

THE PROFESSIONAL FLIGHT INSTRUCTOR

MENTOR

AUGUST 2006



VOLUME 8 NUMBER 8

SPECIAL AUGUST ISSUE

■ Rich Stowell

2006 Flight Instructor of the Year

- 7 midyear ways for CFIs to cut taxes
- Two-Axis Training
How to teach the autopilot
- Sticky Situations
Effects of humidity



Touring Trainer

Liberty XL2: A flight instructor's perspective

by Tom Gilmore, MCFI



This new production two-seat aircraft is sure to be a hit with anyone in the market for a high-tech trainer. It sips the fuel in training cruise, especially with a Continental 125-hp engine combined with the Powerlink FADEC system. Even though it is generally targeted for the training fleet, it could be considered a great short-hop, cross-country aircraft truing out at approximately 130 knots.

The folks at Liberty are located at the north end of Melbourne International Airport in Melbourne, Florida, and test flights are arranged by appointment. Flights last approximately 40 minutes, and the Liberty salesman I flew with already had about 700 hours in the aircraft, so he was familiar with all the operating characteristics of the XL2.

I was looking forward to flying a stick-controlled aircraft again, but was wondering how I would adapt to the fingertip braking system. After several S-turns to the run-up area, it became apparent this system was well thought out for ground taxi operations and posed little transition time. The fingertip brake controls are mounted next to the throttle, and they require some practice while coordinating differential braking and throttle use with one hand.

As I settled into the aircraft, I noticed that the rudders were not properly set to my seating position. When I asked about how to move the seat adjustment, the demo pilot said the seat is permanently positioned. He pointed out how the turn crank located under the instru-

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ment panel is used to bring the rudder pedals fore and aft to a satisfactory position to the pilot. I found it easy to use with a few spins of the crank handle as I brought the rudders to my own personal preference. It would appear that this arrange-

ment would accommodate even the tallest or shortest pilot comfortably.

Run-up checks are quite standard, but there are no magnetos to check in this aircraft, as ignition is provided by the computer-controlled electronic-ignition system. In fact the whole ignition and fuel flow to the engine is computer-controlled. A sequential direct port fuel injection system is used, so there is no mixture control. The engine operating gauges are located in the Vision Microsystems VM-1000 engine monitoring system, which comes to life on engine startup. This is a standard piece of gear in the aircraft. The Liberty's dual redundant FADEC system provides power to the ignition system through the main computer control.

A flap setting of 20 degrees is used for takeoff. The rudder becomes the main source of directional control almost immediately after the power is applied. The aircraft climbed out at a rate of about 700 feet per minute on an 80-degree sea-level day. Control responsiveness is light and solid with flight characteristics more like those of a larger and heavier aircraft. A dual push-rod system is used for ailerons, stabilizer, and rudder controls, so stick forces are light. The aircraft was trimmed for level flight with ease by use of the electric trim mounted in the power console. Once trimmed, it required very little stick pressure to keep the aircraft on heading and altitude.

I practiced steep turns, slow flight, and an approach-to-landing stall with full flaps. All maneuvers were stable and easily performed with a slight break off to the right in the stall. Level off and controlled recovery was made, however, within 100 feet from the entry altitude.

I found the visibility for clearing the traffic area to be fantastic, especially with the large side and front window design. This will be a great

comfort for CFIs in watching for local traffic or during ground taxi operations on the airport.

As we arrived back into the traffic pattern, I again noticed how I appreciated the great visibility with the wide window design. It was an easy setup for landing at about 70 to 80 knots on downwind with a half-flap, 20-degree setting using the electric console switch. There is no carburetor heat or mixture to worry about either with the Powerlink FADEC system doing all the work.

Flaring for the touchdown to a smooth landing was uneventful. There was little float after setup for a 55- to 60-knot full-flap configuration over the fence. A mental reminder told me to use my finger-braking technique to make the next intersection turn. It was more force than I thought would be required as I applied simultaneous pressure to the two fingertip brake controls.

I asked several questions regarding the operating and fixed costs of the Liberty. First of all, the company pointed out that this is a two-place aircraft and insurance costs are less because two-seat aircraft do not carry the liability of four seats. One company has already quoted a price of approximately \$1,800 per year for the average pilot qualifications. This is in line or lower than other new aircraft of comparable value, perhaps because of the design and safety aspects of the Liberty.

The cost should be about \$56 per flight hour for an annual usage of 100 hours. This includes direct operating costs plus insurance. The cost per hour would drop to about \$44/hour if training hours were increased to 200 hours per year.

A large factor in the lower operating costs of the new Liberty is the maintenance. With the tried-and-proven Continental engine and the easily accessible instrument panel, this bird is a breeze to work on. The

fuselage is of modular design and is constructed of high-temp carbon fiber. The wings and flying surfaces are constructed of aluminum. The Cam-Lock cowl fastenings allow for easy access to the engine. The propeller is a two-blade, fixed-pitch composite design, which will occasionally require a re-torque maintenance procedure.

The base price of the Liberty XL2 is currently \$149,900. This includes most of the common base items, including Vision Microsystems VM-1000 engine monitoring system, electric gyro package, cloth seating, and lighting package. The basic Garmin VFR package is \$8,145 for the SL30 nav/comm, GTX 327 transponder/ALT encoder, and intercom. The deluxe Garmin IFR package is \$26,860, which includes two GNS 430s, GTX 327, GMA 340 audio panel, and two GI 106A indicator heads.

That seems to match up closely to the Diamond DA20-C1, but close scrutiny of the operating costs might prove the Liberty a better money-maker for the training fleets.

I was impressed with the Liberty and found the aircraft both fun and easy to fly. I can see there will be a demand to purchase this aircraft, especially if the prices of fuel and insurance continue to rise. Only one design feature has to be worked out and developed, which I found a minor problem while boarding the plane. A step has not yet been designed and installed to get up and onto the wing, but I am sure the folks at Liberty will come up with a quality solution to this before production begins.

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