CFM completes LEAP engine early icing tests

- 20 LEAP engines planned to be on test by year-end
- Program on track for LEAP-1A engine certification in 2015

SINGAPORE — 10 February 2014 — CFM International has successfully completed a series of early icing tests on its advanced LEAP engine, one year ahead of required certification testing.

The engine ran for more than 20 hours at GE facilities in Winnipeg, Canada, completing the most severe certification-level test points, in addition to evaluating various icing mitigation configurations as part of the overall risk reduction process.

The engine behaved very well in extremely harsh conditions, validating pre-test predictions and reinforcing the company’s confidence that the engine will certify on time and meet the performance and reliability promises made to its customers.

“This is the most extensive development and certification program in our history,” said Chaker Chahrour, executive vice president of CFM. “The tests we are performing are designed to push the limits of this engine, in addition to certifying it for commercial service.”

In the next few months, CFM will complete early endurance testing and is on track to begin flight testing both the LEAP-1A and LEAP-1C configurations at GE facilities in California.

The LEAP-1A engine is on track for engine certification in mid-2015 and will enter airlines service in 2016.

The LEAP-1C is unique in the industry in that CFM is providing a fully Integrated Propulsion System (IPS) in conjunction with Nexcelle, a 50/50 joint company between GE’s Middle River Aircraft Systems and the Safran group’s Aircelle. An IPS is comprised of a nacelle, thrust reverser, and exhaust system delivered as a complete package. COMAC delivered the engine pylon for the flight test airplane to CFM late last year. The pylon is a key part of the integrated system, providing the interface between the engine and the airplane. Despite announced delays in the airplane program, CFM is maintaining its original LEAP-1C engine certification schedule.
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The next big milestone will come in June when the first full LEAP-1B engine will begin ground testing at Snecma facilities in Villaroche, France.

"We are in the engine build-up phase right now," said Cédric Goubet, CFM executive vice president. "Like the LEAP-1A, this engine will have extensive instrumentation and will track more than 1,500 instinct engine parameters. The hardware is coming together smoothly and we look forward to putting the engine through its paces beginning in mid-June.

"We have been very impressed by how rugged this engine is, and how well it runs," said Goubet. "It is validating all of the technology choices we have made and the billions of dollars and decades of research and development work that are behind it. With each passing day, we become even more confident that the LEAP engine is going to set a whole new standard in this industry."

"We still have a lot of testing ahead of us, and problems may turn up in future engines," added Chahrour. "However, the point of these tests is to push the engine as hard as we can. We continue to get great data that is giving us real insight into this engine, and we are right where we want to be."

The first full LEAP engine began ground testing in September, two days ahead of schedule, logging a total of 310 hours and more than 400 cycles during approximately five weeks of testing. This engine launched the most extensive ground and flight test certification program in the company's history and will encompass 60 engine builds over the next three years and will accumulate approximately 40,000 cycles before entry into service.

The foundation of the LEAP engine is heavily rooted in advanced aerodynamics, environmental, and materials technology development programs. It will provide 15 percent better fuel consumption and an equivalent reduction in CO2 emissions compared to today's best CFM engine, along with dramatic reductions in engine noise and emissions. All this technology brings with it CFM's legendary reliability and low maintenance costs.

About CFM International
The CFM56 and LEAP engines are products of CFM International, a 50/50 joint company between Snecma (Safran) and GE. CFM is the world's leading supplier of commercial aircraft engines, with approximately 26,000 delivered to 530 operators around the globe. The company CFM officially
launched the LEAP engine, which is its first all-new centerline engine in
nearly 40 years, in 2008. The LEAP engine promises to bring double-digit
improvements in fuel efficiency, emissions and noise, while the legendary
reliability and low cost of ownership of its predecessor, the ubiquitous
maintaining CFM56 engine family. The LEAP-1A is an engine as an option
on the A320neo family; and the LEAP-1C engine is the sole Western
powerplant for the COMAC C919; and the LEAP-1B is the sole powerplant
for Boeing's new 737 MAX. For more information, visit us at
www.cfmaeroengines.com or follow us on Twitter @CFM engines.

For more information, contact:

Jamie Jewell
513.552.2790
jamie.jewell@ge.com
Mobile: 513.885.2282

Rick Kennedy
513.243.3372
rick.l.kennedy@ge.com
Mobile: 513.607.0609

Giulia Lecarrié
+33.1.69.87.09.29
giulia.lecarrie@sneca.fr
Mobile: +33.6.42.40.17.19

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