

PW1000G selected for 2nd generation E-Jets

Although there are few other details, Embraer has awarded Pratt & Whitney with a contract to exclusively power the second generation E-Jets. Few other details of the aircraft have emerged.

Embraer's proposed second generation E-Jet project gathered pace in January 2013 when the manufacturer confirmed the Pratt & Whitney PW1000G geared turbofan as the exclusive engine provider for the new aircraft.

"We are in the preliminary studies phase with a team of engineers, and product strategy and market analysts working on definitions for the second Generation E-Jets, and we are conducting a lot of discussions with airlines," says Paulo Cesar Silva, president and CEO Embraer Commercial Aviation. "We expect to officially launch the programme in 2013."

Current plans are for the new aircraft to enter service in 2018. "Procurement for all major systems is underway and we will disclose the selections as the programme advances," adds Silva.

At this stage Embraer has yet to decide whether the new family of aircraft will include developments of all of the current E-Jet variants. "We are still assessing the market and talking to our customers to define how many models the new family will have," says Silva. "The exact cabin sizes for the second

generation of E-Jets are still being refined."

What is known is that the next generation aircraft will include new engines, a modified fly-by-wire system and a wing re-design.

The aircraft will be equipped with Pratt and Whitney's PurePower Geared Turbofan™ engines. Specifically they will use PW1700G and PW1900G powerplants. The PW1700G will be rated at 15,000lbs thrust and have a bypass ratio of 9:1. The PW1900G will be rated at 22,000lbs thrust and have a bypass ratio of 12:1.

The PurePower engine improves propulsive efficiency by allowing the engine's fan to rotate at different speeds to the low pressure compressor (LPC) and low pressure turbine (LPT). This way they all operate at optimal speeds.

Pratt and Whitney claims that the engines will deliver double digit improvements in terms of fuel efficiency and environmental emissions. They also claim that it will result in a 50% reduction in noise. The next generation E-Jets will become the fifth type to operate with PurePower engines joining the Mitsubishi MRJ, Bombardier C-

Series, A320neo and Irkut MC-21.

Aileron control will be added to the fly-by-wire system on the second generation E-Jets, while the newly designed wings will offer a higher aspect ratio and subsequently achieve greater aerodynamic efficiency.

One of Embraer's aims with the next generation E-Jets is to introduce improved performance without the risks associated with a completely new design. "We plan to maintain pilot commonality with current generation E-Jets by providing a similar cockpit interface, which makes the second generation aircraft even more appealing to current E-Jet operators," says Silva.

Embraer does not have a launch customer for the second generation E-Jets, but has revealed that a number of airlines and leasing companies have expressed an interest. "Given the characteristics of the new generation E-Jets we believe there will be a number of important customers willing to join the programme from the beginning," says Silva.

There are nearly 900 first generation Embraer E-Jets in active passenger service around the world. The largest operators include Republic Airlines and Shuttle America. Other significant operators include Air Canada, jetBlue and Tianjin Airlines. The E-190 has proven to be the most popular variant, representing about half of the E-Jets in service.

At the time of writing there are 173 first generation E-Jets on firm order backlog, with the largest numbers of outstanding airframes destined for jetBlue and Flybe. The E-190 represents more than 60% of the E-Jet family order backlog.

The main competition for the current E-Jet family is the Bombardier CRJ series of regional jets. A number of new aircraft are now entering the market, however. Sukhoi Superjet has been introducing its SSJ100/95 into airline service, while Mitsubishi's intention is to have its MRJ family flying commercially by 2015. The smaller of Bombardier's new C-Series, the CS100 may also compete with the E-Jets for market share. This growing competition and the advances in performance that the new aircraft represent may have been an important factor in influencing Embraer's decision to press ahead with an upgrade to the tried and tested E-Jet product. **AC**

To download 100s of articles like this, visit:
www.aircraft-commerce.com

Embraer's second generation E-Jets will be powered by the PW1700G rated at 15,000lbs thrust and by the PW1900G rated at 22,000lbs thrust.

