LEAP UNDER TEST: VERY ENCOURAGING INITIAL RESULTS

CFM’s new LEAP-1A engine kicked off its ground tests on September 4 at GE’s test center in Peebles. This milestone marks a decisive step in this program, which will end in 2016 with its entry into commercial service on the Airbus A320neo. We asked Cédric Goubet, CFM program director at Snecma, to bring us up to date.

The first LEAP-1A engine, which is the powerplant for the Airbus A320neo, fired for the first time on GE’s open-air test rig at its site in Peebles, Ohio on September 4. After a series of break-in runs, the engine was operating smoothly and has reached full take-off thrust. It will now undergo further tests for the next few weeks. “Reaching maximum take-off thrust in less than two days, with an engine performing to spec and all right on schedule, well, that’s quite a feat, and very encouraging for future developments”, says Cédric Goubet, CFM program director at Snecma.

THREE YEARS OF INTENSIVE TESTING

The LEAP-1A will kick off this winter a series of icing tests at the GE test facility in Winnipeg, Canada, where winter temperatures regularly dip below -20° Celsius (or -4° Fahrenheit). Tests in France will start early next year at Snecma’s facilities, especially the vibration endurance tests. They will be carried out on a LEAP-1A engine in the configuration that will be certified in 2015. “Each and every engine service entries carried out by CFM was on time, and we always met our performance and reliability commitments. The LEAP program is off to an excellent start to help us maintain this tradition”, says Cédric Goubet.

The overall certification program for the three different versions of LEAP will stretch over the next three years. A total of 28 development engines will be involved up to certification, then 32 more “compliance engines” to support aircraft service entry. Half of these engines will be assembled (and development models tested) by Snecma.

All in all, the 60 engines used during this phase will rack up some 40,000 hours of testing. “It's a real challenge to ensure that this unrivaled program is successfully completed as scheduled, but we're off to a good start. The aim is to carry out an unprecedented number of endurance tests, longer than ever before, since we want to make sure that the entry into service runs as smoothly as possible for our customers”, acknowledges Cédric Goubet.

ON TRACK TO MEET THE INDUSTRIAL CHALLENGE

The LEAP engine has a daunting heritage: it’s the successor to the CFM56, the best-selling engine in the world, with some 25,000 delivered or under order. Developed by CFM International for new-generation single-aisle mainline commercial jets, the new-generation LEAP, that offers significant weight savings, of nearly 500 kg per aircraft, is being offered in three versions for now: LEAP-1A to power the Airbus A320neo starting in 2016; LEAP-1B, exclusive powerplant of the Boeing 737-MAX, and LEAP-1C, very similar to the LEAP-1A, that will power China’s new jetliner, the COMAC C919 (exclusive Western engine).

According to Cédric Goubet, “Snecma is on track to meet this industrial challenge. We have considerably bolstered both our industrial resources and the evaluation processes for all aspects of production.”

Airlines that have already chosen the new LEAP engine include AirAsia, Southwest, Virgin America, Lion Air, Pegasus, Qantas and WestJet, along with dozens of others from around the world. “Counting all applications for the LEAP, CFM now holds more than two-thirds of the engine market for new-generation single-aisle jets. This continues our performance with the CFM56”, says Cédric Goubet as a conclusion.

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