Boeing’s new narrowbody aircraft: What we know so far

Boeing is studying a clean-sheet 737 replacement, to challenge Airbus in the narrowbody market. It could feature new wings, engines, and cockpit design.

Marisa Garcia • October 1, 2025

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Boeing has quietly begun shaping the outlines of what may become its most important program in decades: a successor to the 737 MAX. As reported by The Wall Street Journal, preliminary studies are underway on a clean-sheet narrowbody.

The development comes even as Boeing works to regain regulator confidence, stabilise its current production lines, and catch up with its backlog.

Photo: Boeing

While the project is in its early stages, it could significantly impact Boeing's future share of the single-aisle market, which Airbus increasingly dominates. The pressure is significant as Airbus works on its own successor to the A320 family, with plans to select engines around 2027 and an entry into service in the 2030s.

Boeing's new narrowbody: The known and unknown at a glance

- Boeing has begun early-stage work (preliminary planning, concept studies) on a successor to the 737 MAX.
- Talks have taken place between Boeing and Rolls-Royce regarding the supply of an engine for the new aircraft, signalling a possibility of changing or diversifying engine partners.
- Boeing is evaluating changes to the flight deck and airframe, incorporating more advanced avionics, and potentially introducing new aerodynamic features.
- Key design choices — such as size, configuration, propulsion, and materials — are yet to be determined.
- Some reports suggest a target entry-into-service window in the mid-2030s.

- Boeing has not officially launched a new aircraft development program and is still in the exploratory phase.
- The planemaker has prioritised resolving its issues with MAX variants, meeting delivery backlogs, and ensuring stability before committing publicly.
- The market, regulatory, and technological risks (e.g., certification, fuel economy, emissions) are significant, and Boeing is moving cautiously.

Airbus vs Boeing: What's at stake with a new plane

Boeing's decision to pursue the 737 MAX re-engine strategy rather than develop a new aircraft has resulted in a significant market imbalance on narrowbody planes. According to backlog data compiled by Forecast International, as of the end of August:

- Airbus had a total backlog of 7,657 narrowbody aircraft, including A220s (499) and A320neo (7,158) aircraft.
- Boeing's narrowbody backlog by the end of August stood at 4,823 aircraft (4,817 737 MAXs and 6 737NGs).

Boeing's new narrowbody aircraft: early design studies

Analysts at Leeham News suggest that Boeing is pursuing multiple parallel concepts. One is the Transonic Truss-Braced Wing (TTBW), a high-efficiency design with ultra-slender wings supported by trusses. Such wings could dramatically cut drag and fuel burn but would require large folding sections to fit at standard airport gates—an engineering and certification leap far beyond the 777X's folding tips.

Photo: Boeing

In parallel, Boeing is working on a more conventional high-aspect-ratio wing mated to a tube-and-wing fuselage. This path would still represent a step-change in efficiency without the radical structural demands of the truss-braced concept. Both ideas are advancing through research.

New cockpit and systems shift

For the first time in decades, Boeing appears ready to break away from the 737's cockpit lineage. Leeham News argues the new jet will likely adopt a 787-style flight deck, unifying avionics and systems across Boeing's product lines. It would modernise pilot interfaces, reduce training costs for airlines, and eliminate the compromises that have resulted from decades of retrofitting the 737's original cockpit architecture.

Materials and manufacturing considerations

Future single-aisles will need to deliver significant gains in efficiency without compromising cost. Reuters has reported that Boeing and Airbus are both examining thermoplastic composites as a path to lighter, more easily manufactured structures. It is still unclear whether such materials can scale for the high production rates narrowbodies demand.

Engines could prove decisive

The WSJ reports that Boeing has already held preliminary discussions with Rolls-Royce, while also exploring options with General Electric and Pratt & Whitney. The Rolls-Royce UltraFan, capable of thrust above 40,000 pounds, is seen as a leading candidate for the new aircraft.

Photo: Rolls-Royce

The thrust class Boeing is considering would suggest a design larger the MAX 8, capable of accommodating over 200 seats. GE and Pratt & Whitney are also developing open-fan and advanced geared turbofan concepts, providing alternatives.

Boeing's choice of propulsion will significantly affect the aircraft's efficiency and its market position relative to Airbus aircraft.

Boeing's market positioning dilemma

In the early 2010s, Boeing shelved plans for an all-new aircraft and instead opted to re-engine the 737, resulting in the MAX. That decision allowed quick deployment at lower cost, but Airbus seized the initiative with the A321neo,

capturing a commanding lead in the largest segment of the single-aisle market.

Photo: Qantas

Strategically, Boeing must decide where its new aircraft sits. One option is to directly compete across the entire narrowbody spectrum, from 150 seats upward. Another path would be to cede the lower end to Airbus's A220 and Embraer, and instead design a jet tailored for the 200-plus seat, middle-of-market space that the A321neo and XLR dominate.

Honing-in on this segment could be more profitable and strategically valuable for the company, but it could leave a gap at the lower end of Boeing's portfolio.

Financial and strategic constraints on a new aircraft program

While it is conducting preliminary studies, Boeing is still far from launching a new aircraft. The company remains burdened with approximately $50 billion in debt and must first obtain certification for the 737-7, 737-10, and 777-9. Boeing needs to restore stable production and cash flow before committing to a clean-sheet design.

Photo: Boeing

However, the timing of Boeing's new narrowbody program is critical. AirInsight notes that Airbus expects to select an engine for its A320 successor by around 2027, with service entry in the mid-2030s. If Boeing lags too far behind, it risks repeating the cycle of reacting to Airbus rather than leading with its own innovations.

The long road ahead for a new Boeing plane

For now, Boeing's new narrowbody is more a study than a defined program. But the stakes are high. The successor to the 737 must meet airline demands for efficiency and range while positioning Boeing competitively against Airbus well into the 2040s and 2050s.

Photo: Acronym / stock.adobe.com

Whether Boeing chooses a radical truss-braced wing or a more conservative clean sheet, the aircraft's design will define the company's trajectory for decades. What is clear is that the process has begun. Airlines, regulators, and competitors will watch as Boeing decides how boldly—and how quickly—to move forward.

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