



Dassault Falcon 900LX

Winglets boost range to 4,750 nm, and this newest edition of Dassault's enduring trijet remains every inch a Falcon

by Robert P. Mark

From a distance, the exterior of the Dassault Falcon 900LX—F-WWFB—reminded me of a lady caught without her makeup when I saw her sitting on the ramp outside Epps Aviation at Atlanta's Peachtree Airport (PDK). The LX had just completed the ferry flight from the Merignac, France assembly facility in time for NBAA 2010's static display and was still painted pewter gray with odd patches of the green primer that adorns jets when they arrive at the paint shop. My goal this sunny afternoon was to put the 50,000-pound aircraft through its paces to learn how it compared to the earlier Falcon 900EX.

The 900LX's winglets—the same ones used on the 2000LX—are the only noticeable difference between the LX and EX and allow the new Falcon to fly 4,750 nm (about 5 percent farther than a standard equipped 900EX and 12.5 percent farther than the earlier 900DX). Maximum takeoff weight of the LX remains at 49,200 pounds. After July, though, the decision on which 900 to purchase was made easy, since arrival of the LX means the end of the production line for the 900EX.

Like earlier 900 variants, the LX offers operators

significant flexibility in load-carrying capacity, range and short-field capabilities. The ability to get a 900LX into and out of short runways, for instance, is enhanced because its single centerline thrust reverser sits high above the ground, allowing reverse power to be maintained right up to a full stop. Most other jets require closing the reverser buckets by 50 to 60 knots to avoid sucking FOD into the engine. The heated rear baggage compartment—accessible in flight—stores up to 127 cu ft or just shy of a ton-and-a-half of cargo. The outside cargo door incorporates a step, and Dassault claims one person can load everything. Years of sore shoulders, though, tell me that I'd ask a line person or the other pilot for help before lifting big bags almost to shoulder height for storage (why not a little internal pulley system to ease the lifting of big articles?). Cabin height and width on the 900LX are of course in line with other Falcon models at 6 ft 2 in and 7 ft 8 in, respectively. The 900LX cabin is 33 ft 2 in long, approximately six feet shorter than the 7X's.

Powerplants on all versions of the 900 have remained unchanged, with three Honeywell TFE731-60s producing 5,000 pounds of thrust each.

Dassault is the only manufacturer to offer the seemingly more thirsty three-engined aircraft in favor of the reliability of that extra powerplant, as well as the added performance from short or high runways. Like all other Falcons, the 900LX uses Honeywell Primus avionics as the base platform for the EASy cockpit avionics, featuring four 14.1-inch flat-panel LCD screens and a cursor control device—the aircraft trackball—system now standard on most business jets.

The Flight

More perfect first-flight weather could not have been had in mid October—clear and 20—as I began the preflight of “WFB” with Dassault Merignac chief pilot Frédéric Lascourrèges at my side. To be fair to 900LX competitors, the “green” interior-free aircraft I flew at NBAA was extremely light with a 24,000-pound basic operating weight. A standard-equipped 900LX BOW should end up closer to 26,500 pounds. Even with our planned 9,400-pound fuel load, the airplane still weighed in 15,500 pounds below mtow. This means the standard 900LX will carry a substantial load from London City (LCY)—all Falcons are LCY qualified—with enough fuel to make Gander nonstop.

Dassault Falcon 900LX Specifications and Performance

Price (typically completed and equipped)	\$42.150 million
Engines (3)	Honeywell TFE731-60 (5,000 lbs thrust each)
Passengers (typical)	2 crew + 8 pax
Range (w/NBAA reserves, 200-nm alternate)	4,700 nm at Mach 0.75
High-speed cruise	479 ktas/Mach 0.84
Long-range cruise	426 ktas/Mach 0.75
Fuel capacity	21,000 lbs
Max payload w/full fuel	2,480 lbs
Ceiling (certified)	51,000 ft
Cabin altitude at ceiling	8,000 ft
Max takeoff weight	49,200 lbs
Balanced field length at mtow (sea level, standard)	5,360 ft
Landing distance (typical 8 pax)	2,445 ft
Length	66 ft 4 in
Wingspan	70 ft 2 in
Height	24 ft 9 in
Cabin	Volume: 1,264 cu ft Width: 7 ft 8 in Height: 6 ft 2 in Length (seating area): 33 ft 2 in
Baggage capacity	127 cu ft
FAA certification (basis, date)	FAR Part 25, July 2010
Number built (through date)	1 (as of 11/15/10)

A pre-flight walk around the LX is quick since there's little protruding into the slipstream other than temperature and airspeed probes. After making sure all external doors are locked and that no critters have crawled into the landing-gear wells, it was time to climb in to the left seat, a maneuver made easier since both seats slide back from the panel and then outboard with a reverse process to prepare for flight. I still appreciate the fact that there are aircraft of this category that employ an opening side window for a little fresh air in the cockpit if the systems are shut down. Just remember though—I didn't—that no amount of pulling will open the thing if the cockpit air is running and adding pressure to the cabin. Pre-start checks

include little more than a warning-light test, flip on the APU master and start the APU. Once the APU generator draw drops below 300 amps, all systems can be powered up. A confirmation of the aircraft position to the FMS and we were ready to start the engines.

Since this is still a Falcon 900, engine startup has not changed and we were quickly ready to head toward runway 20L at PDK, except for a brief stop on the taxiway while a Gulfstream carrying the Dalai Lama crossed in front of us on its way to Signature Flight Support. At this weight and even at idle, releasing the brakes meant the 900LX accelerated on the taxiway like an airplane that really did want to fly. Looking back now, I should have tried



The 900LX cabin has familiar dimensions and is about six feet shorter than the 7X's.

pulling the reverser open on the taxiway just to see how that might have affected taxi speed when the aircraft is light. We planned this as a slats/flaps 2 takeoff, and I checked out the left window to verify that the leading-edge devices had fallen into place. There's also a confirmation graphic on the left side of the PFD. At this weight, the system calculated a V1 of 99 knots, Vr and V2 of 112, and a flap retract speed of 137. If we needed to come back due to some emergency, we briefed that I would fly the aircraft and Frederic would run the checklists. Our return ref speed would be 119 knots. It was here that Frederic mentioned that relatively heavy takeoffs—even considering second segment climb restrictions—are a breeze on this trijet, even out of La Paz, Bolivia, where the field elevation is 13,300 feet.

A Gallic Rocket

With dual Fadecs, the three thrust levers could go forward to the stops, upon which the 900LX accelerated quickly. We were airborne in less than half of PDK's 6,000-foot runway and with a mere 10-degree nose-up pitch in the climb, it was tough holding the speed down until 10,000 feet. Steeper than that, though, would have made visibility difficult in one of the world's busiest terminal areas. After that the aircraft was a rocket, with the VSI showing about 3,500 fpm at 250 kias. With a few ATC restrictions, we leveled at FL 200 in seven minutes and the nice folks on the east side of ATL Center's airspace said we could do pretty much anything we wanted once we cleared the arrival airspace near Colliers VOR, where I set up for steep turns to test handling. I helped with some culture shock as Frederic the Frenchman occasionally struggled to understand what the center controller, with a deep Georgia accent, was trying to tell us, jumping into the mix occasionally to assist with the translation—both ways.

Given a chance, as in these steep turns, all Falcons demonstrate their fighter aircraft heritage. In a 50-degree bank at 260 knots and even with the “bank angle” warning sounding in the background, the pilot can easily trim the LX to fly hands off. I tried the same thing at FL 350 just to be sure there were no differences up high, as well as at a lower airspeed to feel the differences. Like any aircraft, the LX is a little heavier in the turns at lower speeds, a characteristic that I also noticed a bit later in the VFR circuit back at PDK.

I was hand-flying the 900 back to PDK, descending through FL 310, when ATC asked for a rapid descent. My instructor nodded and I complied with flight idle, nose-down trim set at an exciting 15 degrees and speed brakes at two. The rate of descent was about 11,000 fpm at 300 knots indicated with the pressurization coping easily. Speed-brake vibration was minimal, meaning that in the clouds the folks in back would never know what was happening. The only thing I really did not like

during the flight was the 900LX's altitude alerter. I realize it has been around in this format for a while, but it simply yells “altitude” when you're within 1,000 feet of what is set in the alerter. Every time it sounded, I thought I'd already blown past the selected altitude.

The first approach was a coupled ILS back to 20L. Our landing weight was just over 31,000 pounds, giving us a ref speed of 114, about what I'd expect in the Hawker 800 I used to fly. The FMS calculated we'd need 2,700 feet to bring the aircraft to a full stop, but in fact we planned to turn the approach into a touch-and-go and remain VFR in the pattern. The autopilot performed well, and at minimums I popped it off to complete the landing. I was a few knots above ref as I crossed the threshold and felt the 900 floated a bit that first time before touchdown. Just after I lowered the nose to the ground, I pushed the thrust levers forward to the stop, waited for the three Honeywell fans to spool up and in what



Dassault's EASy cockpit avionics are built on the Honeywell Primus platform.



seemed like no time we found ourselves in the traffic pattern again for 20L. This time I pulled the center engine to idle and completed the approach on two. The difference between two and three engines was not noticeable, although performing the exercise at this weight wasn't the most effective demonstration. I found the 900LX a tad heavy in roll at traffic-pattern speeds of 140 knots or so. I went to idle thrust at 50 feet, but was on ref speed this time and the airplane had no tendency to float.

Unfortunately, we were out of time for any additional local flying, which also meant no opportunity to gauge the long legs of the 900LX. On the crossing from France, the ferry pilots' data records noted airspeeds as high as Mach 0.83 at altitudes as high as FL430. Having left the factory in France with 18,000 pounds of fuel, they landed eight hours later at TEB

with 4,000 pounds remaining. From my first experience flying Falcons—admittedly the 7X was a great model in which to begin a few years ago at Le Bourget—I've heard a drum beat of chatter about how Dassault builds its aircraft, designed in part and tested by fighter pilots. No other manufacturer can claim the experience of transferring to its business jets the knowledge gained while building fighters of the caliber of the Mirage or Rafale. The Falcon 7X is,

of course, the first fly-by-wire purpose-built business jet.

Years ago while flying a competitor aircraft, I used to listen to a crusty old maintenance chief wishing, day after day, to replace our then current aircraft with a Falcon. For many in business aviation, that same wish list persists today. After a flight of only an hour-and-a-half, it was clear to me the winglet-equipped 900LX is a worthy successor to the 900EX. □