



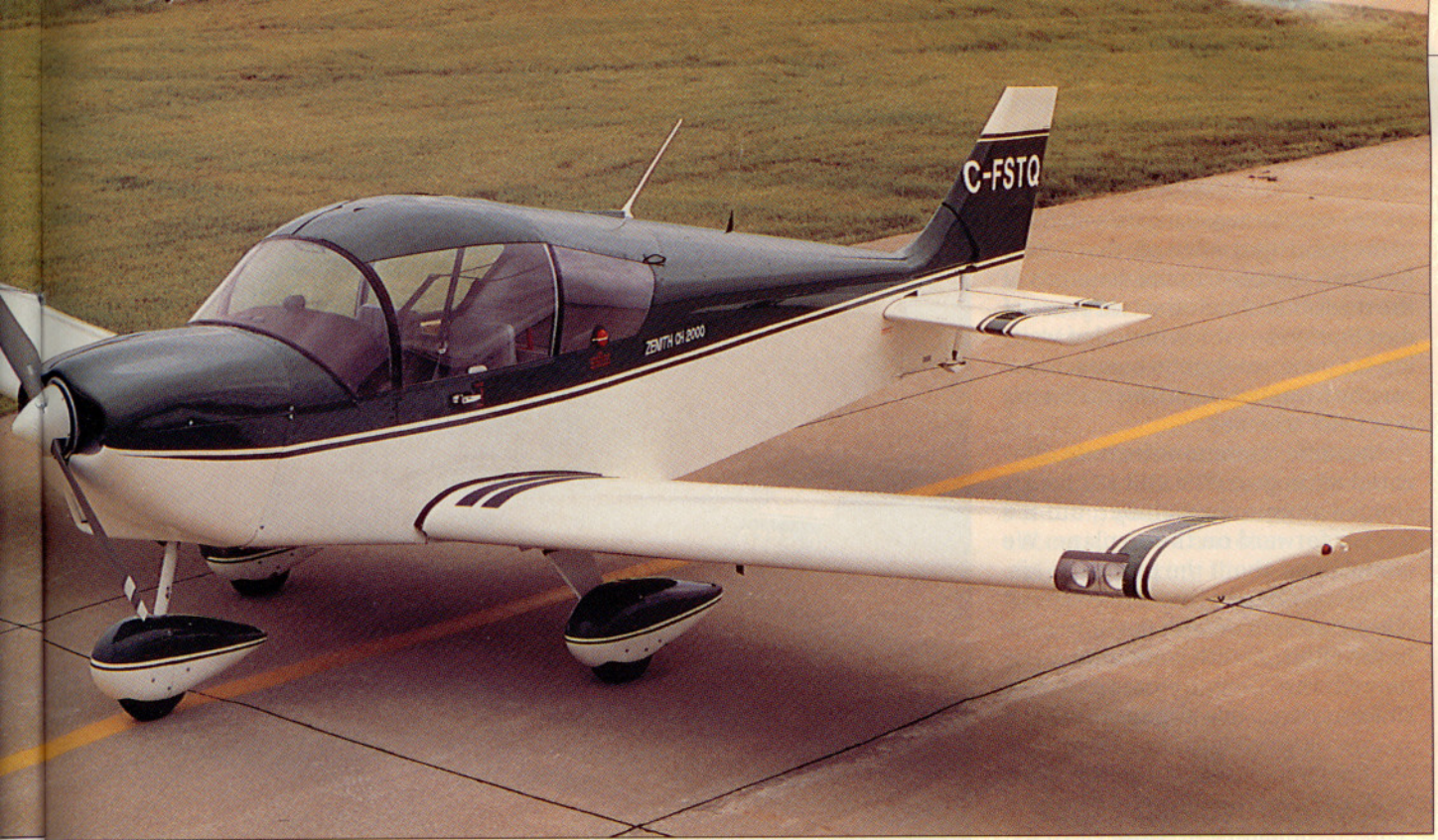
ZENITH CH2000  
**COMING  
TO AMERICA**

*Zenith's new-think trainer finally  
crosses the border*

BY MARC E. COOK

**R**elaxed joint-airworthiness rules notwithstanding, certifying and producing a new airplane still takes time. Just ask Zenith Aircraft, which has been flying a version of the CH2000 trainer for more than two years but has only in the last couple of months received final approval to sell and license the airplane in the United States under the Joint Airworthiness Regulations/Very Light Aircraft rules. Finally, after processing enough

PHOTOGRAPHY BY MIKE FIZER



*An accommodating cabin offers more room than do traditional trainers.*

vernier throttle control—which many flight instructors apparently criticized—is now a standard push-pull knob, and the electrical switch/breakers are now arranged logically in front of the yoke. It's good to see that Zenith has been receptive to the demands of the market and that the two years of development—which included waiting for paperwork to be completed—was not wasted deciding on flashy new paint schemes.

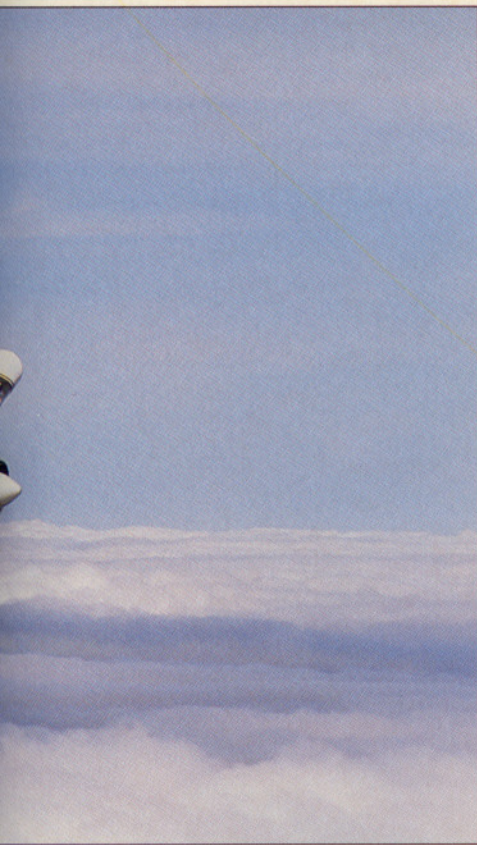
Airframe alterations include relocated main gear. It's still a thick U-shaped aluminum member, but it's farther forward on the airplane. We complained about the prototype airplane's tendency to over-rotate on takeoff, and we weren't the only voice in the choir. Zenith went ahead and moved the gear to compensate. Unfortunately, this also means that if

**A slight resemblance to the Piper Cherokee extends to the CH2000's behavior—mushing stalls and all.**

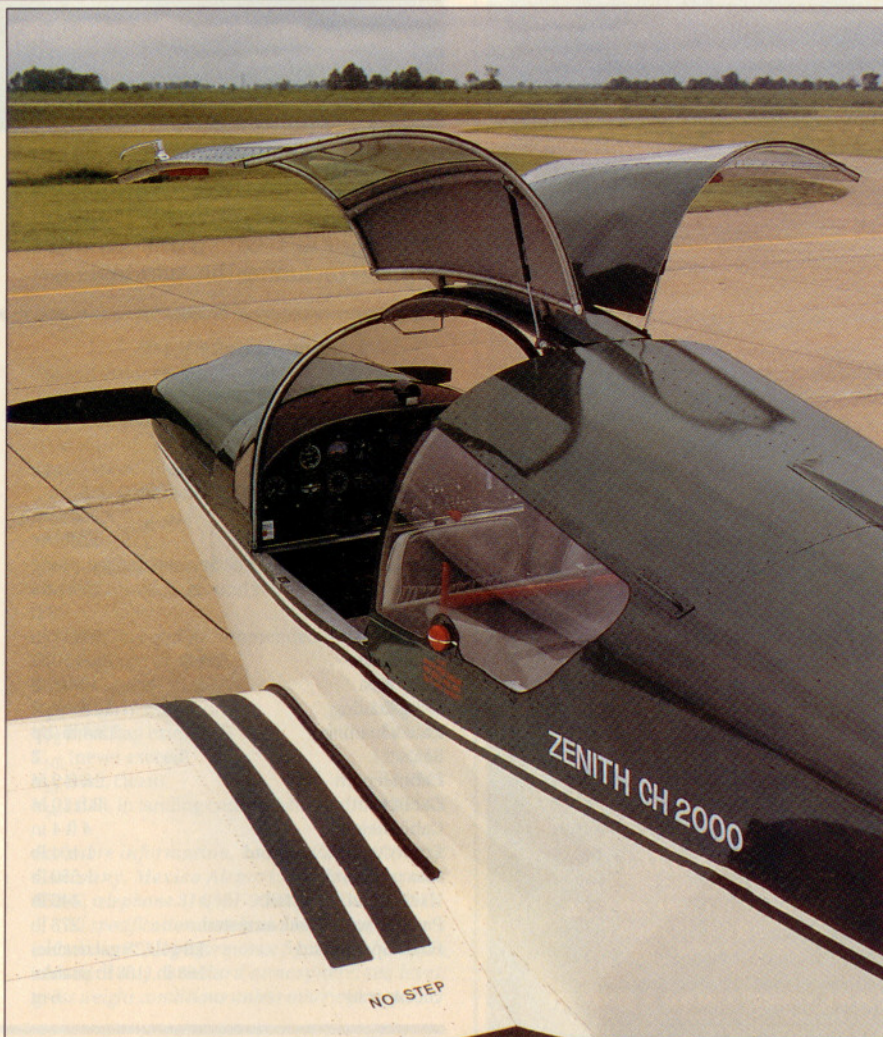
you have one of the models with the fuselage fuel tank, student and instructor will have to board one at a time. Two aviators on the steps at once will send the tail crashing to the ground. Zenith reckons the \$1,800 optional wing tanks (of the same 28 gallons total capacity) will become the standard configuration.

Other systems changes to meet U.S. certification requirements include replacement of the external wire flap-position indicator with an electric gauge, and movement of the trim and flap switches to the center pedestal. Also, Conforfoam seat pads have been made standard; they're wonderfully firm and supportive but also provide important energy-absorbing functions in the event of a vertical impact. The door latches are new, too, but they apparently won't keep anyone from intentionally opening the doors in flight. One of the first CH2000s put in service shed a portal when the pilot opened it to take some aerial photos. Apparently he was not told that you shouldn't do that. The door departed the airplane, but otherwise the flight





*All-flying rudder and gull-wing doors are conspicuous trademarks of the CH2000. Be careful not to open the doors in flight, unless you want to land without them. The thick bar in the cabin (opposite, middle) provides roll-over protection.*



concluded uneventfully.

Fortunately, the beamy cabin remains much as before, with uncommonly broad dimensions—a claimed 46 inches across—and with excellent visibility. There's leg, head, and shoulder room to spare; and the adjustable seat back (the bottom cushion remains locked) provides a useful range of options. It's a far cry from the cramped quarters of a Cessna 152.

Flight reports in other publications called the CH2000 to task for poor handling qualities, based on experience with one Canadian-registered airframe making the rounds as the company demonstrator. Since neither the prototype nor the first U.S.-registered airplane (N200ZA) displayed such a shortcoming—excessive control friction that made stability checks impossible and hand flying arduous—we're willing to chalk it up to one bad apple. In fact, the CH2000 showed us relatively quirk-free qualities, matching control feel and harmony with most of the training fleet. Overall control authority is good—maybe too good in the case of the all-flying rudder, which tends to stop providing feedback near its limits of travel. The stick forces per G are still on the high side for an airplane this light, and the stabilator-system control friction is a bit above average; but we've flown some poorly maintained production machines that were worse. In the grand scheme, the CH2000 probably will not knock anything off your list of best-handling airplanes, but neither are you likely to leave the airplane wishing never again to darken its wing walk.

Flight instructors who prefer an airplane that's a bit more of a challenge—like the 152 or some of the taildragger terrors used as primary trainers before the discovery of fire—will be disappointed in the CH2000. It's more like a Cherokee, with a straight-ahead mushing stall and benign runway traits. (We would like to see the nosewheel a bit less sensitive, but that's a small nit to pick.) Split flaps provide sufficient drag to teach the student about back-of-the-power-curve flying and help to get the nose out of the way for a good view of the runway.

Climb performance on the model we flew was fine, meeting the listed 780 foot per minute from near sea

level and maintaining a 500-fpm climb through 7,000 feet. It does so, however, with a markedly flat-pitch prop. At 80 knots indicated—well above the normal best-rate speed but a velocity that provides good forward visibility—the little Lycoming is churning its heart out at 2,800 rpm, the maximum. Push the nose over and the engine will readily spin past redline. This is a problem waiting to happen with an overloaded or inattentive student at the helm. Fortunately, Zenith certified the airplane with two props, one a

much more moderate, cruise-oriented version that we strongly recommend.

Even with the hair-fine prop in place, we noted a better-than-book cruise speed—at 7,500 feet and 2,800 rpm, the CH2000 posted a two-way GPS-verified run of 103 knots. At a more hearing-friendly 2,600 rpm, the airplane posted a 94-knot average. Pretty decent alacrity for an airplane whose drag reduction obviously took a back seat to ease of construction and maintainability.

Just how well the Zenith holds up to



the rigors of flight training remains to be seen. The airplane's designer, Chris Heintz, has successfully used many of the CH2000's construction techniques—including the Avex blind riv-

ets dotting the CH2000's hide—in homebuilts for more than two decades. And many of the CH2000's features—like bungee-cord springing for the nosewheel and externally

#### Zenith Aircraft CH2000

Base price: \$69,900  
Price as tested: \$76,940

#### Specifications

Powerplant	Lycoming O-235-N2C, 116 hp @ 2,800 rpm
Recommended TBO	2,400 hr
Propeller	Sensenich fixed-pitch, 72-in dia
Length	23 ft
Height	6 ft 11 in
Wingspan	28 ft 10 in
Wing area	137 sq ft
Wing loading	11.31 lb/sq ft
Power loading	13.4 lb/hp
Seats	2
Cabin length	5 ft 9 in
Cabin width	3 ft 10 in
Cabin height	4 ft 4 in
Empty weight, as tested	1,104 lb
Max gross weight	1,550 lb
Useful load, as tested	446 lb
Payload w/full fuel, as tested	278 lb
Fuel capacity, std	28 gal (28 gal usable) 168 lb (168 lb usable)
Oil capacity	6 qt

#### Performance

Takeoff distance, ground roll	700 ft
Takeoff distance over 50-ft obstacle	1,550 ft
Max demonstrated crosswind component	25 kt
Rate of climb, sea level	780 fpm
Cruise speed/fuel consumption	7,500 feet @ 75% power, best economy 100 kt/6.0 gph
Service ceiling	12,500 ft
Landing distance over 50-ft obstacle	950 ft
Landing distance, ground roll	600 ft

#### Limiting and Recommended Airspeeds

$V_X$ (best angle of climb)	60 KIAS
$V_Y$ (best rate of climb)	68 KIAS
$V_A$ (design maneuvering)	104 KIAS
$V_{FE}$ (max flap extended)	80 KIAS
$V_{NE}$ (never exceed)	139 KIAS
$V_{S1}$ (stall, clean)	48 KIAS
$V_{S0}$ (stall, in landing configuration)	43 KIAS

For more information, contact Zenith Aircraft Company, Mexico Airport, Mexico, Missouri 65265; telephone 314/581-9000, fax 314/581-0011.

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.

mounted main landing gear—seem like just the ticket for the bang-and-go world of flight instruction.

How will the CH2000's puppy-dog looks fare against the sleek and sexy shape of the Diamond Katana? It's largely a personal call, of course, and it'll be interesting to see which one comes out unbloodied in a rental-line shootout.

Certainly for those of great size or merely wanting a familiar aviation engine ahead of the firewall, the CH2000 will hold the advantage. In

any event, Zenith makes it clear that the CH2000 has arrived, ready for day and night VFR and, soon, IFR as well. (Diamond is reworking the Katana's construction materials to have some lightning-strike protection before it will be usable in the clag.) Company officials are hopeful—with some justification—that the delays in certification and the subsequent tweaking of the airplane's systems and airframe will overcome the valuable time sucked into the black hole that is aircraft certification. □