

E X T R A 4 0 0

Classy Business

An Extra 300L in pinstripes

Controllers at William B. Hartsfield Atlanta International Airport hardly knew what to make of it, starting with the ground controller. The carbon-fiber airplane's designator wouldn't come up in the FAA computer. The controller—after fiddling with his computer without success—came back with a nonstandard communication: "What is that? A jet?" ■ "It's a single-engine piston aircraft," Aero Sport marketing official Mike Slingluff offered. Aero Sport, located in St. Augustine, Florida, is the U.S. distributor for Extra's aerobatic airplanes, and will now sell the Extra 400 six-passenger business aircraft. ■ "It's an EA-400, Extra 400," Slingluff added. He would be the pilot in command for the 350-horsepower aircraft's first flight in America. "No, it's an E400," corrected the airplane's designer, Walter Extra, sitting in the right seat. (EA-400 is the manufacturer's model designation, but E400 is the ICAO flight-plan identifier.) The only thing certain was that it was a new airplane, one never seen in America before. ■ Already certified for

BY ALTON K. MARSH

PHOTOGRAPHY BY MIKE FIZER

IFR flight in Germany and for VFR flight in the United States (it won't be sold as a VFR-only aircraft), it is scheduled to get IFR certification from the FAA this month. Certification for flight in known icing conditions is expected in a few months.

Atlanta's Hartsfield can be a scary place for the average general aviation pilot, but not on the day of our flight. Sure, an airliner was launching every couple of minutes, and at 9 a.m. the first airliner conga line of the day began heading for one of the five parallel runways. But by Hartsfield standards, the place was as quiet as a grass strip.

The Extra 400 had flown to Atlanta from Germany, but did so partially disassembled and riding in the back of a Lufthansa 747. The technical crew that would reassemble it was aboard the 747 as well. The Extra 400 had arrived like any traveler, a little tired and needing to gather itself (in this case, its parts) together. That was done in a corner of a Delta Air Lines maintenance hangar.

"It's an Extra 400, the first one in the country," he told the controller, sounding like a proud papa.

Now, the 400 was ready to launch for the first time from American soil.

The Continental TSIOL-550-C Voyager series engine came to life, and the 400 climbed over Atlanta at 1,000 feet per minute despite the full load. In this particular 400—one that is equipped with optional radar—the payload with full fuel is 510 pounds. The engine has water cooling to supplement cooling provided by the oil system, a system that all but eliminates concern about shock cooling. While the payload with full fuel is slightly less than that of a New Piper Malibu Mirage, the payback comes from moving the passengers and cargo at a claimed 235 KTAS at 25,000 feet—about 10 kt faster than the speed claimed for the Malibu. The standard price of the pressurized Extra 400 is \$937,500. The 400's price includes an electronic flight information system. (Extra 400 options include a Sony CD player, Bose headsets, a Honeywell Bendix/King color weather radar, and a Thomen drum altimeter.)

The Atlanta ground controller's confusion was repeated by other controllers along the route to St. Augustine. There was also confusion about the aircraft's German call sign. The 400 was flying under German registration "Delta-Echo-Kilo-Alpha-Foxtrot," giving controllers fits. Finally, Slingluff offered a compro-

mise, "Extra Decaf," and that made the controllers happy.

Once in the air, Extra Decaf was a little grumpy, as are most travelers going through a six-hour time change. A clamp on the engine had moved—it was later discovered and corrected—and was contacting the cowling, setting up a vibration at higher power settings. The rudder trim tab was later found to be a bit off, requiring Slingluff to hold left rudder. Finally, the autopilot, which was new and had not yet been properly set up, operated spastically.

Adding to the list, a fin beneath the tail had been slightly dinged during unloading from the 747. Flying in formation with the Extra 400 was Orlando fixed-base operator owner Bob Showalter, an Aero Sport board member. He assisted during the flight by inspecting the repaired fin to make sure that all was well, and by fielding questions from controllers. "It's an Extra 400, the first one in the country, and you are going to be

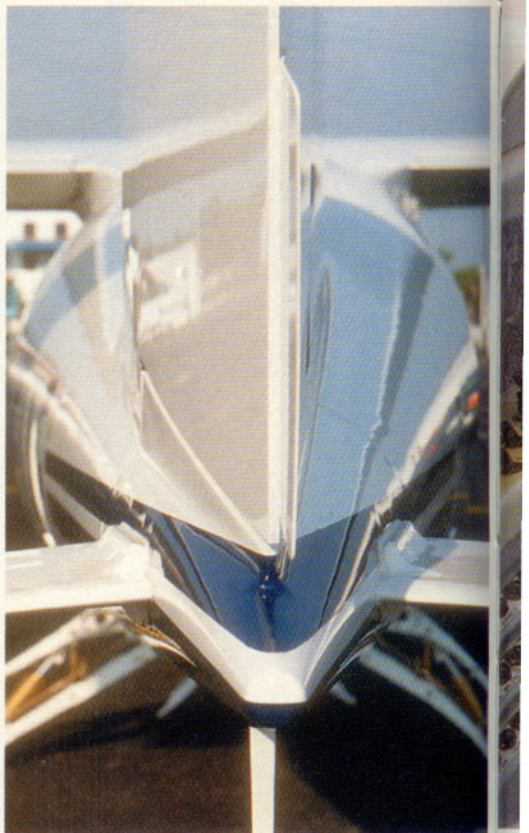
hearing a lot more of them," he told one controller, sounding like a proud papa.

With power throttled back at 15,000 feet to avoid the vibration problem, the dual Garmin GNS 430 moving-map displays (part of the Garmin avionics package that comes standard on the 400) showed groundspeeds of between 209 and 213 kt for most of the trip. Power was estimated to be at about 65 percent. (Subsequent flights, with the engine retuned, the trim tab adjusted, and using maximum power settings, have produced airspeeds of 225 KTAS between 15,000 and 18,000 feet. On a later flight, Slingluff said it flew at 238 KTAS at 22,000 feet. The 400 is expected to operate between 12,000 and 16,000 feet on shorter routes, Slingluff added. Longer flights will generally be flown at 18,000 to 20,000 feet. The pressurized aircraft can operate up to 25,000 feet.)

The original plan was that I would fly the aircraft from Atlanta to St. Augustine, but when the new-airplane gremlins showed up, it seemed prudent not to change crew in flight. Stretched out in the back like a pampered executive, I could extend my legs the full length of the comfortable club-seat cabin. There is no external baggage door. Baggage is loaded by tilting down the rear right seatback. Slingluff said that the seat-



The vertical tail has an airfoil section that eliminates the need to offset it to the left. The panel shot shows the configuration for production models (right).







The pressurized cabin features club seating. The emergency exit is located above the pull-out table (right). Entry is via a split cabin door (below).

back will be reinforced to withstand numerous suitcases sliding over it. The split cabin door operates like that on most business aircraft of similar size. The bottom half lowers to provide steps for passengers, while the top half raises out of the way for easy access.

We made quite an arrival in St. Augustine, where local television and newspaper reporters waited. An Aero Sport official radioed on unicom that the reporters would like a flyby. Walter Extra, a world-class aerobatic pilot and designer of the Extra 300, 300L, and 200, was happy to oblige with a couple of low passes. A headline in the *St. Augustine Record* the next day read, "Extra! Plane Assembly Business Coming," and reported that the aircraft arrived "growling like a hot rod."

Taxiing in, we discovered one final problem. The left landing gear struts had lost pressure, resulting in the aircraft's leaning to the left—a problem that had not been apparent during reassembly or on takeoff. The problem was later easily fixed, Slingluff said.

Within hours of our landing, it was my turn for a brief flight; time was limited by the demonstration flight schedule, Aero Sport officials said. (At press time there were 15 deposits of \$10,000 each from customers. Twenty 400s are scheduled to arrive in the United States this year, with up to 50 expected next year, assuming a manufacturing facility is completed.)

The aircraft is a T-tail, and like any T-tail, the amount of force required on the yoke for takeoff can be heavier than that required for an aircraft with a conventional tail. Walter Extra suggested a healthy pull at 65 kt. Mine was a bit too enthusiastic, and we quickly shot up 20 to 30 feet before I lowered the nose for a slower ascent. The POH suggests waiting until reaching 70 kt before rotating. Climbout was flown at the best rate of climb—100 kt.

A few minutes after takeoff—about two—I was flying the Extra 400 in formation for photos. The Extra 400 easily met the requirement for precision maneuvering. Control forces were light, unlike those of so many large piston-engine business aircraft. In Germany, Walter Extra has done loops and aileron rolls. While it won't be certified in any country for aerobatics, it is nice to know that the aircraft has the strength to withstand the meanest



storm. Consider the Extra 400 to be an Extra 300L in pinstripes.

Following the photos, I had only about 10 minutes to do steep turns, stalls, and slow flight before Walter Extra took over for demonstrations. Stalls were generally docile, and the airplane was a pleasure to fly—solid, yet not truck-like; more like a sports car. I did have one stall in which the left wing dropped, but Extra said I had overcontrolled the rudder, not to mention getting the nose 30 degrees up to initiate the stall. (I tried to hurry the stall.) Rudder technique required a little practice, or perhaps the better word is *knowledge*.

The airplane's design is unusual in that the vertical fin does not have the traditional offset as in most aircraft. Manufacturers use several methods to counteract the left-turning tendency of torque during straight-and-level cruise flight. Some increase the angle of attack of the left wing, and then offset the vertical stabilizer to the left slightly to compensate for the increased drag that this causes, according to the FAA's *Pilot's Handbook of Aeronautical Knowledge*. Walter Extra has a different approach. Instead, the vertical tail has a pronounced airfoil section that produces high and low pressure as the aircraft's speed changes. The design prevents the loss of performance experienced by more conventional aircraft with their offset rudder. When thrust is reduced and the nose is pushed over for descent, the 400's vertical fin loses a bit of lift (or



sideways force in this case) and the pilot sees a very slight yaw to the right. At first, pilots tend to overreact to the yaw. The input needed to keep the ball centered is very slight. The 400's fixed trim tab is used to help correct p-factor during takeoff and climbout. Slingluff has practiced a power-off dive at V_{NE} with feet flat on the floor, and found that the ball stayed centered. The aircraft has no adjustable aileron or rudder trim—doesn't need it, the manufacturer says.

While speed matters to most buyers, it's the aircraft's ability to climb quickly that actually tops Slingluff's sales pitch. "It goes up quickly and can stay up longer, meaning it can start its descent closer to the destination. The 400 has a block-time profile much like that of a turboprop. If it takes all day [for other air-



craft] to get to FL250, and you need three midwestern states to descend, your effective cruise speed is not much," he said.

Speaking of descents, the aircraft does not have supplemental oxygen, but meets certification requirements for a rapid descent to a safe altitude. Flying with an FAA pilot, Slingluff performed an emergency descent procedure from Flight Level 250. The time to descend to 12,000 feet was two minutes and 30 seconds. The test began by dumping the full 5.5 psi of cabin pressure at 25,000 feet.

The pilot technique for the descent is to just slap the throttle to idle and leave the aircraft alone. As Walter Extra demonstrated, you can leave your feet on the floor and just sit back. The aircraft has a very low work load during balked landings and recovery from unusual attitudes as well. In fact, there is little to no critical sequence of procedures for those maneuvers—all part of the designing talent of Walter Extra.

Aero Sport advertises his aerobatic designs as being "From the Mind of Walter Extra," and it is quite a mind. Extra got his start as a financially strapped college student who desperately wanted to fly aerobatics, but could not afford an airplane. So he built one. Now, after many years of flying aerobatics and designing aerobatic aircraft, Extra says he is just about looped out.

Challenge is like food to Extra, and he is hungry. For example, he didn't just take piano lessons as a kid, he became good enough to give classical concerts. (Now he claims he plays only "a little" because his skills are no longer polished to concert-hall perfection.) Recently, he found an orphaned eaglet that did not know it could fly, so he taught it by having it jump first to his arm and then forcing it to use its wings for increasingly longer distances.

His next great challenge in aviation proved to be the business market. Several of the 400s have been delivered in Germany. One has 350 hours on the carbon-graphite airframe with little more than routine maintenance, Extra said.

Like any successful artist, his success comes from attention to the details. For the buyer on the fence, there are little niceties such as a flashlight and an Icom

handheld transceiver (both standard) behind the copilot's seat.

Extra's class act has yielded a classy business machine. □

i Other articles about Extra aircraft can be found on AOPA Online (www.aopa.org/pilot/links.shtml). E-mail the author at alton.marsh@aopa.org

Extra 400

Base price: \$937,500
Price as tested: \$979,950

Specifications	
Powerplant	350-hp Continental TSIOL-550-C
Recommended TBO	2,000 hr
Propeller	MT Propeller composite 4-blade, 76.7 in dia
Length	31 ft 5 in
Height	10 ft 2 in
Wingspan	37 ft 8 in
Wing area	153.5 sq ft
Wing loading	28.7 lb/sq ft
Power loading	12.6 lb/hp
Seats	6
Cabin length	13 ft 6 in
Cabin width	4 ft 7 in
Cabin height	4 ft
Empty weight	3,153 lb
Empty weight, as tested	3,195 lb
Maximum ramp weight	4,407 lb
Maximum gross weight	4,407 lb
Useful load	1,254 lb
Useful load, as tested	1,212 lb
Payload w/full fuel	552 lb
Payload w/full fuel, as tested	510 lb
Maximum takeoff weight	4,407 lb
Maximum landing weight	4,407 lb
Fuel capacity, std	117 gal (107 gal usable) 702 lb (642 lb usable)
Oil capacity	12 qt
Baggage capacity	194 lb, 51 cu ft

Performance	
Takeoff distance, ground roll	1,279 ft
Takeoff distance over 50-ft obstacle	1,706 ft
Maximum demonstrated crosswind component	20 kt
Rate of climb, sea level	1,070 fpm

Cruise speed/endurance w/45-min rsv, std fuel (fuel consumption)	
@ 75% power, best economy	210 kt/4.5 hr
20,000 ft	(128.4 pph/21.4 gph)
@ 65% power, best economy	200 kt/6.3 hr
20,000 ft	(94.4 pph/15.9 gph)
Maximum operating altitude	25,000 ft
Landing distance over 50-ft obstacle	2,030 ft
Landing distance, ground roll	900 ft

Limiting and Recommended Airspeeds

V _X (best angle of climb)	90 KIAS
V _Y (best rate of climb)	100 KIAS
V _A (design maneuvering)	156 KIAS
V _{FE} (max flap extended)	109 KIAS
V _{LE} (max gear extended)	140 KIAS*
V _{LO} (max gear operating)	140 KIAS*
V _{NO} (max structural cruising)	188 KIAS
V _{NE} (never exceed)	219 KIAS
V _R (rotation)	73 KIAS
V _{S1} (stall, clean)	76 KIAS
V _{SO} (stall, in landing configuration)	57 KIAS

* The current POH lists V_{LE} and V_{LO} as 110 KIAS, but they are expected to be changed to 140 KIAS.

For more information, contact Aero Sport, Post Office Drawer 1989, St. Augustine, Florida 32085; telephone 904/824-1995; e-mail mstringluff@aerosport.com; or visit the Web site (www.aerosport.com/extra/extra400.html).

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.