

Supersonic jet travel: Just hopping continents

December 4 2016, by Nancy Owano



Boom supersonic plane in flight.

(Tech Xplore)—So can we ever expect to see not only commercial supersonic travel, but affordable supersonic travel?

More time to meet, pitch, plan— and less time checking in and out of hotels? Can routine travel between Tokyo and New York, Sydney and LA, become ho-hum? Can we foresee shaved-off hours?

A new [supersonic XB-1 jet](#) will fly cheaper than the Concorde, said *Traveller*, joining other sites which recently spread the news of a company behind the effort.

What the team have right now is just a prototype of a larger airliner. The prototype is called the "Baby Boom" from US-based Boom Technology.

Boom jets are 10% faster than Concorde, said the company news release.

The more formal name for the prototype is the XB-1 Supersonic Demonstrator. It went on display last month in the US at a Centennial Airport hangar. This is a subscale prototype of the

proposed passenger airliner.

Or, are we going back to the future? Those who know the story of the Concorde may even be surprised the attempt for supersonic jet travel is being made.

("Concorde was seen as a luxury offering between the 1970s and 1990s with tickets costing around £4350 (\$7171) one way from London to New York," recalled *Traveller*.)

But think about it. Blake Scholl, CEO and Boom founder, certainly has thought about it, saying "60 years after the dawn of the jet age, we're still flying at 1960s speeds."

How would that work out in crossing oceans at greater speed, less time?

Trying to get from Sydney to LA? Flight times between Sydney and Los Angeles could be halved if [plans](#) get off the ground, said *Traveller*.

The LA-Sydney route would be less than seven hours; an estimate is just-under seven hours. The cost would be about \$3500 each way.

Wondering about another route, say, New York to London?

New York to London would cost \$2500 and take just over 3 hours, (3 hours, 15 minutes) to arrive.

San Francisco-Tokyo? Fare would cost \$3250 each way, and arrival is in 5 hours, 30 minutes.

"Moreover, there are cost savings associated with [supersonic flight](#): saved executive time, saved hotel [expenses](#), and saved meals and entertainment expense."

So what is the plan to get this off the ground for real? Final assembly and vehicle integration are

taking place in Boom's facility at Centennial Airport.

Late next year, expect word about the first test flight of the prototype. The subsonic flight test will be conducted east of Denver; supersonic test flights will be conducted near Edwards Air Force Base in [Southern](#) California, in partnership with Virgin Galactic's The Spaceship Company.

The XB-1 Supersonic Demonstrator will fly with hardware from General Electric (engines), Honeywell (avionics), Tencate (carbon [fiber](#)), with composite structures fabricated by Blue Force.

Nonetheless, Justin Bachman in Bloomberg raised a question: Will the airlines buy into this?

Why, why not? Speed is an attractive concept, but can supersonic travel be delivered cost-effectively? Actually, said Bachman, "Boom will face a numerical gauntlet as it seeks to sell airlines on the advantages of a small, supersonic craft, with airlines posing tough questions about weight, range, fuel burn, [maintenance](#), dispatch reliability, and dozens of other issues."

The company appears confident. "Boom was founded on the philosophy that we need to overcome the challenges of supersonic passenger flight, not surrender to them," according to the company site. They have done hard things before, they added.

As for aerodynamics, the company said the Boom jets feature three major aerodynamic advances from Concorde: an area-ruled fuselage, a chine, and refined delta wing. ("The chine is a wing extension that stretches toward the nose. It generates more lift supersonic than subsonic, contributing to natural balance across a wide range of speeds. At takeoff and landing, the chine generates a stable [overwing](#) vortex, increasing lift and reducing takeoff and landing speeds.")

They said the Boom wing features high-efficiency airfoils, gentle camber, and swept trailing edge. The latter reduces "supersonic induced drag and helps quiet the sonic boom."

As for materials, the company noted carbon

composites. "Compared to aluminum, carbon composites can be manufactured efficiently in almost any shape, allowing us to implement the ideal aerodynamic design in a strong, lightweight structure."

Also, they said composites handle the heat and stresses of supersonic flight better than aluminum. Composites expand less with heat, allowing for a lighter design.

Unlike Concorde, said the company release, the Boom design requires no afterburner, improving fuel economy.

Boom is to have [45](#) seats, said *Daily Mail*.

The company release said, "With one spacious seat on each side of the aisle, each passenger has a large window, a personal overhead bin, and direct aisle access."

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