



The future of supersonic and hypersonic commercial flights

Imagine a pleasant afternoon when you leave your home, head to the airport, and board the plane to your next destination. You step inside, place your bag, and take your seat. In front of you, there is a screen with movies and series to make your journey more enjoyable. The plane takes off, and while you decide what to watch—switching between options at least ten times—you realize you're already taxiing along the runway at JFK in New York. It sounds like science fiction, though perhaps that wasn't a genre you'd considered watching on the screen. **But it isn't fiction. You've traveled on a supersonic plane that has taken you to the other side of the ocean in less than three hours.**

Supersonic and hypersonic technologies are poised to make these speeds a reality, significantly reducing transoceanic travel times and unlocking new possibilities for air travel. While reminiscent of the Concorde era, today's advances promise greater efficiency and sustainability. Numerous companies worldwide are working on technologies to address the technical challenges of supersonic flight and explore the commercial potential of hypersonic travel. These innovations are moving towards the ability to cover 7,000 km in just one hour, significantly surpassing the capabilities of the iconic Concorde.

NEW PROJECTS AND ONGOING DEVELOPMENTS

As presented before, supersonic travel has been a reality for decades, yet it hasn't become mainstream since low-cost travel has dominated the industry in the last years. However, now numerous emerging companies are seeking to redefine transoceanic aviation.

Supersonic aircraft

NASA is currently developing the X-59, an experimental aircraft designed **to exceed the speed of sound without producing disruptive sonic booms.** As part of NASA's Quesst mission, the X-59 aims to be the first of its kind to successfully achieve this feat, paving the way for commercial supersonic overland flight in the future.

As a result of a collaboration with Lockheed Martin Skunk Works, the X-59 incorporates advanced technology and systems from various established aircraft, such as **its landing gear from an F-16 and its life-support systems adapted from an F-15.** Currently undergoing final testing, the aircraft's first flight is scheduled for 2024, marking a critical step toward revolutionizing commercial aviation by dramatically reducing travel time while ensuring safety and flight reliability are not compromised.

Another key player in the current landscape is Boom Supersonic. Based in the United States, Boom is developing the Overture, a supersonic airliner designed to carry 65 to 88 passengers at speeds of Mach 1.7. The Overture aims to complete flights from New York to London in just 3.5 hours while **addressing noise and environmental impact concerns using quieter engines and sustainable aviation fuels (SAF).** Boom plans to launch its first commercial flights by the end of the 2020s.

While X-59 NASA's aircraft aims to fly overland, **the Overture will primarily operate over water.** Nevertheless, it has been engineered with noise reduction features to minimize sonic booms as well as comply with the latest environmental standards. Its in-house-designed turbojet engine, called Symphony, can operate efficiently at both high and low speeds, and will run on 100% SAF.

At lower speeds, **the Overture can fly over land without producing sonic booms and will be capable of landing on the same runway lengths used by typical commercial aircraft,** such as the Boeing 737 or Airbus A380, rather than requiring runways nearly 3,050 meters long, as was necessary for the Concorde.

Boom Supersonic plans to begin manufacturing the Overture in 2025, with test flights scheduled for 2027 and commercialization anticipated in 2029, provided everything goes according to plan. Major airlines such as American Airlines, United Airlines, and Japan Airlines have already expressed interest in the aircraft, securing 130 orders and pre-orders for the Overture.