



MAKE AMERICA BOOM AGAIN How to Bring Back Supersonic Transport

In 1973, the Federal Aviation Administration (FAA) banned civil supersonic flight over the United States, stymieing the development of a supersonic aviation industry. In “[Make America Boom Again: How to Bring Back Supersonic Transport](#),” [Eli Dourado](#) and [Samuel Hammond](#) show that it is time to revisit the ban. Better technology—including better materials, engines, and simulation capabilities—mean it is now possible to produce a supersonic jet that is more economical and less noisy than those of the 1970s. It is time to rescind the ban in favor of a more modest and sensible noise standard.

BACKGROUND

Past studies addressing the ban on supersonic flight have had little effect. However, this paper takes a comprehensive view of the topic, covering the history of supersonic flight, the case for supersonic travel, the problems raised by supersonic flight, and regulatory alternatives to the ban. Dourado and Hammond synthesize the best arguments for rescinding the ban on supersonic flights over land and establish that the ban has had a real impact on the development of supersonic transport.

KEY FINDINGS

The FAA Should Replace the Ban on Overland Supersonic Flight with a Noise Standard

The sonic boom generated by the Concorde and other early supersonic aircraft was very loud, and as a result the FAA banned flights in the United States from going faster than the speed of sound (Mach 1). This ban should be rescinded and replaced with a noise standard. A noise limit of 85–90 A-weighted decibels would be similar to noise standards for lawnmowers, blenders, and motorcycles, and would therefore be a reasonable standard during daytime hours. The noise limit during nighttime hours could be lower.

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- *The noise standard for supersonic aircraft should be more lenient than for subsonic aircraft.* While new subsonic aircraft cannot be certified below the FAA's Stage 4 noise standard, subsonic planes are still allowed to operate at the more lenient Stage 3. Given the relative lack of experience with supersonic aviation and the fuel economy tradeoffs associated with airport noise, new supersonic aircraft should be certified if they meet Stage 3 requirements.
- *Supersonic travel has been stifled by government intervention.* The overland ban has delayed the development of supersonic travel in general. Government-sponsored efforts to develop commercial supersonic aircraft failed largely because they couldn't adapt to market signals about the demand for supersonic flight.
- *A noise standard would allow the aviation industry to use trial and error to develop commercially viable supersonic transport.* In order to figure out how to attract passengers, get noise levels down, and make a profit on supersonic flights, firms need to be able to experiment. Aviation has always been characterized by an industry learning curve.

Concerns about the Environment, Noise Levels, and Affordability Can Be Addressed

Atmospheric science has advanced significantly since the 1970s, and today it is widely accepted that emissions from supersonic aircraft in the lower stratosphere pose minimal risk to the ozone layer. Advances in aviation technology allow planes to be quieter than they could be decades ago.

WHY PAST ATTEMPTS AT COMMERCIAL SUPERSONIC FLIGHT FAILED

The sonic booms generated by the Concorde were too loud to allow over land. Although quieter supersonic planes can now be built, federal law has not been updated and planes today are not going any faster than they were 50 years ago.

- The stagnation and regress in supersonic aviation over the past 40 years broke a trend of rapid progress beginning with the Wright brothers' first flight in 1903, which was estimated to achieve 6 mph. By 1953, jets had reached Mach 2. By 1976, Mach 2 flight was commercialized, and military jets had reached Mach 3. (At Mach 2 it is possible to fly from New York to California in two hours.)
- The Concorde, which flew between Europe and the United States, had numerous problems: It was too heavy, its afterburners guzzled fuel, and it relied on government subsidies from France and the United Kingdom.
- The US government subsidized the development of the Boeing 2707, intended to rival the European Concorde. But the project was stymied by unrealistic goals: the government wanted a commercial jet that could seat 300 and fly at Mach 3. (The Concorde could fly at Mach 2 and seat 128.) The project was delayed for numerous years as engineers sought a titanium alloy capable of withstanding air friction at Mach 3.

The limitations that dogged the Concorde and the Boeing 2707 need not hold back commercial supersonic transport today.

CONCLUSION

Aircraft engineering has significantly improved since the time when the Concorde was flying. With lighter materials, more efficient engines, better computer modeling, and more experience, it is more than possible to create an aircraft today that is both faster and more affordable than the Concorde was.