A blue and white Citabria 7ECA aircraft is shown in flight, viewed from a high angle. The aircraft features a blue fuselage and wings with white, stylized, wave-like patterns. The registration number 'N93AC' is visible on the side of the fuselage. The aircraft is flying over a dense, green forested area. The title 'CITABRIA LITE THE MYSTICAL AURORA' is printed in large, bold, yellow and blue letters in the upper right corner of the image.

# CITABRIA LITE THE MYSTICAL AURORA

*After 15 years, the Citabria 7ECA  
returns with a new name*

BY ALTON K. MARSH

**A**urora is the name of America's most secret high-altitude spy plane—the one photographed above the North Sea as it emitted smoke rings from its pulse-jet engines at high altitude. So how is it that American Champion Aircraft's new 118-horsepower Citabria 7ECA has the same name? (For national security

PHOTOGRAPHY BY CHRIS SORENSEN

reasons, burn this magazine after reading it.)

"The CIA copied the name from us," insists American Champion Aircraft Vice President Char Mehlhaff, wife of Jerry Mehlhaff, the company president. She's kidding, of course, but the real answer is no less interesting.

Jerry Mehlhaff (pronounced *mel half*) was sitting under the Aurora Borealis in Alaska one night in early 1995 during a market research trip, trying to think of a name for this newest Citabria. (The 160-hp Citabria Explorer, which his family named, was introduced last year. See "Airbatic Rerolpxe," October 1994 *Pilot*. A 160-

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*The answer was dancing in the northern lights above, and waiting on the showroom floor.*

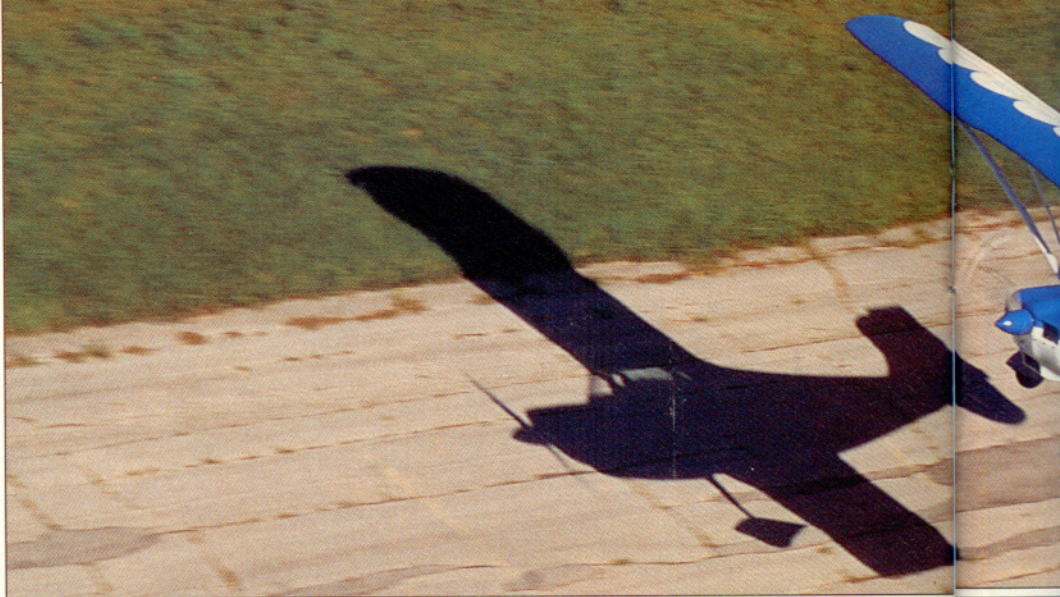
hp Citabria without flaps, to be named Adventurer—which he also didn't get to name—will debut next year.) He coincidentally had been shopping for what his son, Jerry Jr. (who works for American Champion as an aeronautical engineer) calls a grandpa car, a big automated couch on four wheels. Hmm, what to name the airplane? Suddenly, it was obvious.

"He had a mystical experience," Char jokes. The answer was dancing in the northern lights above him and waiting on the Oldsmobile showroom floor: Aurora. In defense, Jerry Sr. says he actually wanted to name it Citabria Lite, "...but everybody booed and hissed."

A mystery no longer, the tube-and-fabric tandem-seat aircraft emerged in July from the final assembly hangar on the Wisconsin farm where the Mehlhaffs have lived for 25 years. The building is one of three that make up the American Champion Aircraft factory that employs 65 workers, many of them recent grads from nearby aviation technical colleges.

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For takeoff test pilot Dale Gauger and I follow a narrow taxiway to a paved strip in the middle of a field of winter wheat. The setting seems appropriate for a tailwheel airplane that loves the grass, but this is no hayseed operation. Computer-aided design systems whir





in the main building, while a modern painting booth can be found in one of the two large assembly buildings built four years ago.

The aircraft carries a serial number consecutive with the last 7ECA (ECA stands for electrical system, Continental engine, aerobatic) built by Bellanca in 1980. This is the 1,354th 7ECA built, but American Champion has added quite a few improvements. Like those built from 1966 to 1980, the aircraft is still powered with a Lycoming O-235 engine, but now it boasts 118 horsepower for takeoff instead of the original 115. (The aircraft began life in 1964 with a 100-hp Continental O-200 engine.) A new fuel drain valve below the gascolator makes fuel sampling easier. A gap seal makes the elevator more effective. Fuses have been replaced by circuit breakers. There is even a GPS on board this production prototype, which has already been sold to a flight school in Warrenton, Virginia. The customer has also opted for the \$500 sunroof, improving the already impressive visibility from the cockpit. S-turns are not required during taxi, thanks to good forward visibility. There was a slight bulge in the fiberglass engine cowling where it joins the fuselage, but this is, after all, a prototype. (The aircraft is fabric-covered from the cockpit back, including the wings.)

Gauger tells me to bring the tail-wheel off at 40 mph (or 35 KIAS—the airspeed indicator is in miles per hour) and lift off at 50 to 52 mph. Climb-out is accomplished at 70 mph for better over-the-nose visibility. Since the engine is still new, we'll leave the power at 2,500 rpm for cruise, which Gauger says will produce 110 mph. Downwind will be flown at 90 mph, base at 80 mph, and final approach at 65 to 70 mph.

The cockpit has the same dimensions as the Decathlon aerobatic aircraft—neat, attractive, and roomy. (Structurally, the airframe is made from a different size of steel tubing.) American Champion changed the old design by adding a two-and-a-half-inch speaker to the main electrical panel located above the pilot's left shoulder, however, and the FAA threw a fit. Had it been tested for dust, the Chicago FAA official wanted to know? Humidity? Fungus growth? Vibration? At press time a decision on whether to allow the speaker to stay was still unre-

solved. (Preflight inspection revealed no fungus on the speaker, by the way.)

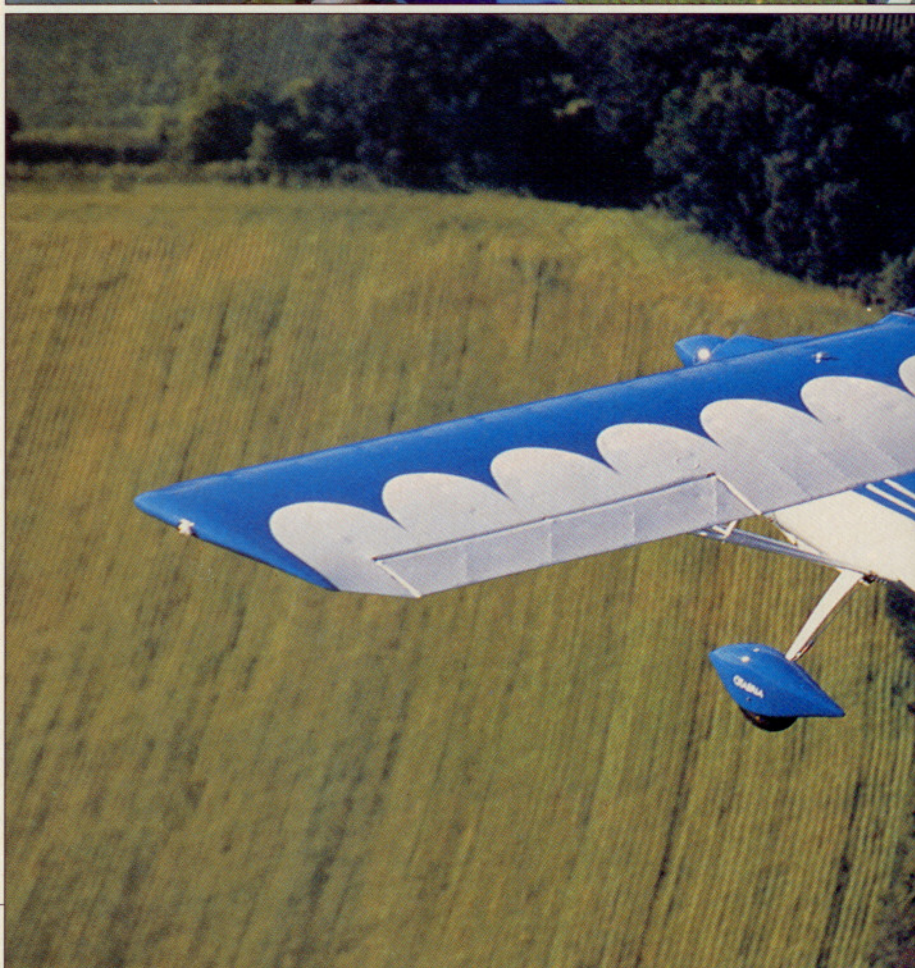
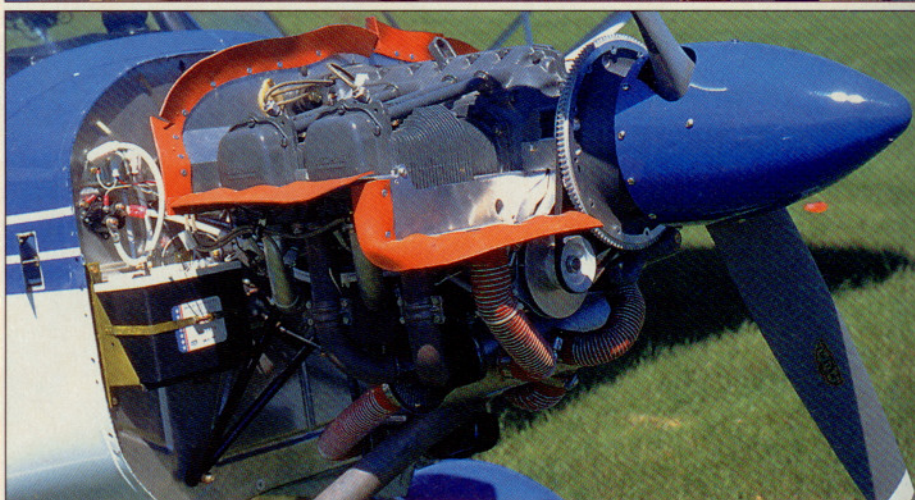
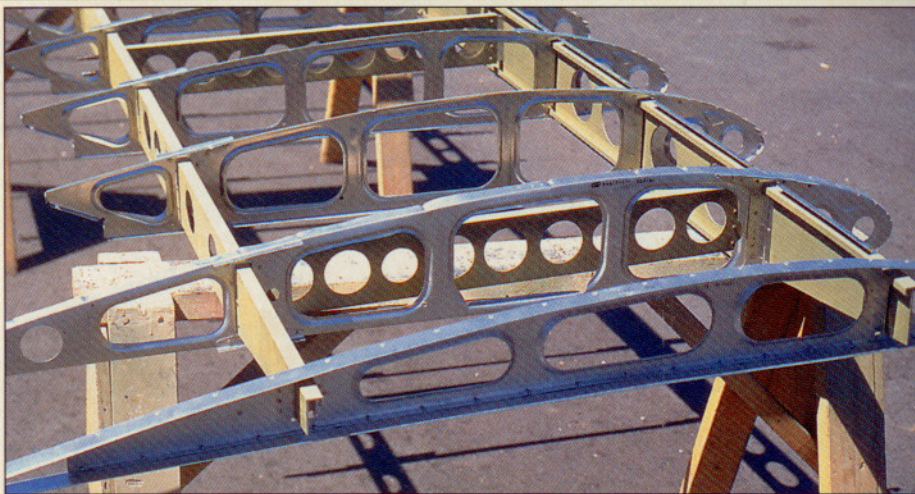
The door on this particular aircraft is the standard door with quick-release hinges for aerobatic flight, but a split photo door similar to that used on the Piper Cub is available as an option for \$495. (Leave the split door open along with the left window, which can be opened and attached to the bottom of the left wing at up to 90 mph, for a wind-in-the-face flying experience.) As with all the Citabrias, the aircraft is approved for 10 aerobatic maneuvers, none of them requiring negative Gs. (The engine would be starved for fuel in a negative-G maneuver.) Inverted fuel and oil systems are not offered on the Aurora, but flight schools will still find it a good tailwheel and beginning aerobatic trainer.

Takeoff is a simple affair, and even

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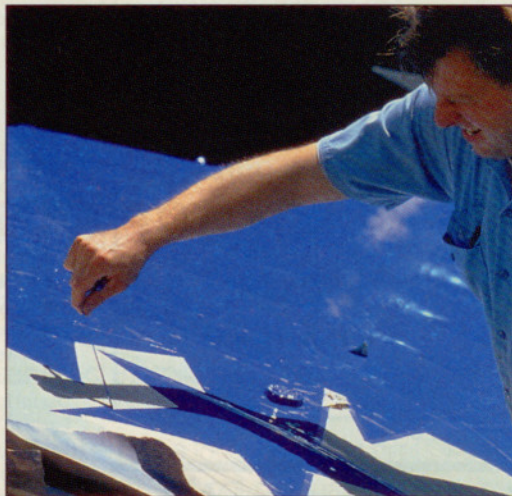
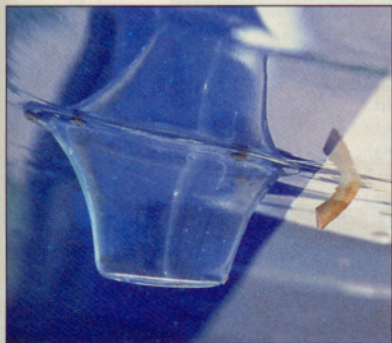
first-time students should have little trouble tracking the centerline. The aircraft climbs away quickly, despite the fact that we are at the maximum gross weight of 1,650 pounds. (The fuel tanks have been left half empty to meet weight requirements.) Flight controls prove surprisingly well rigged, and I find I can fly hands-off in both cruise and slow flight. Stalls are non-events. Especially useful is the quick-adjusting, sliding trim knob—the same one used on the Decathlon and the Explorer—that, with a nudge, sets the attitude for level flight.

Aerobatics are not allowed on this flight, as some testing chores remain, so I settle for coordination exercises, rolling sharply left and right while keeping the nose on a point straight ahead. Normal flight control inputs got us into the air, but it is apparent that stick forces are heavy when the pilot is trying quick maneuvers. I am tempted to use two hands. Aileron spades, a \$550 option not installed on this airplane, will be a valuable addition if the Aurora is to be used as an aerobatic trainer. There is no need for them,





The vent deflector (below) keeps debris from entering the fuel vent and helps pressurize the tank. American Champion has metallized the wing interior.



however, for routine cross-country flights and tailwheel training.

The first three approaches are high, since the Aurora glides well, but forward slips bring both altitude and excessive speed into line. Landings in any tailwheel aircraft can be a challenge, but the primary job in the Aurora—which does not have flaps—is to get the airspeed right, get low over the runway, and wait. The steel spring landing gear has been criticized in the past for launching pilots back into the air, but I think it cushions the landing.

Directional control after landing requires attention but offers little challenge, although the tailwheel obviously did not like the cracks in the 21-year-old runway. The solution was to ease the stick forward during the rollout to relieve pressure on the tailwheel. (Company officials said use of full aft stick on landing is not required and may actually flatten the tailwheel spring.) If tailwheel transition students want an easy time of it, they should probably learn in a Citabria.

During a second flight, a handheld GPS is used for cruise speed tests. Again Gauger asks that we maintain 2,500 rpm to help break in the new engine. At that power setting (which worked out to 68 percent at our altitude), the GPS indicates the Aurora is a 90-knot airplane after wind effect is subtracted. A crosswind from the right on the next landing offers an opportunity to discover that, again, the aircraft prefers to track straight ahead if the pilot will let it. Stay off the toe brakes—you won't need them. The final verdict: It offers a lot of fun for the price.

"The Aurora price allows somebody paying \$45,000 for a Skyhawk, or even \$35,000 for an old Citabria, to reconsider," Mehlhaff Sr. says. "For \$15,000 more, you can get a new airplane. It is the bottom end of our line, the most economical airplane to buy and to fly. It was a very popular airplane for Champion Aircraft and Bellanca," he adds.

The base price of \$51,900 includes everything needed for day VFR operations. A standard operation group including strobes, cabin lights, navigation lights, a landing light, and a bullet spinner will add \$1,690. Another option is a \$4,000 gyro panel package that includes a heading indicator, attitude indicator, electric turn-and-slip indicator, vacuum system, and eight-day clock. Mehlhaff expects to sell 50

aircraft this year, most of them Super Decathlons. But eventually, he expects the Explorer, Aurora, and soon-to-debut Adventurer will account for half his sales.

A Cessna 172 is faster, of course, and can carry more, but you can't roll and loop a Skyhawk. And of course, it offers no mystical experience. □

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#### American Champion Citabria Aurora 7ECA

Base price: \$51,900

Price as tested: \$67,500

#### Specifications

Powerplant	Lycoming O-235-K2C 118 hp at 2,800 rpm
Recommended TBO	2,400 hr
Propeller	Sensenich 72CK8-0, 72-in dia
Length	22 ft 1 in
Height	7 ft 6 in
Wingspan	33 ft 5 in
Wing area	165 sq ft
Wing loading	10 lb/sq ft
Power loading	14 lb/hp
Seats	2 tandem
Cabin length	7 ft
Cabin width	2 ft 4 in
Cabin height	4 ft
Empty weight	1,100 lb
Empty weight, as tested	1,160 lb
Gross weight	1,650 lb
Useful load	550 lb
Useful load, as tested	490 lb
Payload w/full fuel	340 lb
Payload w/full fuel, as tested	280 lb
Fuel capacity, std	36 gal (35 gal usable)
Oil capacity	8 qt
Baggage capacity	100 lb
Wheelbase	6 ft 6 in

#### Performance

Aerobatic performance	+5 G, -2 G
Roll rate	80+ deg/sec
Takeoff distance, ground roll	450 ft
Takeoff distance over 50-ft obstacle	890 ft
Max demonstrated crosswind component	17 kt
Rate of climb, sea level	725 fpm
Max level speed, sea level	121 mph
Cruise speed/endurance w/45-min rsv, std fuel	(fuel consumption)

@ 75% power, 7,500 ft, best economy

115 mph/5.1 hr (6 gph)

Service ceiling	12,500 ft
Landing distance over 50-ft obstacle	775 ft
Landing distance, ground roll	400 ft

#### Limiting and Recommended Airspeeds

V <sub>X</sub> (best angle of climb)	65 mph
V <sub>Y</sub> (best rate of climb)	73 mph
V <sub>A</sub> (design maneuvering)	120 mph
V <sub>NO</sub> (max structural cruising)	120 mph
V <sub>NE</sub> (never exceed)	161 mph
V <sub>R</sub> (rotation)	59 mph
V <sub>S1</sub> (stall, clean)	51 mph

*For more information, contact: American Champion Aircraft, Post Office Box 37, 32032 Washington Avenue, Highway D, Rochester, Wisconsin 53167; telephone 414/534-6315, fax 414/534-2395.*

*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.*

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