Boeing, Lufthansa, Rolls-Royce partner to test technologies to improve fuel efficiency, reduce noise

- Research focuses on a novel engine inlet, operational concepts

- Test occurring on newest Boeing ecoDemonstrator flying test bed

- Collaboration supports FAA CLEEN program

SEATTLE, JULY 16, 2026 — Boeing [NYSE: BA], Lufthansa and Rolls-Royce will soon conduct flight tests of innovations meant to improve fuel efficiency and reduce noise.

Being tested on these flights are:

- The Next Generation Inlet, a reduced-length engine inlet demonstrator with advanced acoustic treatments. The inlet enables the integration of more fuel-efficient engines onto future platforms, and reduces weight and drag while maintaining the acoustic performance.
- Modified departure and arrival procedures, including Intelligent Operations flight paths, which aim to reduce community noise around airports. These flight paths are algorithmically generated using multiple data sources to identify opportunities for fuel-efficiency and noise benefits.

The testing, which begins later this month at the Boeing site in Glasgow, Montana, is being conducted on a Boeing 787 Dreamliner jet that's serving as Boeing's 2026 ecoDemonstrator Explorer airplane. This Boeing 787-9 is scheduled to be delivered to Lufthansa at a later date and features Trent 1000 engines from Rolls-Royce. The testing is expected to run through mid-August.

"Boeing works tirelessly to deliver the aerospace innovations of today and tomorrow," said Boeing Chief Technology Officer Lane Ballard. "The more efficient inlet and Intelligent Operations flight paths we're evaluating on this year's ecoDemonstrator Explorer are among the many promising concepts we're working on. These enhancements have the potential to make our airplanes even more valuable to our partners, including customers like Lufthansa and suppliers like Rolls-Royce."

"Lufthansa Group and Boeing share a long-standing partnership in aviation. We are pleased to support this year's Boeing ecoDemonstrator Explorer program alongside Rolls-Royce" said Grazia Vittadini, Chief Technology Officer, Lufthansa Group. "Together, we aim to help advance aviation's transformation by testing technologies with the potential to improve fuel efficiency, reduce noise and prove their value in real-world operations."

"This program is the culmination of a decade of collaboration with Boeing, built on a shared ambition to reduce noise, improve efficiency and unlock more sustainable flight," said Alan Newby, Director of Research and Technology, Rolls-Royce, which provided engineering support and oversight for operating the engine with the Next Generation Inlet installed. "With Boeing and Lufthansa, we are building on our extensive research to test technologies in real-world conditions and see how they perform where it matters most - in service. We look forward to sharing insights and demonstrating how world-class partnership and innovation can deliver benefits for our customers and the industry."

The innovations being tested are part of Phase III of the Federal Aviation Administration's CLEEN (Continuous Lower Energy, Emissions and Noise) program. Through this initiative, CLEEN works together with industry to test and develop technologies that will enable manufacturers to create airplanes and engines with benefits such as improved fuel efficiency and reduced noise.

"These tests demonstrate how the public-private partnership of the CLEEN program supports the development and integration of advanced technologies into current and future aircraft," said Julie Marks, executive director of the FAA's Office of Environment and Energy.

Since 2012, the Boeing ecoDemonstrator program has accelerated innovation by taking new technologies out of the lab and testing them in an operational environment to help solve real-world challenges for airlines and passengers. The ecoDemonstrator program has tested more than 260 technologies to enhance safety, reduce fuel use, emissions and noise and improve operational efficiency and the passenger experience.

"The Boeing ecoDemonstrator program helps us continue to deliver improved products that meet our customers' needs, including better fuel economy and lower noise emissions," said Allison Melia, Boeing vice president of Sustainability. "Maturing these technologies is key to supporting their fleet modernization strategies and sustainability goals while advancing resilient aviation growth."

For more information about the 2026 ecoDemonstrator test program, visithttps://www.boeing.com/features/2026/07/2026-boeing-ecodemonstrator-test-program-facts.

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