

ARCHIVED REPORT

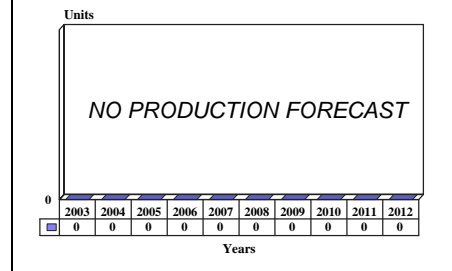
For data and forecasts on current programs please visit
www.forecastinternational.com or call +1 203.426.0800

Boeing Sonic Cruiser - Archived 4/2004

Outlook

- The Sonic Cruiser was shelved in late 2002
- Boeing is focusing on development of a new airliner called the 7E7

10 Year Unit Production Forecast
2003 - 2012



Orientation

Description. Twin-engine, long-range, high-speed, subsonic commercial transport aircraft.

Sponsor. Privately sponsored by Boeing Company.

Contractor. Boeing Company, Boeing Commercial Airplanes; Seattle, Washington, USA.

Status. Boeing shelved the Sonic Cruiser program in December 2002.

Total Produced. Not applicable.

Application. Long-range, scheduled passenger transportation. Additional potential as a dedicated express freight carrier.

Price Range. A price had never been set for the Sonic Cruiser. If the program had proceeded, the aircraft's price could eventually have been set somewhere in the range of \$120-\$160 million.

Technical Data

Design Features. The baseline Sonic Cruiser design includes a compound sweep wing placed toward the rear of the fuselage. The wing is of a cranked-arrow shape, with trapezoidal outer panels and a delta-like inner section. The aircraft also has a pair of canards near the

aircraft nose. Two engines are carried in nacelles placed behind the wing. The aircraft has two pitch-control surfaces located on aft extensions of the inner wing. The aircraft also has twin vertical tails.

	<u>Metric</u>	<u>US</u>
Performance		
Cruise speed	Mach 0.95-0.98	Mach 0.95-0.98
Max cruising altitude	13,000+ m	42,650+ ft
Range	11,100-16,668 km	6,000-9,000 nm

Propulsion

Sonic Cruiser (2) Turbofan engines rated approximately 400.0 kN (90,000 lbst) each at takeoff.

Seating

Accommodation for 200-250 passengers in a three-class configuration.

Variants/Upgrades

Not applicable.

Program Review

Background. In March 2001, Boeing announced that it was focusing its new product development efforts on a high-speed, subsonic transport called the Sonic Cruiser. Preliminary specifications called for this new, twin-engine aircraft to have a range of at least 9,000 nautical miles at a long-range cruise speed of Mach 0.95. Boeing said that service entry could occur in the 2006-2008 time frame. The company planned to start taking orders for the aircraft in 2002.

Boeing initially envisioned a family of aircraft based on the concept, with different versions capable of carrying 100-300 passengers. The company, though, soon began focusing on two baseline versions: a 200-seater with a 7,500 nautical mile range, and a 240-250 seater with a range of 6,000 nautical miles plus. A future version was to have a range of 8,000-9,000 nautical miles. Capacity, however, was not expected to significantly increase beyond 250 passengers.

In January 2002, Boeing signed an agreement with Japan Aircraft Industries (JAI) and Japan Aircraft Development Corp to conduct research and development work on technologies, including composites for the Sonic Cruiser and other potential new aircraft. JAI is an organization that includes Mitsubishi Heavy Industries, Kawasaki Heavy Industries, and Fuji Heavy Industries.

Boeing reached an agreement with Alenia in February 2002 regarding structural materials technology development work on the Sonic Cruiser.

Boeing added a number of companies to the Sonic Cruiser technology development team in 2002, including Fischer Advanced Composite Components, Fokker Aerostructures, GKN Aerospace Services, and Vought Aircraft Industries.

Engines. The engines for the Sonic Cruiser were initially envisioned as simple derivatives of the powerplants used on the Boeing 777. However, results from various studies and tests indicated that a different approach, possibly a new engine design, could be the way to go. In late 2001, Boeing asked General Electric, Pratt & Whitney, and Rolls-Royce to study new engine designs for the Sonic Cruiser.

Mid-Wing Designs. In October 2002, Boeing presented to airlines two alternative Sonic Cruiser designs in addition to the baseline aft-wing design described in the **Technical Data** section of this report. Both of the alternative designs had mid-wing configurations and conventional empennage. One design had the engines mounted on the wing trailing edge. The other had engine nacelles mounted on pylons on the wing leading edge.

Funding

If the program had proceeded, development costs of the Sonic Cruiser could have eventually exceeded \$10 billion.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Mar	2001	Boeing announces Sonic Cruiser concept
Dec	2002	Sonic Cruiser program shelved

Worldwide Distribution

Not applicable.

Forecast Rationale

In December 2002, Boeing essentially shelved the Sonic Cruiser program. While it will continue to look at low-level studies of Sonic Cruiser concepts, Boeing has now shifted its focus to development of a new, super efficient, mid-sized airliner called the 7E7. This new, 200-250 seat aircraft is intended to have 15-20 percent better fuel burn than the 767. It would fly between 7,000 and 8,000 nautical miles at speeds similar to the 747 and the 777. Technologies that were developed for the Sonic Cruiser will be applied to the 7E7.

Boeing's decision to switch emphasis to the 7E7 from the Sonic Cruiser reflected feedback from airlines that showed a decided preference for high efficiency over high speed.

Flying at speeds of up to Mach 0.98, the Sonic Cruiser was expected to significantly reduce flight times. For example, the aircraft was expected to cut up to two hours from a transatlantic flight and three from a transpacific flight. With its potential range of 9,000 nautical miles, the Sonic Cruiser would have enabled

passengers to fly directly to their destinations, avoiding congested hubs and the delays of intermediate stops.

Boeing found that its potential customers currently do not place the premium on high speed that Boeing had hoped they would when it first announced the Sonic Cruiser. Nevertheless, with the new 7E7, the company is still betting that the future will see continuing route fragmentation, with airlines requiring aircraft in the 757/767 capacity range. Boeing is still gambling that Airbus has it wrong: that the market does not require a larger aircraft such as the Airbus A380 but rather wants a smaller, more flexible aircraft.

In the wake of the Sonic Cruiser demise, Boeing has said that it believes that, in the future, airlines will again be interested in faster flight, and that it will be ready with a concept and technologies to meet this need. If this occurs, this could mean a revival of the Sonic Cruiser concept, or perhaps the company will make some other proposal.

Ten-Year Outlook

No forecast.

* * *