

## Dassault's 7X consolidates its place at the heart of EMEA operations

### ME & MY AIRCRAFT FALCON 7X

With three Pratt&Whitney turbofan engines and a swept wing design with winglets, the largest cabin, long range Dassault Falcon7X has been in service for nearly ten years. Today, over 200 are flying in 32 countries and the fleet has performed 250.000 flight hours. Its design draws inspiration from that of a fighter jet but the comparison stops at the frame and technology. As founder Marcel Dassault once said: "Pour qu'un avion vole bien, il faut d'abord qu'il soit beau" – "for a plane to fly well, it must be beautiful."

The 7X has long been the best selling Falcon across all of Dassault's markets and Europe, the Middle East and Africa are no exception to this trend. It has proven particularly popular in northern Europe, Denmark, Belgium, Switzerland, the Russian zone and sub-Saharan Africa.

According to Dassault it is tailor-made for operators who place a premium on mission flexibility and fuel efficiency, yet do not need extra range provided by the 8X or by bigger, more expensive Global jets. Its capability of flying fast, short legs, up to match .90, is an important requirement for some, and this flexibility to adapt to different mission profiles makes it very desirable.



### Sensitivity in start up

There are six 7Xs in Belgian operator **FlyingGroup's** fleet, of which all are on its AOC but not all necessarily available for charter. Its first went into service in September 2009 and having experienced one, the company quickly went on to acquire more. With over 20 pilots trained up it has achieved 11,000 flight hours since that first delivery, and such is the aircraft's popularity that another factory-new model is due to arrive within the next few weeks.

Fly-by-wire technology makes the 7X a little harder to learn to fly. "It requires some considerable study and experience," says FlyingGroup chief operating officer Jurgen van Campenhout. "So what we do in the beginning, for new pilots to the aircraft, is offer them our extended line training programme." Confidence comes quickly however, and he makes the point that the way the aircraft its reliability. The check list sequence at start-up is hugely important and the pilot must follow that carefully. "It's a computer, or really a lot of computers: if you skip anything or rush you may have to turn off and turn it on again," he comments.

**TAG Europe** is currently managing ten 7Xs, of which six are available for charter. They fly mostly out of Europe where they are based but can fly "absolutely everywhere" according to vice president sales and marketing Florent Sériès. The company also has an exclusive sale agreement with Swedish operator iFly on its aircraft, which adds another two 7Xs to the charter availability.

"We have specific charter clients based in Geneva who use the aircraft for really long haul trips and those aircraft are very popular," says Sériès. "Neither iFly 7X has owner release and both are fully dedicated to charter. Last year we sold on average 650 hours of charter per aircraft, which is a lot."

TAG's 7X charter price usually comes in a bit below that of a Global, and quite a bit below the G650's, and the three engines give a bit of flexibility. "We sometimes miss some legs and its range may be a bit short for some of the trips down to Asia or really far away," Sériès adds. "But for 85 or 90 percent of the missions, the aircraft can do it."

To a certain extent he thinks the aircraft are under utilized, and this is true across the whole fleet. "But as soon as you get a flight over four or five hours, The price of a 7X becomes really competitive compare to a Falcon 900, or even a Challenger605, and the difference is so tiny that people will upgrade to the 7X instead flying in a smaller cabin," he adds.

Dubai, UAE-headquartered **Empire Aviation Group (EAG)** has three 7Xs. Executive Director Steve Hartley says: "It is very well-accepted plane within the Middle East region and Dassault has historically been prominent in the UAE." It incorporates the latest technology and locally people are becoming more tech-savvy. "And they like owning the latest technology." He notes.

### **The biggest consideration these days is range**

Similarly, **Luxaviation Belgium** has three, which belongs to owners who want to travel long haul. The 7X suits them in terms of range and also cabin size. "It is great being able to put passengers or a bed in the rear cabin," says sales coordinator Ward Bonduel. "It has the range and offers comfort in travel, plus you avoid fuel stops. From Brussels we can go to San Francisco or Tokyo. And being able to go to the west coast of the USA has added value." It is not only the owners but also the company's charter clients who use the 7X quite extensively, some even exclusively. "For us it really is a plus to have it in the fleet," he adds.

But there is another Falcon in the skies, The 8X. According to Dassault, its introduction has not had a noticeable impact on 7X sales so far; the 7X continues to be a good choice for operators who do not require the extra range.

The 7X also remains attractive proposition due to its price tag. Global aviation director Harm Imming of Switzerland-based **Japat AG** says: "It costs \$5.7million more for the 8X. If you don't need the additional space or range then why change to what passengers perceive to be an almost identical aircraft?" Those passengers may notice the two-decibel sound decrease, but otherwise he thinks you would only change to an 8X if you often fly long range or if you need the extra galley space or larger crew rest area.

Dassault Aviation subsidiary Dassault Falcon Service (DFS) has recently launched a private jet service connecting Paris with Tokyo for Japan Airlines (JAL) passengers. Two 7Xs form part of DFS's all Falcon fleet.

### **Making the best of long haul**

The 8X is a derivative of the 7X with, among other features, a range of longer crew berth and galley area options. But a crew rest area is not really necessary on transatlantic flights and some 7X operators have found that if flying long distance only a couple of times a year, then it may be possible to put one pilot in the jump seat for that trip. Without a crew rest area, The 7X cabin is the same size as that of the 8X with its rest area. And since the 8X was built to fly more than 10 or 11 hours, you really need to have it in there. Director of flight operations for Finland's **Jetflite** Captain Henri Rautiainen is impressed with the 7X's excellent auxiliary power unit, which has a powerful bleed air system that keeps the cabin cool during ground operations, even with extreme outside temperatures. "Our customers appreciate its good [performance in hot climates such as the Middle East, its good range in reaching a number of top destination out of Dubai and the very quiet cabin. These qualities make the 7X suitable for so many missions." He agrees that the choice between 7X and 8X models comes down mostly to price: the extra \$5.7million for the 8X gives you one meter more cabin space and ground 500nm more range. "However, it probably bears mention that some find the 8X looks even better than the 7X. It also has some software updates that are much appreciated in the flight deck and even more interior options that the owners might be looking for," Captain Rautiainen says.

"We have people going to Dubai to Hong Kong and the Far East and the 7X does this easily," continues EAG'S Hartley. "And that is why the G650 has also done well. The 8X improves on this by putting on another 500-800nm, but while this helps a lot it is still not up there with the G650ER or the Global7000." He finds that most people who buy an aircraft for its range capability never actually use it to its fullest. "We have 7X that fly between Dubai and London or Dubai to Paris twice a week. They are not using the full range but at least it's there when you need it."

**Jet Aviation** operates worldwide missions with its Falcon 7X from Zurich airport, often to airports such as London City, Lugano in Switzerland or Camarillo in California. All these have short runways and the Falcon 7X performs very well with steep approaches. Lead Captain Rolf Zeller says: "We also do non-stop trips from London

City to Boston, for example, for which only Falcon 7X is capable; it's approved for LCY's runway but can also cover that distance without having to refuel."

### **Cross model comparison**

EAG's Hartley says: "The 7X is competing with the Global6000 and XRS, and it has also been competing with the G650. Yet the G650 is about 11 feet longer in terms of cabin size. It is also nice and wide, which is another reason it has done well," but another important consideration is its operating costs; "It burns two-thirds of the fuel that a G550 would. I like the aircraft."

While fuel consumption is an advantage, it seems that 7X's lack of two engine limitations is compelling. Having three engines is a source of reassurance for travelers and means the jet can take more direct routes to its destination. According to another operator, it is sometimes possible to get a ferry permit even there is an issue with one of the engines, whereas with twin-engine aircraft, if one engine doesn't work it can't fly.

"We have had barely any delays in over 2,000 hours of flying" – Captain Henri Rautiainen, Jetflite.

However, Bonduel expects to introduce the 8X to the Luxaviation Belgium fleet at some point, thanks to its cabin and range advantages: "Its natural evolution for some of our clients to express an interest in moving towards an 8X, among them current 7X owners."

TAG's Sériès feels there are two things missing on the 7X. "Firstly, the extra range that the 8X is supposed to provide now is missing for some of the tips down to Asia specifically. And one of the biggest challenges is the lack of a standard crew rest area, which limits the operation. It's a shame you can't have full crew and use the full potential of the aircraft."

A few of TAG's owners are thinking about the 8X and although there are no firm purchase plans, yet the company is working on one or two prospects. Sériès adds; "I think it will be a great addition to the market and will compare and compete more closely with the Globals because it will offer the range the 7X may lack. Although the cabin is still slightly under that of the Global series in terms of volume and the feeling of space, it will be interesting to see how that goes. Because there is so much clients are keen to try new things."

### **This trijet doesn't have to try**



So the 7X is an excellent performer. It may not have the range of the Global series, but it has three engines and can make a direct path over water without requiring ETOPS. It doesn't consume any more fuel than its rivals and it can access steep approach airports with short runways such as La Mole, which is off limits to most big business jets.

Jet Aviation pilots undertake a lot of preparation for such challenging flights. As captain and nominated post holder, crew training. Michael Bolli explains: "Lugano airport is situated in a mountainous area and has short

runway that requires a steep approach. The weather has to be good or the aircraft cannot land safely. We are always well-apprised of the local weather for such flights and we are equipped with a second flight plan should the weather not permit a safe landing there."

### **Maintenance vs Management**

Engine maintenance may be covered by Pratt & Whitney Canada's Eagle Service Plan and Honeywell MSP the APU. Field support is provided to AOG by Dassault's GoTeams, and FalconResponse is the OEM'S enhanced AOG service whereby small parts, hand tools and technicians can be flown in to repair disabled aircraft, or indeed to provide supplemental lift to transport stranded passengers to their destination.

Luxaviation Belgium's 7X is cost-effective to maintain because it is fully enrolled on these programmes, which tend to be relatively cheap for the younger models. "Our owners are very satisfied from the point of view of direct operating costs. In the six years they have had the aircraft, costs have been kept under control. But this may change as the aircraft gets older."

For Japat, maintenance is straightforward. "We have our own Part 145 organization with licensed engineers," says IMMING, "and we have good support from Dassault." On the same theme Jet Aviation's Zeller adds: "We have a later serial number and are very satisfied with the dispatch reliability. We have a dispatch rate of 99.3 percent."

TAG's maintenance facility in Geneva is a Falcon authorized service center and thus performs a lot of the maintenance for the 7X. Sériès says: "We are currently operating the third or fourth C-check, but the first one proved that the C-check on a 7X can be complex. That said, we haven't had more issues with the 7X than we have had with other aircraft."

"It costs \$5.7m more for the 8X. If you don't need the additional space or range why change?" – Harm Imming, Japat

FlyingGroup's van Campenhout adds: "The 7X has such good short field and good takeoff performance. We have seen it become much more reliable since its launch; with fly by wire there were some teething troubles but reliability has improved quite a lot since Dassault upgraded the software over the last few years." But he would recommend having the aircraft managed by a company with experience on type. "It helps to improve reliability and to remove glitches," he says.

### **What do customers think of the cabin?**

The main advantage of the cabin is its very low-pressure altitude, which is significantly lower than for other aircraft and certainly for commercial airliners. "At an altitude of 41,000ft the pressure is a comfortable 3,950ft, which is a big advantage," says van Campenhout. "I don't fly in a 7X very often, but I did a few days ago and what really surprised me was that it was so quiet. When it was taxiing I could barely hear the engines running."

He finds the interior finish to be impressive too, and acknowledges that Dassault is known for its quality and high standards. "Of course the cabin is a little bit smaller than that's of the Globals and the Gulfstreams, but our customers seem to like that because it means the 7X is much lighter and consumes less fuel." Direct operating costs per hour are therefore considerably more expensive for those aircraft with similar range and speeds. "So you get a reasonable cheap aircraft, in terms of DOC, for one which does 6,000nm or slightly mach .83/.84 cruise speed."



TAG's client appreciate the cabin configuration and feel quite comfortable on board, despite its smaller size. "Most of our clients who use the aircraft for very long trips usually have no more than four people on board, which then offers the comfort level that they expect," says Sériès. "We have to be realistic too in the sense that it is largely a question of availability. We have got the point where people know that we have eight 7X available, so they contact us, because they know we have the flexibility to offer them the solution they are looking for, whereas we have fewer than four Globals available for charter."

"It is easy for us to offer the 7X because we know that we don't have any owner's release, and as we standardized the pricing, it is easier for us to switch an aircraft when needed."

### **Any tweaks?**

There will always be some things that could be improved, and in the case of the 7X some operators feel that the initial air conditioning flow after APU start-up is too fast and noisy, and most pilots would want cockpit noise levels

to be reduced as much as possible. The jump seat's back rest cannot yet be released to lay horizontal, which would enable an expedited emergency evacuation, and the initial cruise level is around FL390 whereas Japats's Imming would prefer something, above the RVSM upper limit at FL410.

Zeller and Bolli of Jet Aviation would like to see some improvement in the water drainage rate: "While we've never experienced it, poor water drainage can lead to damaged lines. In winter, the water could potentially freeze and burst or puncture the pipes and this would be fairly significant maintenance job as all the paneling would have to be removed to get to the pipes in order to fix or replace them."

Ideally, they would like to see the range increased to that of the 8X while being able to fly at Mach .85. This would limit crew duty issues particularly on long haul trips such as Zurich to Los Angeles. "To ensure the flight crew as well rested and fit, duty time is limited to a certain number of hours, after which the crew must be relieved of duty. An increase range at a higher Mach can help limit crew duty, particularly for long flights, by better ensuring the aircraft arrives on time. Wind, for example, can slow a flight down and if it's already a 12-hour flight under normal conditions, a longer flight would require an additional crew member," they explain.

Jetflite's Rautainen adds that as an operator of long legs, one important improvement he would like to see is better pilot seats, although he acknowledges that these are available as optional equipment. But more than that, he simply notes: "Access doors, the baggage doors, tricky ladders and engine covers are not that easy to use." But this is tempered by his admiration for the 7X: "Did Dassault design too fancy, too modern or too complicated a business jet in the Falcon 7X? I don't think so. It offers some excellent new tools for pilots that give better situational awareness and faster decision making. Overall, the workload management benefits from easy-to-use navigation and performance data as well as from several maximum flight envelope protection functions offered by the fly-by-wire system. Having done several flights with our 7X to the Antarctic, which is not the easiest operating environment, I can say that this aircraft is a good choice," he adds.

## **Resale value**

The 7X has a relatively low resale value today, which creates really good opportunities for potential buyers. Sériès says: "Over the last 18 months the price has really dropped, I would say more than for other aircraft, probably due to the proximity of the first C-checks to come, and the overall overcapacity of aircraft available for sale."

All Falcon jets have traditionally enjoyed a high trade-in value, but according to Dassault the current soft business jet market has led to somewhat depressed resale values compared to previous years and has introduced more unpredictability into the market outlook. And, of course, the introduction of the 8X may tempt some 7X owners to sell and move up.

Luxaviation Belgium is fairly well committed to the Dassault Falcon family of aircraft so Bonduel considers the 8X or 5X to be logical upgrade if range or cabin size becomes more important. "We have the in-house knowledge, the pilots and the maintenance," he says. "We have completely adapted to it and it is a very familiar aircraft for us. To stay in the family would be the most logical, straightforward decision for us. I can't say anything against it."

Dassault itself has a policy of offering new features to its customer base as technologies become available and customer requirements evolve. Current 7X operators, for example, can now take advantage of its FalconSphere Electronic Flight Bag solutions or new high speed Ka-band connectivity options.

## **A complex aircraft for flexible mission planning**

"With a range of just over 11,000 kilometers, The Falcon 7X is best in its class for flights to and from airports featuring short runways and steep approaches up to 6°." Summarizes Jet Aviation's Zeller.

But it is also an aircraft loaded with digital technology and high tech features. Complex aircraft such as this can let you know when something is not quite right, and whereas on its introduction into service there may have been perception that it was often AOG, as pilot knowledge increased so this has reduced.

It is performing well on charter for FlyingGroup as van Campenhout explains: "It's a niche aircraft because it is in that three engine segment where there is no competition whatsoever. And that is partly behind its success too."

Sériès believes it is quite undersold in terms of its values, which makes it very attractive for charter clients but not so much for owners. “We put 700 hours of one of the aircrafts last year, so it is a type that can really sell if you get the right tools, the right crew, the right aircraft and an owner that is willing to charter a lot.”

According to Luxaviation Belgium’s Bonduel, another advantage is that it is a French-made machine with a good reputation, and the image of the aircraft is important. “You have quality and refinement in terms of the finish on board, and it is very quite. This is something that the clients are pleased with.” More importantly it is a trijet: “With three engines you can fly in straighter lines than with just two, so long haul flights take less time.”

“It is a very reliable aircraft,” concludes Rautiainen. “We have had barely any delays in over 2,000 hours of flying. It’s fairly economical to operate due to its lighter operating weight and lower fuel consumption over competitors. But it also has reasonable high maintenance costs. However, show me one long range business jet that is as good and as modern, and which has cheap maintenance cost? There aren’t any.”