



Special Report: **Corporate Aviation**

New stretched jets bring more cabin comfort

As well as making planes go faster and further, leading jet makers are working to enhance the in-flight experience



Hotels in the skies: longer range jets can have elaborate interiors © AFP/Getty Images

MAY 24, 2016 1:00 AM

by: **Michael Dempsey**

Superficial similarities between most business jet designs can obscure the reality of continuous change and development. Speed and range are two obvious aspects of an aircraft where advances yield advantages to the business traveller. But going faster and further does not stop passengers wanting to make the best use of their time in the air.

[Bombardier \(http://next.ft.com/content/f439aa90-12a1-11e6-91da-096d89bd2173\)](http://next.ft.com/content/f439aa90-12a1-11e6-91da-096d89bd2173), the Canadian aerospace group, is working on the launch of stretched versions of its Global series business jet that will offer greater range and cabin comfort.

Brad Nolen, Bombardier's director of product strategies, explains how the Global 7000 and 8000 jets are being built with nonstop flights from North America to Asian locations in mind. Their numeric names refer to their approximate ranges in nautical miles.

This push towards longer-range aircraft is being accompanied by an emphasis on greater comfort and more elaborate interiors. One potential configuration for a large Global series jet consists of four different zones, the first of which is reserved for four seats. The other three rooms inside the aircraft can offer a dining room, bedroom and a stateroom.

"These aircraft are completely customisable" says Mr Nolen. "They can be set up to equal a boutique hotel that transports itself from Sydney to San Francisco." Travelling at just below the speed of sound, Mach 0.925, and at very high altitudes up to 51,000 feet, the Global 7000 will be much more than a swanky hotel with wings, according to Mr Nolen.

Those wings have been the subject of intensive research and are designed to handle high-speed flight and slow landings via slats and flaps that can configure the wing for approaches to shorter runways.

This need for advanced wing technology points to a contradiction that plagues business jet designers. More speed equals shorter journey times, and larger aircraft have the fuel reserves for long-distance flights. But business aviation is about convenience, and the airport closest to the passengers' final destination may not have the long runway required by larger jets. "We want to increase size and comfort," says Mr Nolen, "but we also want to be able to fly into the small, challenging airports with short runways."

Aircraft design is about compromises. A swept wing equates to speed and a straight wing allows for slow landings into limited space. With the fuel load necessary to fly 7,000 miles, a jet will need at least 6,000ft of runway to get off the ground, which in turn limits the number of available departure points.

...

Passengers who are airborne for long flights expect to remain in touch, and Bombardier's Global Series of jets offer satellite-based internet connectivity with enough download capacity to host online meetings or access Netflix.

The company's Challenger 650 jet allows passengers to control the cabin temperature, lighting and window shades using their smartphones. Mr Nolen says all of this convenience is about responding to the need for personal devices to be integrated into the cabin design.

"People are streaming media everywhere so we have to integrate that level of connectivity into the aircraft."

Others are competing with Bombardier in developing and enhancing their aircraft. Textron is the group that includes classic US aviation names such as Cessna and Beechcraft. It manufactures the long-established King Air twin turboprop that covers shorter distances. In its latest iterations, the King Air offers WiFi in its small cabin and incorporates touchscreen displays to lower the pilot workload.

People are streaming media everywhere so we want that level of connectivity on board
Brad Nolen

Roomier cabin space in its mid-range jets is also on the agenda for Textron, which believes that in-flight meeting space demanding greater cabin height and width should not be restricted to longer-range aircraft.

The larger models in its Citation range reflect what Kriya Shortt, senior vice-president for sales and marketing, says is a customer demand for improved working environments that "allows people to be more effective while they are on board".

Flexjet, the fractional ownership business, has improved the odds on a supersonic business jet taking to the skies by placing a \$2.4bn order for 20 Aerion AS2 aircraft.

The AS2 is yet to fly and has no shortage of critics, who point to the substantial technical challenges involved in sustained supersonic flight, the large associated development costs and apparently limited market for such an exotic machine.

Michael Silvestro, chief executive of Flexjet, is undeterred. "There is no question that building and operating a supersonic business jet will not be easy, but we've spent a lot of time with Aerion and so far we are confident they can pull this off."

He talks about taking delivery of this aircraft, which is designed to fly at speeds up to Mach 1.5, by 2024.

Mr Silvestro hopes that the relatively small size of the AS2 will prevent supersonic booms from reaching populations on the ground and hence the jet will be able to negotiate the restrictions that limited Concorde to supersonic flight over the sea.

The potential gains in time offered by boosting jet speeds beyond the sound barrier will appeal to Flexjet's customers, Mr Silvestro says, adding: "Time is much more valuable to executives than it was a generation ago."

Print a single copy of this article for personal use. Contact us if you wish to print more to distribute to others. © The Financial Times Ltd.