**FALCON 900LX**

35 - 40% GREENER FOR OUR BLUE PLANET

Nature always selects the most efficient design. So can you. On a typical 1,000 nm trip, the new Falcon 900LX uses 35 to 40% less fuel - releasing that many fewer emissions - than anything in its class. The secret? Superior aerodynamics and Aviation Partners' winglets. Lighter-stronger materials. Integrated tri-jet power. And a design optimized for non-stop flights up to 4,750 nm and short airfields.

Visit falconjet.com/900LX for details.

Dassault Falcon

THE TRIUMPH OF BRAINS OVER BRAWN

**900LX**

Reprinted from Altitudes Europe N°22 - December January 2008/09
Smarter, greener and more capable than ever, the latest Falcon 900 makes its own stylish niche with the triumph of brains over brawn. By Robert Goyer
With the creation of its new Falcon 900LX, Dassault Aviation has made more than a little magic. It has, in fact, demonstrated that substantial gains in performance can be achieved not only for free but for better than free. The Falcon 900LX will go substantially farther than previous Falcon 900 models and do it with more flexibility and increased payload. And while the airplane is doing all that, it will be paying you for your trouble.

**Improved version**

With the advent of the Falcon 900LX (expected to earn certification in the first half of 2010), Dassault Aviation has taken its wildly successful super-midsize-plus tri-jet platform and made it into a better version of itself. The Falcon 900, after all, isn’t a new airplane. Unlike Dassault’s flagship Falcon 7X, a clean sheet design with fly-by-wire flight controls and ultra-long range that breaks new ground for Dassault, the Falcon 900 is an established design that is still around because the company got it right to start with. It’s important to remember that for the people in the cabin, an airplane is a combination of comfort, capability, safety and prestige. The Falcon 900 has generously delivered all of those qualities, and it’s been doing it for decades. And this kind of value has kept them coming back for updated models that offer more of the same, more range, better comfort, improved economy and greatly enhanced safety. Since the first Falcon 900 came off the line in 1986, Dassault Aviation has delivered more than 400 various designations of the Falcon 900 model lineup, and it has sold nearly 500 of them. Every one of them, according to Dassault, is still in service today. It’s all a testament to the company’s commitment to updating its products with the latest technology while remaining faithful to the strengths that made the airplane a success to begin with, including the three-engine design. More on that later.

**Aviation Partners’ Blended Winglets**

Now, the secret behind the Falcon 900LX shouldn’t surprise anyone who knows and loves airplanes. It’s the wing. In creating the LX model, Dassault partnered with Aviation Partners to incorporate Blended Winglets into the Falcon 900. There’s not much more to it. With the exception of a few structural modifications for additional support of the higher wing loading, the Falcon 900LX is little different structurally from the popular Falcon 900EX that preceded it and that will be replaced eventually by the Falcon 900LX.
One might wonder why Dassault Aviation chose to give the airplane a whole new designation for the addition of winglets, but when you look at the numbers, it makes perfect sense. The Falcon 900 LX is a substantially improved model. Winglets aren’t a new technology, but in recent years the rate of adoption among business jet manufacturers has increased dramatically. Dassault Aviation resisted the adoption of winglets on its jets and, hence, came to the game late. It announced its first winglet program, putting Aviation Partners’ Blended Winglets on its Falcon 2000 twinjet, just a couple of years ago. The decision, however, resulted in a flood of orders, as customers sought the improved performance and aesthetics that the winglets offer. The idea behind these wingtip devices varies somewhat from design to design, but the general idea is to improve performance by cutting drag and maximizing lift. Winglets do this in essence by bending the wingtip up, thereby increasing effective wingspan significantly without increasing the actual wingspan by much at all. And where the airflow would normally spill out over the edges of the tips, winglets convert that lost energy into additional lift. The Blended Winglets design goes a step further by also cutting drag at the intersection between the tip and winglet.

While the exact aerodynamics behind winglets are a bit of a black art, the results are anything but hocus pocus. Indeed, the performance increases are very real. On the Falcon 900LX, Dassault Aviation expects to get an increase on the order of 5-7 percent across much of the performance envelope, with exactly the same engines as on the Falcon 900EX. While that might not seem like a lot, when you’re talking about big numbers to begin with in terms of speed, fuel burn and operating costs, that seemingly small percentage adds up to substantial performance gains and big savings.

The chief selling point of the Falcon 900LX is, of course, increased range. The new model has an IFR range of 4,750 nm, a 250nm increase over the Falcon 900EX, and good enough for some very impressive intercontinental trips, including New York to Sao Paulo, Mumbai to London, London to Beijing or Moscow to Tokyo, all landing with NBAA IFR reserves. With a maximum cruise speed of around 500 knots (Mach .85) and a typical cruise of better than 450 knots, the airplane delivers good speed even when the range stretches out.

There are several other improvements the winglets bring, including better climb performance for an airplane that was already impressive at expeditiously getting up to altitude. Taking off at its max takeoff weight of 49,000 pounds, the Falcon 900LX can climb to 39,000 feet non-stop in just 20 minutes. For those owners who head to the hills on the regular basis, especially in the summer, the Falcon 900LX will offer improved performance under some of the most challenging situations, namely from higher altitude airports on summer days, so-called “hot and high” conditions. The reason is easy. At high elevations the air is thin, and when it’s hot it’s thinner still, so the wing gets less lift. Under these conditions the winglets can make all the difference between being able to legally make the trip or not.

The Falcon 900LX continues with the iconic three-engine Falcon Jet design. There are real safety advantages, in addition to the sheer beauty of the configuration, to triple-powerplant redundancy. These include lower approach and liftoff speeds, improved peace of mind and possible operational advantages when flying over open stretches of water, better engine-out handling qualities, and very effective thrust reverser braking, with the single reverser located in the tail-mounted engine. Likewise the wing is all Falcon 900. A remarkably advanced wing for its class of airplane, the Falcon 900 features leading edge slats and huge double-slotted Fowler type flaps. Consequently, it can operate from relatively cozy airports even at maximum weight.
EASy Cockpit

Like its stable mates, the Falcon 900LX features the fabulous EASy flight deck, an outgrowth of the Honeywell Primus Epic system. The avionics suite boasts four huge LCDs: a flight display in front of each pilot, a multifunction display in the top center and a system display below that. To operate the intuitive system—with no advance training, I picked up on its operation in very short order—the pilots use a cursor control device to make almost all of the required inputs. With the CCD, the pilot can, for example, go direct to a new flight plan point simply by clicking on it on the moving map display. In addition to ease of use, the suite provides a high level of situational awareness to the pilots, while greatly cutting down on workload (a common factor cited in accident reports) and providing easy-to-access overviews of the airplane’s systems, so if a problem does occur, it’s easy to track down, isolate and act upon.

Dassault Aviation worked for years on the development of the EASy system, and the jury is in on its performance. Pilots love it.

Comfortable cabin

The cabin of the 900LX is the same as its predecessors. This means that it offers a spectacularly comfortable and flexible environment for getting things done en route. The 6-foot, 2-inch center height makes it a true standup cabin, and the 7-foot, 8-inch wide body gives it enough width to accommodate multiple configurations. While the interior can be put together in almost any imaginable way to meet the customer’s needs, a popular choice is a double-club-plus layout, with a divan and work center. The centerpiece of the Falcon design, the captains seats can be moved to and fro for maximum seating comfort, and they can even be fully reclined, to allow for a quick (or not so quick) nap during quiet times. For more serious rest, a rear, side-mounted divan can be fitted for a very comfortable and relatively private sleeping area.

As far as work is concerned, the cabin can also be outfitted with all of the requisite communications and productivity tools, satellite communications (even broadband connectivity), computer networking, video displays, and audio. Reconfigurable worktables of multiple sizes can be used (or stowed) to maximize effective working area while maintaining an open and flexible environment. Always a strong selling point on the Falcon 900, the large, attractive galley is capable of supporting multiple meal services on those longest trips, with ample storage and preparation areas. And the substantial lav, with its gold-plated fixtures and fine finishing, is a great improvement over the more Spartan installations even in some high-dollar business aircraft. And the large heated and pressurized baggage area is accessible in flight and on the ground, a nice feature, especially in cold or rainy climates.

Even though Dassault Aviation has continually improved the Falcon 900 over the years, the purpose of the airplane has remained the same: to provide its passengers with high-style travel at impressive speeds and with great safety and flexibility. The introduction of the winglet-equipped Falcon 900LX model with its greater range, field flexibility and climb performance, reminds us that while the Falcon 900 has been keeping its owners happy for a long time, over the years the airplane has only gotten better and better at its mission.
**Performance and specifications:**

Certification & delivery second semester 2010

**PRICE:** 42,150 Million US$

<table>
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<tr>
<th>Crew</th>
<th>2-3</th>
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<tr>
<td>Passengers</td>
<td>Up to 19</td>
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**RANGES**

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<tr>
<th>Scenario</th>
<th>Distance (NM)</th>
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| LCR, 6 pax, 2 crew, NBAA IFR reserves | 4,750 NM  
| 0.80, 6 pax, 2 crew, NBAA IFR reserves | 4,470 NM  
| MMO                                       | 270-370 kias  
| Max. Certified Altitude             | 50,000 ft  
| Takeoff Distance (BFL) Typical 6 pax, 2 crew, ISA, Full Fuel | 5,120 ft  
| Landing Distance, Typical 6 pax, 2 crew, NBAA IFR Reserves, ISA, FAR 91 | 2,425 ft  
| Approach Speed (Vref) (Typical Landing Weight, 6 pax, NBAA IFR reserves) | 110 kias |

**WEIGHTS/CAPACITIES**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Value</th>
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<tbody>
<tr>
<td>Max. Ramp Weight</td>
<td>40,200 lb</td>
</tr>
<tr>
<td>Max. Takeoff Weight</td>
<td>49,000 lb</td>
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<tr>
<td>Max. Landing Weight</td>
<td>44,500 lb</td>
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<tr>
<td>Max. Zero Fuel Weight</td>
<td>30,664 lb</td>
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<tr>
<td>Basic Operating Weight</td>
<td>25,815 lb</td>
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<tr>
<td>Max. Fuel Weight (10.7 lb/USG)</td>
<td>20,905 lb</td>
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<tr>
<td>Payload with Max. Fuel</td>
<td>2,480 lb</td>
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**ENGINES**

3 Honeywell TFE731-60 - 5,000 lb max. thrust (ISA + 17°C, SL)

**EXTERNAL DIMENSIONS**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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</table>
| Height             | 24 ft 9 in  
| Length Overall     | 66 ft 4 in  
| Wing Span          | 70 ft 2 in  
| Wing Area          | 527.4 sq ft  

**CABIN DIMENSIONS**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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| Max. Height        | 6 ft 2 in  
| Max. Width         | 7 ft 8 in  
| Length             | 33 ft 2 in  
| Baggage Volume     | 127 cu ft  

All performance data is preliminary and subject to change.