

Falcon 2000EX Makes Debut in Bordeaux

The 2000EX retains the 2000's internal and external dimensions, but dig a little deeper and the differences are considerable.

By Fred George

Dassault Aviation gave the aviation trade press a sneak preview of its new 3,800-nm-range Falcon 2000EX, several weeks prior to its official rollout in late August. In traditional Dassault fashion, the event was as much a celebration of French lifestyle — complete with a field trip to Chateau Dassault, the family-owned vineyard on the north slope of St. Emilion — as it was an official business function.

And while the 1995-vintage Falcon 2000 was a grand cru for its class, the 2003 Falcon 2000EX promises to be even better as its eventual replacement. Slated for JAA and FAA certification in fourth quarter 2002, the EX becomes the fifth member of the current production Falcon Jet family. Initial customer deliveries are scheduled for early 2003. Falcon 2000 production will be phased out later that year, leaving four models in production.

At its July rollout, it was apparent that the 2000EX retains the 2000's external and internal dimensions, not unlike two bottles of Chateau Dassault from different vintage years. Inside the 2000EX container, the differences are considerable. New forward and aft belly fuel tanks boost fuel capacity by 3,800 pounds. The extra fuel enables the EX to fly 3,800 miles with six passengers at 0.80 Mach, an 800-mile boost over the 2000. MTOW has been increased to 40,700 pounds, a 4,900-pound increase over the Falcon 2000.

The 2000EX is fitted with 6,945-pound-thrust, FADEC-equipped, Pratt & Whitney Canada 308C turbofans, providing it with a slightly improved thrust-to-weight ratio compared to the Falcon 2000, which formerly had the best thrust-to-weight ratio of any current production Falcon Jet. Entry-into-service mainte-



Photography Courtesy of Dassault Falcon Jet

Dassault claims more than 50 firm orders for the 2000EX.

nance intervals are 3,500 hours for HSI and a 7,000-hour TBO.

Dassault fitted the EX with more-powerful carbon brakes, along with a brake temperature monitoring system, to handle its higher operating weights. The more-robust brakes have a 25-percent longer design life and no increase in cost per landing.

The EX, though, retains the Falcon 2000's wing with no modifications, so its increased MTOW translates into higher wing loading, resulting in slightly longer takeoff field lengths.

The 2000EX is being positioned by Dassault directly against Bombardier's Challenger 604, an aircraft with a wider, but shorter, cabin. Typically equipped, both aircraft have a nearly identical price tag of almost \$25 million (2001 dollars) for a delivered airplane. Dassault says that when both aircraft are flown at 0.80 Mach, the EX will be able to fly six passengers 275 miles farther than a CL604. If the

Challenger slows down to its 0.73 Mach long-range cruise speed, however, it can fly 4,000 miles — 100 nm farther than the EX at LRC. Each aircraft, for example, can fly six passengers from Paris to New York against 85-percent probability headwinds, but the Falcon 2000EX should be able to do it considerably faster. Notably, the fuel capacity of the Falcon 2000EX is almost 3,800 pounds less than that of the Challenger 604, but its fuel efficiency is better because it flies at higher altitudes and has newer technology engines.

Dassault claims the 2000EX will burn up to 25-percent less fuel than the CL 604 when both aircraft are flown at 0.80 Mach on long-range missions. On typical-length missions, however, the 2000EX will burn five to 10 percent less fuel than the Challenger 604, according to B/CA estimates. Dassault, though, concedes the 2000EX's PWC 308C turbofans will burn five-percent more fuel than the fuel-miserly Falcon 2000's CFE 738 engines.

B/CA projects the EX will climb to FL 370 in 16 minutes — quicker than any current production Falcon Jet and 24-percent faster than the Challenger 604.

The 2000EX will have at least five-percent better take-off field performance at MTOW compared to the CL604, Dassault officials claim. But on 300-, 600- and 1,000-nm four-passenger missions, the EX will need slightly more runway than the CL604, B/CA projections indicate. The Challenger and EX block times should be virtually the same on such missions.

Dassault claims more than 50 firm orders for the 2000EX, not including 49 additional orders from Executive Jet and United Biz Jets, according to John Rosanvallon, president of Dassault Falcon Jet. "We've sold all 28 production units for 2003 and a good portion of our 2004 production," he said. In the future, the 2000EX may account for one-half of Dassault's 80 to 90 production units per year, according to Rosanvallon.

The first 40 EX production units will have the Falcon 2000's Rockwell Collins Pro Line 4 cockpit. After that, the EX will be upgraded with the Honeywell EASy panel, featuring four eight-by-10-inch, flat-panel displays and a graphic user interface. Other 2000EX features include a new digital refueling panel for precise refills, a brake-by-wire computer with double the reliability, and a Falcon 900EX-design bleed-air system computer, along with improved maintenance diagnostics and redundant fuel pumps for better dispatch reliability.

With range rivaling that of the Falcon 900C and a price tag that's \$5 million less, the 2000EX may drain sales from its larger sibling. But the 900C has almost eight feet more cabin length, shorter takeoff field lengths and three-engine redundancy historically favored by Falcon Jet operators for transoceanic trips.

The differences between the 50EX and 2000EX are clearer. The 2000EX, albeit \$4 million more expensive than the 50EX, has quicker climb times, more range, better fuel efficiency and lower operating costs. The smaller EX retains its runway performance advantage due to its three-engine configuration and lower wing loading. "The market will tell us what it wants," Rosanvallon commented regarding future parallel production of all three aircraft. Regardless of the shakeout, Rosanvallon believes Falcon Jet production can be sustained at 80 to 90 units per year, especially in light of the demand in the fractional ownership market. **B/CA**



Typical seating configuration for a Falcon 2000EX

Specifications

	Dassault Falcon 2000EX	Dassault Falcon 2000
B/CA Equipped Price	\$23,031,700	\$21,130,000
Characteristics		
Wing Loading	77.2	67.9
Power Loading	2.93	3.02
Noise (EPNdB)	84.0/89.0/93.0	79.4/86.4/93.1
Seating	2+8/19	2+8/19
Dimensions (ft/m)		
<i>External</i>		
Length	66.3/20.2	66.3/20.2
Height	23.2/7.1	23.2/7.1
Span	63.4/19.3	63.4/19.3
<i>Internal</i>		
Length	26.3/8.0	26.3/8.0
Height	6.2/1.9	6.2/1.9
Width	7.7/2.3	7.7/2.3
Thrust		
Engine	2 PWC PW308C	2 CFE CFE 738-1-1B
Output/ Flat Rating OAT°C	5,918 lb ea/ ISA+23°C	6,945 lb ea/ ISA+15°C
Inspection Interval	7,000	6,000
Weights (lb/kg)		
Max Ramp	40,900/18,552	36,000/16,329
Max Takeoff	40,700/18,461	35,800/16,239
Max Landing	38,300/17,373	33,000/14,969
Zero Fuel	29,700/13,472	28,660/13,000
BOW	23,160/10,505	22,750/10,319
Max Payload	6,540/2,966	5,910/2,681
Useful Load	17,740/8,047	13,250/6,010
Executive Payload	1,600/726	1,600/726
Max Fuel	15,973/7,245	12,154/5,513
Payload w/Max Fuel	1,767/801	1,096/497
Fuel w/Max Payload	11,200/5,080	7,340/3,329
Fuel w/ Executive Payload	15,973/7,245	11,650/5,284
Limits		
Mmo	0.870	0.870
FL/Vmo	FL 250/370	FL 250/370
PSI	9.0	9.3
Climb		
Time to FL 370	16 min.	19 min.
FAR 25 OEI Rate (fpm/MPM)	NA	430/131
FAR 25 OEI Gradient (ft/nm)	NA	207
Ceilings (ft/m)		
Certificated	47,000/14,326	47,000/14,326
All-Engine Service	45,000/13,716	44,500/13,564
Engine-Out Service	27,400/8,352	27,400/8,352
Sea-Level Cabin	25,300/7,711	25,300/7,711
Certification Basis	FAR 25, 2002	FAR 25, 1995

All Data Preliminary