/13.3 gph)
Seats	6	Service ceiling	17,300 ft
Empty weight, typical	2,300 lb	Landing distance over 50-ft obstacle	1,500 ft
Maximum gross weight	3,800 lb	Landing distance, ground roll	765 ft
Useful load	1,500 lb	<i>All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.</i>	
Payload w/full fuel	966 lb		
Fuel capacity, std	90 gal (89 gal usable) 540 lb (534 lb usable)		

 *Links to additional information about Cessna Centurions may be found on AOPA Online ([www.aopa.org/pilot/links.shtml](http://www.aopa.org/pilot/links.shtml)). E-mail the author at [marc.cook@aopa.org](mailto:marc.cook@aopa.org)*



Atlantic Aero IO-550-N upgrade

## Centurion Heart Transplant

**A newer Continental for the venerable Centurion**

For its newest modification, Atlantic Aero of Greensboro, North Carolina, has specified a more advanced engine model for its stable of engine upgrades for the 200-series Cessnas. With a top-down, tuned induction system and different cylinder heads, the Continental IO-550-N has been rated as high as 350 hp in turbocharged form. Atlantic Aero will use the normally aspirated version putting out 310 hp.

Most nonturbo 206s and 210s come with an engine rated for 300 hp for five minutes and 285 hp continuous; with the 550-N upgrade, these airplanes will have 10 additional hp for takeoff and 25 more for cruise. In addition, Atlantic Aero has developed a new composite cowling for the conversion that should improve engine cooling and, thanks to a pair of flip-up doors, ease preflight inspections. The engine swap will work with the standard cowling, although some rearranging of the induction system will be necessary.

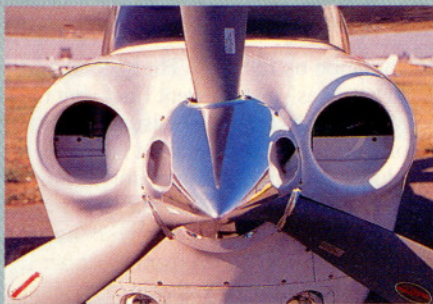
We flew Atlantic Aero's 1974 210 fitted with the IO-550-N and the replacement upper cowling. (The lower cowl remains standard.) Most impressive was the takeoff and climb performance. On a standard day, we saw climb rates in

excess of 1,000 fpm at 135 kt. Atlantic Aero admits that the cowling inlets are larger than they need to be, so the very cool climb temperatures we saw are no surprise.

Leveled in cruise, the testbed airplane managed to duplicate the book figures for a nonturbo 210—about 170 kt at maximum cruise. Remember that this is an early development airplane with larger-than-needed cooling inlets, but even if the cowling were optimized, the additional power would net a mere 5-kt increase in cruise speed. That alone is probably not enough for most 210 owners to justify the \$50,000 total price—including factory remanufactured engine, prop, six-point engine mount, and cowling.

But the climb performance and the exquisitely smooth nature of this engine/airframe combination might just be. In addition, the tuned induction system and crossflow heads create a more fuel-efficient engine than the standard 210's. Atlantic Aero expects the 310-hp airplane to use about the same amount of fuel as the IO-520 models. As an added incentive, the IO-550-N comes with a 2,000-hour TBO, up 300 from the IO-520's.

—MEC



*For more information, contact Atlantic Aero Inc., Piedmont Triad International Airport, Post Office Box 35408, Greensboro, North Carolina 27425; telephone 800/334-2001 or 336/668-0411; fax 336/668-4434; [www.atlantic-aero.com](http://www.atlantic-aero.com)*