

Boeing - Sequencing the 737 Ramp

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Decision scope: Hypothetical forward choice on 737-family production pace and sequencing, North Line readiness, and internal certification resources

Case convention: This is an author-created classroom decision exercise. No undisclosed Boeing management or board deliberation is represented. Company and regulator disclosures are historical facts available by the cutoff.

The decision

On 3 August 2026, the Federal Aviation Administration issued an amended type certificate and updated Production Limitation Record for Boeing's 737 MAX-7. The FAA said the amended type certificate confirms compliance with applicable design and safety requirements; the updated production record authorizes Boeing to begin production of the aircraft. FAA inspectors would remain at Boeing production facilities, monitoring the manufacturing process, Safety Management System and safety culture. [S3], paragraphs 1-6 and final background paragraph.

The authorization mattered, but it did not answer how Boeing should pace the broader 737 system. The MAX-7's authorization was not an increase in monthly production, a production certificate for Boeing's new North Line, or an airworthiness certificate for a completed aircraft. Boeing's Q2 filing said the North Line needed FAA production certification before its first delivery. [S1], MD&A, "Commercial Airplanes," printed p. 42; [S3], final background paragraph.

You are a hypothetical member of Boeing's operating leadership team preparing a resource-allocation recommendation for the next planning cycle. Should Boeing continue moving toward the 47-aircraft monthly 737 rate and consider further increases? Should it hold the pace while building evidence of factory, supplier and workforce capability? Or should it sequence work selectively, giving more attention to certification and delivery of aircraft already in inventory before adding more production capacity?

Assignment: Recommend a 737 production sequence and the internal resources needed to carry it out. Explain what evidence should govern any change in pace. Keep FAA requirements, airworthiness, approved design and required safety controls fixed; they are constraints, not options to trade away. Use only information available by 3 August 2026. Do not assume a rate, yield, cash forecast or quality threshold that Boeing has not disclosed.

A system in transition

Boeing reported that during the first half of 2026 the 737 program had **begun transitioning** from a rate of 42 to 47 aircraft per month, with FAA concurrence. It planned additional production-rate increases beyond 47. Boeing also began low-rate production on a new 737 line in July. The company did not say that it had fully achieved the 47-aircraft rate. [S1], MD&A, "Commercial Airplanes," printed p. 42.

In July, Boeing said certification flight testing had been completed on the MAX-7 and MAX-10. It continued to anticipate certification in 2026 and first deliveries in 2027 for both models. As of 30 June, roughly 40 MAX-7 and MAX-10 aircraft were in inventory. The Q2 filing said it was following the FAA through certification and that ultimate timing would be determined by regulators. [S1], p. 42; [S2], Commercial Airplanes narrative, p. 3.

The new line and the derivative models created distinct workstreams. The North Line's first delivery depended on its own FAA production certification. The MAX-7's updated production record permitted beginning production of that model, while the FAA continued its production-facility oversight. Aircraft certification and end-of-production airworthiness certification remained separate matters. [S1], p. 42; [S3], paras. 6 and final background paragraph; [S4], paras. 1-4.

Exhibit 1. Boeing's disclosed 737 production and certification position

Item	Status disclosed by cutoff
Existing 737 program rate	Boeing said the transition from 42 to 47 per month had begun in 1H 2026, with FAA concurrence. It also planned additional increases beyond 47.
North Line	Low-rate production began in July 2026; FAA production certification was required before its first delivery.
MAX-7	Boeing reported flight testing complete in July and, in its 28 July release, forecast certification in 2026 and first delivery in 2027. On 3 August, the FAA issued an amended type certificate and updated Production Limitation Record authorizing production. That authorization is separate from end-of-production airworthiness certification and delivery.
MAX-10	Boeing reported flight testing complete in July and, in its 28 July release, forecast certification in 2026 and first delivery in 2027. The FAA's 3 August production authorization applied to the MAX-7.
MAX-7 / MAX-10 inventory	Approximately 40 aircraft at 30 June 2026.
FAA oversight	Onsite production monitoring continued; safety-management and culture assessment remained part of oversight.

Sources: [S1], p. 42; [S2], p. 3; [S3], paras. 1-6 and final background paragraph; [S4], paras. 1-4. Company plans and forecasts are shown as such; none is a completed result.

Demand and recovery

At 30 June, Boeing reported 4,397 undelivered firm 737 orders and a 737 program accounting quantity of 12,800 aircraft. The two numbers describe different things: undelivered firm orders are contracted aircraft, while the accounting quantity is Boeing's cost-estimation pool. The filing's model breakdown showed demand across MAX-7, -8, -9 and -10 variants, with the -8 accounting for the largest approximate share of undelivered orders. [S1], Note 19, printed pp. 26-29; program quantities, p. 42.

Boeing reported 129 737 deliveries in the second quarter and 243 in the first half of 2026. Its Commercial Airplanes segment delivered 171 aircraft across programs in Q2 and reported \$11.751 billion of revenue and a \$322 million operating loss, or a 2.7% negative operating margin. These segment results are not a 737-only profit measure. [S1], Note 19, pp. 26-29; [S2], Commercial Airplanes table and narrative, p. 3.

The company estimated that \$13.773 billion of 737 deferred production costs, tooling and other nonrecurring costs would be recovered from units included in the program accounting quantity that had firm orders; another \$31 million was expected to be recovered from units representing expected future orders. These are program-accounting estimates that depend on future production and deliveries, not a guarantee of profit or cash timing. [S1], Note 6, printed p. 12.

Boeing's total company backlog was \$715.3 billion at quarter-end, including more than 6,200 commercial airplanes valued at a record \$597 billion. Boeing estimated that about 21% of total backlog would convert into revenue through 2027 and 62% through 2030, while warning that timing was uncertain and that delays or production disruptions could reduce or cancel backlog. Backlog is not cash on hand or a guaranteed delivery schedule. [S1], Note 19, p. 29; [S2], p. 3.

Exhibit 2. Operating and financial context

Reported values; USD billions unless noted.

Measure	Q2 2026	First half 2026	Scope / note
Boeing revenue	\$24.560	\$46.777	Consolidated
Net loss	\$(0.428)	\$(0.435)	Consolidated, GAAP
Operating cash flow	\$1.364	\$1.185	Consolidated; Q2 reflected higher deliveries and favorable working-capital timing
Free cash flow	\$0.631	\$(0.823)	Boeing-defined non-GAAP measure
737 deliveries	129	243	Delivered aircraft; not monthly production rate
Total Commercial Airplanes deliveries	171	314	All commercial-aircraft programs
Cash plus marketable securities	\$20.0	-	At 30 June 2026

Measure	Q2 2026	First half 2026	Scope / note
Consolidated debt	\$45.9	-	At 30 June 2026

Source: [S1], financial statements and Note 19, pp. 1, 26-29; [S2], Summary Financial Results and cash flow tables, pp. 1-2. Boeing defines free cash flow as operating cash flow less additions to property, plant and equipment; Q2 capital additions were \$733 million. Positive quarterly cash flow is not evidence of a durable run rate. [S2], p. 2.

Competitive pressure

Airbus reported 351 commercial-aircraft deliveries in the first half of 2026, including 271 A320 Family aircraft, and a commercial-aircraft backlog of 9,222 at 30 June. It said it expected to reach an A320-family rate of 70-75 aircraft per month by the end of 2027 and rate 75 thereafter. These are Airbus-reported results and plans, not direct equivalents to Boeing's 737 production, delivery mix or accounting. [S5], H1 results paragraph (HTML lines 29-31) and A320 outlook paragraph (line 35).

Boeing's own risk disclosures identify production-system health and quality, production rates, certification, reliability, supplier dependence, skilled labor and integration of Spirit AeroSystems as risks to results. Those disclosures describe exposures; they do not establish a current defect rate or which constraint is binding at a particular line. [S1], Forward-Looking Statements, printed p. 33; Item 1A, p. 52.

What should determine the pace?

Production managers face linked questions. More repetition can build proficiency and improve utilization, while an accelerated system can also put more load on suppliers, people, inspection and corrective-action processes. Holding a rate may create capacity for training, certification and learning work, but it can defer deliveries and cash conversion. Shifting scarce engineers or inspectors from one workstream to another can also move a bottleneck instead of removing it.

Academic research offers conditional mechanisms, not Boeing performance estimates. A production-ramp model examines utilization, yield and the opportunity cost of experiments; its results depend on assumptions about price, costs, learning and remaining product life. [S6], §§3-6. A manufacturing-team study finds associations between psychological safety and learning behavior, and between learning behavior and observer-rated team performance; it is not a Boeing or aviation-safety estimate. [S7], Tables 4-5, pp. 366-368. A systems model simulates how efficiency pressure and shifting safety boundaries can interact under specified assumptions; its simulated outcomes are not Boeing failure probabilities. [S8], Figures 8-10 and Table 3, pp. 140-141.

For each alternative, identify the measures you would want before committing to a rate step. Examples might include first-pass yield, rework, nonconformance age and closure, supplier milestone performance, staffing and training readiness, FAA finding closure, line certification progress, inventory age, customer acceptance and cash conversion. Boeing did not disclose these line-level values in the reviewed materials. Do not treat any proposed threshold as a Boeing standard.

Discussion questions

1. What changed with the FAA's 3 August action, and which separate production, type-certification and airworthiness gates remained?
2. Which is the more decision-relevant signal: backlog and delivery demand, or demonstrated manufacturing and supplier capability? What additional information would make either one actionable?
3. Which sequence of rate, North Line, certification and inventory work would you recommend? What is the strongest argument against it?
4. How should Boeing define evidence that supports a next rate step while keeping regulatory and safety requirements fixed?
5. Which academic mechanism changes the questions you would ask, and which conclusions cannot be transferred to Boeing from that research?

Sources and conventions

S1. Boeing, [Q2 2026 Form 10-Q](#), accession 0001628280-26-050038, filed 28 July 2026; quarter ended 30 June 2026. Printed filing pages are cited above. Local SEC archive was checked before download.

S2. Boeing, [Q2 2026 results release, Exhibit 99.1](#), accession 0001628280-26-049929, filed 28 July 2026.

S3. FAA, [“FAA Statement on Certification of the Boeing 737 MAX-7”](#), 3 August 2026.

S4. FAA, [“After Months of Safety Review, FAA Allows Boeing to Resume Issuing Certificates for New Airplanes”](#), 17 July 2026.

S5. Airbus, [H1 2026 results](#), 29 July 2026. HTML lines 29-31 and 35 as cited.

S6. Terwiesch, C., & Bohn, R. E. (2001). “Learning and Process Improvement during Production Ramp-Up.” *International Journal of Production Economics*, 70(1), 1-19. [DOI](#). Selective full-text review, §§3-6; analytical model, not Boeing evidence.

S7. Edmondson, A. C. (1999). “Psychological Safety and Learning Behavior in Work Teams.” *Administrative Science Quarterly*, 44(2), 350-383. [DOI](#). One-firm observational study; cited findings are associations.

S8. Morrison, J. B., & Wears, R. L. (2022). “Modeling Rasmussen’s dynamic modeling problem: drift towards a boundary of safety.” *Cognition, Technology & Work*, 24(1), 127-145. [DOI](#). Model simulations under specified assumptions.

All figures and statements are attributed to their source and scope. Hypothetical role and assignment are author-created; no hypothetical financial inputs are used. Information published after 3 August 2026 is excluded.