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Just Reward

That's what this Velocity XL builder g

By Howard Levy



Jean Prudhomme equipped his Velocity XL300 with a 300-hp Lycoming IO-540 and an MT-3 propeller. His XL300 won an Outstanding Aircraft award at Sun 'n Fun '98.

The fun may be in the building and flying, but judges at Sun 'n Fun '98 thought builder Jean Prudhomme deserved something extra for his Velocity XL. So he also took home one of the event's Outstanding Aircraft awards. Prudhomme, of Dania, Florida, is a prolific airplane builder and a 3000+ hour private pilot.

First There Were Others

The 55-year-old, formerly of Joliette, Quebec, has turned out six amateur-built aircraft since 1966. First was an original-design low laminar wing, retractable gear, two seater powered by a 145-hp Continental that was built and flown in Canada in 1966.

After 250 flight hours, Prudhomme sold it to a member of the Canadian Army in 1968. But while flying that airplane, he began building a Flaglor Scooter powered by a VW engine. Construction took eight months and included larger flaps, and its 1400 cc engine was reworked to 1600 cc.

The airplane also proved to be the first VW-powered aircraft to fly in Canada. Cruise speed was 90 mph and landing speed 25 mph. It, too, was sold. Then, in 1971, Prudhomme started construction of two Daphne high-wing, side-by-side two seaters, one with an 85-hp Continental C-85 for a friend, and his own, powered by a 115-hp Lycoming O-235 and Aeromatic prop. Construction for both took two years, and after flying his 145-mph cruiser for three years, it was also sold.

Prudhomme moved to Florida in 1985, continuing with his construction and real estate investment businesses, but he was still interested in sport flying and building airplanes. The interest translated into constructing a 200-hp Lycoming IO-360-C1A-powered Velocity 173RG that flew first in April 1994. After putting 722 hours on the airplane in a 28-month period, Prudhomme sold it to a doctor in North Carolina for what he considered good reason.

"The airplane, although fast and fun to fly, was a bit too small for my 300-pound frame," Prudhomme said. "I also like building as much as flying, and I tend to improve on what I feel are shortcomings in a design. So, I decided to build another Velocity, but a slightly enlarged model to accommodate my bulk.

"Concurrently, the Swing family at Velocity Aircraft was also

after judges saw his airplane.



Prudhomme's XL300 panel no doubt impressed the Sun 'n Fun judges.

looking for a way to satisfy some of its larger customers. Therefore, it was determined that I would start building my airplane at their Sebastian factory, alongside a company prototype. The program might be jointly developed. It first necessitated fabricating new fuselage molds, and during my seven-month stay there, a friend, Gaston Cardin, helped me produce the fuselage, as well as the wing panels and a few other parts. Everything was then moved to my North Perry Airport hangar in Holiday."

The XL300 is primarily built with E- and S-glass in the spars, and triaxial, uniaxial, and crossbite weave fiberglass elsewhere. Cores are polystyrene (blue) foam.

Velocity Aircraft flew its prototype XL, powered by a 260-hp Lycoming IO-540 and MT-3 prop, just before Prudhomme's initial hop. Prudhomme made his flight with his XL300, serial number 002, on July 10, 1997, the airplane powered by a 300-hp Lycoming IO-540-K1E5 engine, swinging a 68-inch MT prop. First flight off the 3000-foot North Perry runway was a gear-down circuit of the airport that was quickly followed by a 45-minute airport area checkout that included gear retraction. For this engine, Prudhomme raised the thrustline 3 inches and extended the cowling length by 5.5 inches.

PHOTOS: HOWARD LEVY

Comparisons

How does the XL300 differ from earlier Velocities? The basic Velocity Elite airframe has been incorporated, although the cabin is now 6 inches wider, measuring 47.5 inches across the forward section and 46.5 inches at the rear. It has also been stretched 10 inches and has 1 inch more headroom over the front seats and 2 inches over the rear seats; the interior height is 43.5 inches forward and 40 inches aft. The fuselage has been slightly reshaped to meet the contour of the door.

Nothing had to be changed anywhere after Prudhomme's initial flight tests, but at a later date, the Lightspeed Engineering electronic ignition system box caught fire due to poor ventilation, and it had to be replaced. Additional air in that area remedied the situation. He also tangled with a seagull at 200 knots over the ocean, off Holiday Beach. It cracked the micro-balloon finish on the left wing leading edge, but a little sanding and a coverup with art worked out nicely.

The XL also employs the Elite wing, but spars have been reinforced by carbon fiber layups top and bottom, and the height of the winglets increased 7 inches. Prudhomme also added ventral fins to the winglets (off at time of photography

Velocity

continued



Touchdown in a Velocity is accomplished without much of a flare; maintaining approach attitude works well.

during a comparative performance testing program, but since refitted). "The bottom fins have improved yaw control, as well as added a few knots to the cruise speed," Prudhomme said. A Velocity 173 canard is used, and its spar is reinforced with carbon fiber.





The Velocity XL300 features even more space than the company's other Velocity models and a usefu load of up to 1060 pounds.

As in some other canard aircraft, rudders on the wingtip vertical surfaces move only outboard, an both can be used together. Pushi on the pedals more also activates wheel brakes.

The Panel

Prudhomme's cabin and instrument panel are something to behold. The panel has more than $30,000 of avionics and other goodies. Included are an Insight Strikefinder, Electronics International altitude alert, Century 2000 autopilot with artificial horizon, Skyforce Skymap II with Porcine Smart Coupler, dual Terra TX-760 com with Terra Tri-NAV-C, Terra TN-200D nav, Terra TRT-2500 transponder, Terra TMA-340D audio panel with marker, Vision Micro VM-1000 engine monitor with EC-100 alarm system and checklist, and a Flightcom DVR-300 I digital voice recorder.

There are also hydraulic gauges and a removable breaker panel, as well as a JVC AM radio with laser disc. An Infinity control stick is mounted on the center console, and rear seat passengers have a Radio Shack television and VHS video cassette.

Cabin heating vent controls are located in the floor, fore and aft, and cooling vents are positioned overhead. Prudhomme designed the panel and cabin arrangement and did most of the installations. A friend took care of the seats, which are covered in a vinyl reproduction of leather. Carpeting is an industrial type, with the backing removed to provide softness.

Velocity Aircraft manufactures the landing gear legs and wheels, fitted with Matco double-cylinder brakes on the mains.

The nosegear is a castering type with differential braking for steering. Tires are by Condor, 5.00x5 forward, and 6.00x6 on the 74-inch tread maingear. Prudhomme has lengthened the gear 6 inches and also added some carbon fiber strengthening.

His XL300, named *Alien* (Prudhomme is an ex-Quebec French Canadian with a heavy French accent) is 300 pounds heavier than the company's because of all the extras he added.

Empty weight is 1900 pounds and gross weight is 3000 pou with a total 90 gallons of fuel carried in two wing ta Wingspan is 32 feet, length is 20 feet (1 foot more than Elite), and height is 7 feet 9 inches.

Flying It

Prudhomme reports that the airplane has a gross-we takeoff run of 1200 feet, and he rotates at 75 knots. He cli 1200 fpm at 110 knots and cruises at 200 knots on 75% po which results in 15-gph fuel consumption and 6-hour endura Pattern airspeed is 100 knots, dropping to 90-95 knots on b and 85-90 knots coming over the numbers. Touchdown is a knots, followed by a 2000-foot rollout. Minimum speed is knots with the gear down.

Kit-building time is said to be 2500 hours, and the Qu Build time is 800-1200 hours, depending on the builder's ca bility. Prudhomme's project took 3500 hours because it required design development time. Construction cost \$125,000.

What is next on the agenda for Jean Prudhomme? By time this appears in print, another XL should be flying. has been helping owner Don White of Buffalo, New Yo fabricate a Quick-Build Velocity at North Perry Airport. T he could very well start work on a turboprop XL, maybe w a 420-shp Allison 250 series engine doing the pushing. "Tha a future project," Prudhomme was quick to explain. Howe reviewing his past projects, we guess that it will probably sooner rather than later.

FOR MORE INFORMATION, contact Velocity Aircraft at 2 W. Airport Dr., Sebastian, FL 32958; call 561/589-1860; 561/589-1893. An info pack costs $29.50.

Thanks to Ron Lueck for providing and piloting his Ae comp Air Comp 6 as a camera plane on the air-to-air ph mission.