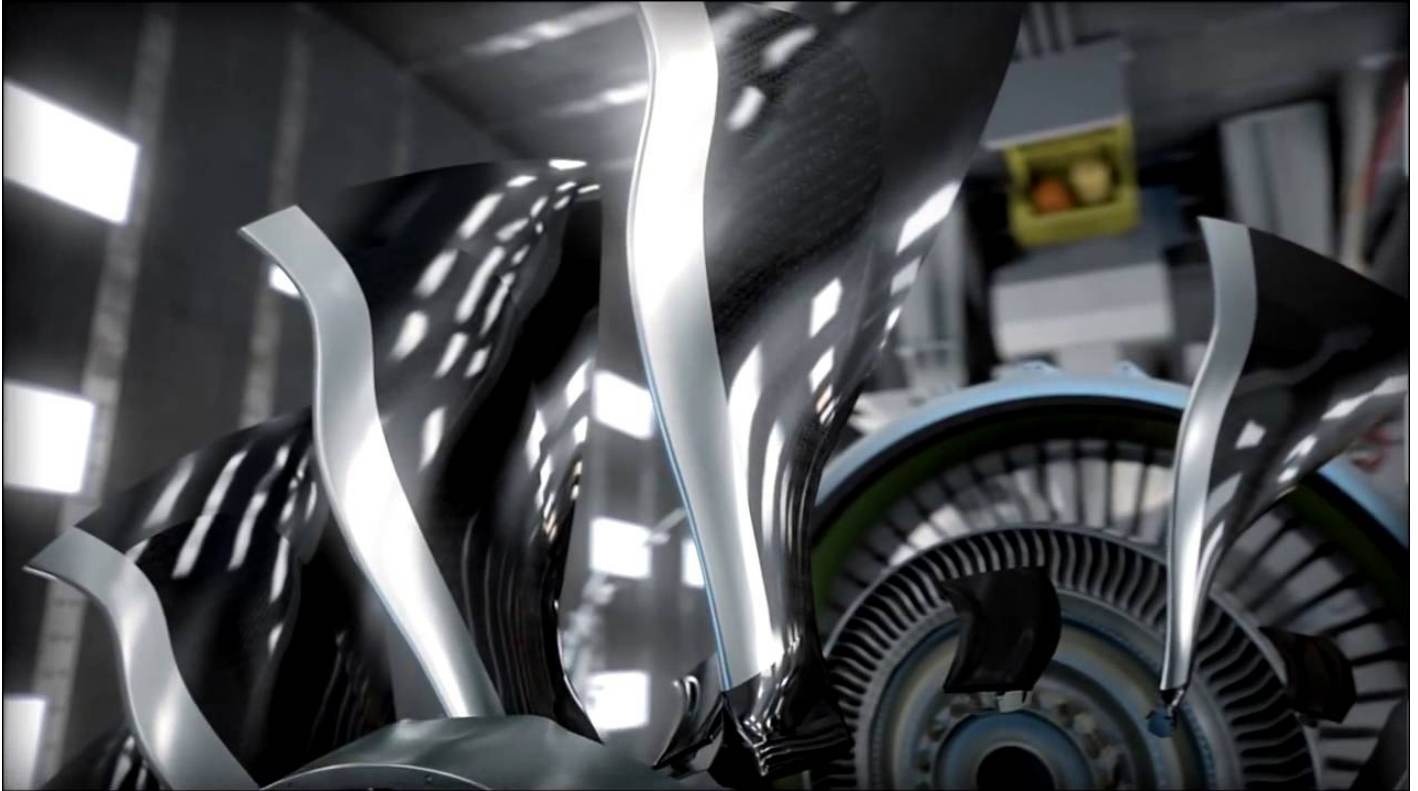




FOR GE9X ENGINE, BIGGER IS BETTER

News / Manufacturer



With a 134-inch diameter front fan, the GE9X engine for Boeing's 777X aircraft will be the world's largest engine—besting the current world's largest engine, the GE90, by a full six inches. To test an engine this size, GE Aviation invested about \$10 million at its Peebles Testing Operation in Ohio. Part of this investment includes the design and manufacture of the largest testing bellmouth inlet duct, which measures a whopping 18 feet in diameter and 12 feet in length.

“The bellmouth inlet for the GE9X engine is the biggest GE has ever used and was built to fit in front of the GE9X's large fan,” said Phil Dietz, GE9X program control board chair at GE Aviation. “The inlet is a one-piece structure that conditions the air entering the engine's fan and enables accurate airflow measurement during engine ground testing.”

Along with the new bellmouth inlet, the Peebles site also installed a fourth fuel tank. “The new tank will provided the necessary fuel supply for GE9X certification testing as well as the increase in production testing of wide-body engines like the GEnx and GE90,” said Brian DeBruin, plant manager for GE Aviation's Peebles Test Operation.

“The GE9X’s 27:1 compressor ratio, the highest pressure ratio of any commercial engine in service, led us to make changes to the pressure system,” said DeBruin. “We also upgraded our engine hoists and transporters to handle the GE9X and modified a wall in our prep building so the engine can be moved after final assembly to make its way to the test stand.”

One area that required no changes was the newest indoor test cell. “Our new indoor test facility, Site 5D, was designed with the GE9X in mind,” said DeBruin. “The test cell, which became operational at the end of 2014, has an airflow system capable of meeting the needs of the GE9X engine.”

The first full GE9X engine will undergo testing shortly and wraps up an extensive technology maturation program that began almost five years ago. In the 100,000 pound thrust class, the GE9X engine features a composite fan case and 16 fourth-generation carbon fiber composite fan blades, a next-generation 27:1 pressure-ratio 11-stage high-pressure compressor, a third-generation TAPS III combustor for high efficiency and low emissions and CMC material in the combustor and turbine. Almost 700 GE9X engine are on order.

The second GE9X engine is scheduled to test in 2017 along with flight testing on GE Aviation’s flying test bed. This timing assures all learnings from FETT will be captured in all certification engines. Engine certification is anticipated in 2018.

IHI Corporation, Snecma and Techspace Aero (Safran), and MTU Aero Engines AG are participants in the GE9X engine program.

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