



## Supersonic Commercial Plane

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### Why in News

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The **US airline United** has announced plans to buy **15 new supersonic airliners** and "return supersonic speeds to aviation" in the year 2029.

- The Airline has agreed to **purchase the Overture aircraft from Boom Supersonic** (a Denver-based start-up), with the **planes able to fly at Mach 1.7 faster than the speed of sound.**
- The new supersonic "Overture" aircraft will **become the world's fastest commercial airliner**, reducing travel time by about half of today's planes.

### Key Points

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- **Background:**
  - **Concorde**, the British-French turbojet-powered commercial airliner, **was the first aircraft to carry passengers at supersonic speed.** Supersonic planes flew passengers **from 1976 until 2003.**
  - But eventually **had to discontinue**, due to cost and other concerns.
- **Supersonic Plane:**
  - Supersonic aircraft are planes that **can fly faster than the speed of sound.** Usually, supersonic planes can travel at the **speed of around 900 kmph, twice the speed of normal aircraft.**
  - The **technology for supersonic flights is actually over 70 years old**, but only recently has been used for commercial flying. Before 1976, when the first commercial supersonic flight took off, the planes were **used entirely for military purposes.**

- **Boom's Overture Supersonic Aircraft:**
  - The Overture aircraft would **travel at the speed of Mach 1.7 or 1,805 kmph with a range of 4,250 nautical miles.**
  - In a single flight, it could **carry 65 to 88 passengers** and reach **an altitude of 60,000 ft.**
  - Trial flights are scheduled to begin in 2026, with commercial use coming three year later.
  - It will **build upon Concorde's legacy** through faster, more efficient and sustainable technology.
  - The company has claimed to produce an eco-friendly aircraft with "**net-zero carbon emissions**", set to fly with 100% **sustainable aviation fuel (SAF).**
    - **Sustainable aviation fuels** include **biofuels** and synthetic kerosine that are manufactured using renewable and sustainable materials.
  - It aims for "**zero overland noise.**"
    - This essentially means that it will cruise at supersonic speeds only over water, ensuring that no **sonic boom** or excessive noise reaches the surfaces where people live.
    - It will be equipped with **advanced aerodynamics** and **carbon composite materials.**
    - This will be able to **cut significant development and maintenance costs** in ways which the Concorde planes could not.

- **Challenges with Supersonic Planes:**

- **High Manufacturing Cost:** The costs of making “sustainable” supersonic planes are extremely high.
- **Environmental Cost:** The very nature of its flying using excessive amounts of fuel and energy is likely to have high environmental costs.
  - Despite the use of sustainable fuels, the **greenhouse gas emissions** are not nullified.
  - The plane consumes high amounts of fuel in order to take off, that too in a market where sustainable fuels aren’t readily available.
- **Excessive Noise Pollution:** The speed of the planes result in producing excessive amounts of noise pollution in the environment.
  - The “Sonic Boom” created by these planes feels like an explosion to the human ear.
  - This, thus, limits where and when the supersonic planes can fly. They can only reach their actual speed until they are far enough from people and completely over the ocean.
- **Regulatory Approvals:** To fly such planes can be unsuccessful, especially for transatlantic flights. Getting clearance from regulators around the world would be a challenging task, since the supersonic planes in the past have already been flagged for these hurdles.
- **Too Costly:** It would not be economically feasible for everyone. Only the very rich can afford supersonic planes, as a ticket is likely to be way more costlier than a first class ticket of a regular plane.

**Source: IE**