AVIATION WEEK Intelligence NETWORK

Daily Memo: Dassault’s In-Development BizJet Heralds Single-Pilot Operations In Commercial Aviation

Thierry Dubois June 09, 2022

Credit: EasyJet

“Several airframers in commercial aviation are ready to go ahead with single-pilot operations,” says a Toulouse-based professor in an aerospace engineering course. “And they are waiting for one another to go first.”

At least Dassault Aviation, a major player in large-cabin business jets, is the first to talk openly about leaving one pilot alone at the controls in its next design.

Given the size of the in-development Falcon 10X, to be certified under the same category as a 300-seat commercial aircraft, and its ability to fly transpacific, there is no doubt its cockpit will inspire widebody aircraft manufacturers.

In Cologne, Germany, at EASA headquarters, extended minimum-crew operations (eMCO) are still at the rulemaking phase. Talks are ongoing with Dassault engineers in Paris, as both parties want a future regulation to allow advanced technologies to ensure the required level of safety.

At stake is the potential to take off with a crew of two pilots, minus the need for a third pilot to swap out with during a long flight. Part of the concept involves a pilot taking a few hours of rest in the cockpit.

“We will need to monitor the pilot flying’s condition with reliable sensors,” Dassault CTO Bruno Stoufflet says. “And the pilot resting for a few hours will need excellent sleeping conditions in terms of noise environment and cockpit layout.”

A few hours of sleep would be a major increase over the current regulation. Some authorities, such as EASA (but not the FAA) allow naps in the cockpit for a crew of two. They are seen as a sound way to fight fatigue and ensure alertness for the critical landing phase.

For approximately 10 years, EASA has authorized a 30 min. rest period, with the expectation of 10 min. of actual sleep. The operating manual of a major European carrier describes napping as a preventive strategy to “maintain alertness and performance during a subsequent period of prolonged wakefulness.”

In the Falcon 10X, a longer cockpit allows for pilot seats to recline in a full-flat position. Some flight phases involve little work, says David Sebaoun, operations manager, Falcon 7X/8X and Falcon 10X. “For instance, transoceanic flight cruises are typically low crew-workload phases, where one pilot can, on his/her own, check navigation, manage fuel and change radio frequency,” he says.

The pilot flying will be assisted by automation and tools to help in managing unexpected situations, such as challenging weather, system failure or a need to find a diversion airport.

The provisions for eMCO, if implemented, will be part of a cockpit benefiting from a greater level of automation. The Falcon 10X’s auto-recovery mode is designed to help the crew in case of wake turbulence and other situations that may send the aircraft into an unusual attitude. Inherited from the fighter, and activated by a push button, the automated mode returns the aircraft to straight and level flight.

The Airbus Helicopters H160 medium twin, which EASA certified in 2020, has a similar system.