

National Transportation Safety Board

Office of the Chairwoman

Washington, DC 20594



June 10, 2025

Mr. Christopher J. Rocheleau
Acting Administrator
Federal Aviation Administration
Washington, DC 20591

Dear Mr. Rocheleau:

This letter provides information about the National Transportation Safety Board's (NTSB) June 24, 2025, report: *In-Flight Separation of Left Mid Exit Door Plug, Alaska Airlines Flight 1282, Boeing 737-9, N704AL*, (NTSB/AIR-25-04). The details of relevant accident investigations and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- the incomplete closure of the left mid exit door (MED) plug without the required bolts and hardware.
- the Federal Aviation Administration's (FAA) compliance and enforcement surveillance, audit planning procedures, and records systems were deficient and lacked the functionality necessary to identify repetitive and systemic discrepancies and nonconformance issues with Boeing Commercial Airplane's business process instruction for parts removals.
- the need to review Boeing's safety culture, safety management system, and quality management system
- the lack of hands-on, aircraft-specific training and procedures for flight crews' use of each type of oxygen system in an operator's fleet.
- the continued loss of cockpit voice recorder audio.

Accordingly, the NTSB makes the following safety recommendations to the FAA. Additional information regarding these recommendations can be found in the noted sections of the report.

- Once you complete the certification of Boeing Commercial Airplanes' design enhancement for ensuring the complete closure of Boeing 737 mid exit door (MED) plugs following opening or removal, issue an airworthiness directive to require that all in-service MED plug-equipped airplanes be retrofitted with the design enhancement. (A-25-15) (See Section 2.3)
- Revise your compliance enforcement surveillance system to ensure that it provides the necessary functionality for Federal Aviation Administration managers and inspectors overseeing production approval holders to effectively identify, record, track, and resolve recurring and systemic discrepancies and nonconformance issues, including those related to specific manufacturing processes. (A-25-16) (See Section 2.4)
- Revise your audit planning activities to ensure that they provide the necessary functionality for Federal Aviation Administration managers and inspectors overseeing production approval holders to effectively identify, record, track, and resolve recurring and systemic discrepancies and nonconformance issues, including those related to specific manufacturing processes. (A-25-17) (See Section 2.4)
- Revise your records systems to ensure that they provide the necessary records for Federal Aviation Administration managers and inspectors overseeing production approval holders to effectively identify, record, track, and resolve recurring and systemic discrepancies and nonconformance issues, including those related to specific manufacturing processes. (A-25-18) (See Section 2.4)
- Once the actions in Safety Recommendations A-25-16 through -18 are completed, develop guidance for Federal Aviation Administration managers and inspectors who provide oversight of production approval holders on how to identify, record, track, and effectively address repetitive and systemic discrepancies and nonconformance issues, to include strategies for assessing the effectiveness of corrective actions taken by the production approval holder during the previous year when developing next year's certificate management plan. (A-25-19) (See Section 2.4)
- Once the actions in Safety Recommendation A-25-19 are completed, provide Federal Aviation Administration managers and inspectors who provide oversight of production approval holders with recurrent training on how to identify, record, track, and effectively address repetitive and systemic

discrepancies and nonconformance issues, to include strategies for assessing the effectiveness of corrective actions taken by the production approval holder during the previous year when developing next year's certificate management plan. (A-25-20) (See Section 2.4)

- Retain historical compliance enforcement surveillance and audit records older than 5 years and provide Federal Aviation Administration managers and inspectors access to these records to enhance their oversight planning for production approval holders. (A-25-21) (See Section 2.4)
- Convene an independent third-party panel to conduct a comprehensive review of Boeing Commercial Airplanes' safety culture. The findings should be used to enhance the ongoing development of Boeing's regulatory safety management system (SMS) and the integration of its SMS into its broader quality management system. (A-25-22) (See Section 2.5)
- Notify operators of the circumstances of the accident involving Alaska Airlines flight 1282, and encourage them to review their flight crew training programs and ensure that they include hands-on, aircraft-specific training and procedures for each type of oxygen system in the operator's fleet, to include establishing and maintaining communications when the oxygen masks are donned and removed while participating in realistic emergency procedures training scenarios. (A-25-23) (See Section 2.6)
- Review and revise, as necessary, the design standards that apply to portable oxygen bottle design to ensure that they adequately address ease of use and quick donning in an emergency situation, including considerations for the effort needed to remove the mask from its packaging. (A-25-24) (See Section 2.6)
- Require operators of airplanes equipped with a cockpit voice recorder (CVR) to incorporate guidance into company standard operating procedures, emergency protocols, and postincident and postaccident checklists—applicable to both flight crew and non-flight crew personnel—detailing actions to preserve CVR recordings as soon as practical after completion of a flight with a reportable event. (A-25-25) (See Section 2.6)

In addition, the NTSB reiterates the following recommendations to the FAA:

- Require all newly manufactured airplanes that must have a cockpit voice recorder (CVR) be fitted with a CVR capable of recording the last 25 hours of audio. (A-18-30)
- Require retrofit of all cockpit voice recorders (CVR) on all airplanes required to carry both a CVR and a flight data recorder with a CVR capable of recording the last 25 hours of audio. (A-24-9)
- Conduct a study to determine the factors that affect caregivers' decisions about the use of child restraint systems (CRSs) when traveling on a Title 14 *Code of Federal Regulations* Part 121 air carrier airplane with children under the age of 2 and to understand the challenges associated with using CRSs; publish the study findings. (A-21-10)
- After the action in Safety Recommendation A-21-40 is completed, use the study findings to direct the Federal Aviation Administration's efforts to increase child restraint system usage. (A-21-41)

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendation by number (Safety Recommendations A-25-15 through -25). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Jennifer L. Homendy
Chairwoman
On behalf of the entire Board

Attachment

National Transportation Safety Board

Office of the Chairwoman

Washington, DC 20594



June 10, 2025

Mr. Kelly Ortberg
President and Chief Executive Officer
The Boeing Company
929 Long Bridge Dr.
Arlington, VA 22202

Dear Mr. Ortberg:

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

We are providing the following information to urge The Boeing Company, Boeing Commercial Airplanes' business unit, to act on the safety recommendations in this letter because we believe your organization can help reduce the risk of future accidents.

This letter also includes information about our June 24, 2025, report, *In-Flight Separation of Left Mid Exit Door Plug, Alaska Airlines Flight 1282, Boeing 737-9, N704AL, Portland, Oregon, January 5, 2024*, AIR-25-04. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of this investigation, we identified the following safety issues:

- The incomplete closure of the accident airplane's left mid exit door (MED) plug (with missing securing bolts and hardware) after it had been opened to facilitate rework during the manufacturing process;

- The need for the completion of your MED plug design enhancement to help ensure the complete closure of an MED plug following opening or removal;
- The lack of clarity, conciseness, and ease of use of Business Process Instruction (BPI) "Perform Part or Assembly Removal" needed for it to be an effective tool for manufacturing personnel to consistently and correctly determine when and how to generate a removal record;
- The inability of your unstructured and undocumented on-the-job training to adequately prepare door team personnel with limited exposure to nonroutine tasks to correctly perform the process for opening an MED plug, including generating the required removal record, and to track trainee progress to support future data analysis;
- The ineffectiveness of your corrective actions to address the persistent deficiencies with BPI "Perform Part or Assembly Removal" and other production process inconsistencies identified in the investigation; and
- The inadequacy of your quality escape guidance to address controls for human error.

Accordingly, the NTSB makes the following safety recommendations to Boeing. Additional information regarding these recommendations can be found in the noted sections of the report.

Continue the certification process for the design enhancement for MED plugs to ensure that, once the design enhancement is certified, all applicable newly manufactured airplanes are equipped with the enhancement. (A-25-26) (See sections 1.12.2.7 and 2.3.2.)

Once the design enhancement for MED plugs is certified, issue a service bulletin to address retrofitting in-service MED plug equipped airplanes with the design enhancement. (A-25-27) (See sections 1.12.2.7 and 2.3.2.)

Apply your updated safety risk management process to current and future revisions to BPI "Perform Part or Assembly Removal" to ensure that it provides clear and concise guidance for determining when a removal record is needed. (A-25-28) (See sections 1.11.2.1.1, 1.11.2.3.3, and 2.3.1.1.)

Develop recurrent training on BPI "Perform Part or Assembly Removal" for Boeing manufacturing personnel that emphasizes the importance of removal records for product safety, prepares personnel to consistently and correctly determine when a removal record is needed, and ensures that a

removal record is generated when required. (A 25-29) (See sections 1.11.2.1.1, 1.11.2.3.3, and 2.3.1.1.)

Develop a structured on-the-job training program that identifies and defines tasks necessary for manufacturing personnel to be considered fully qualified in their job series and includes a grading system for trainers and trainees to track progress and determine competence. (A-25-30) (See sections 1.11.2.2.1, 1.11.2.2.2, and 2.3.1.2.)

Document and archive the results of training provided and received as part of the program recommended in Safety Recommendation A-25-30 to support future data analysis. (A-25-31) (See sections 1.11.2.2.1, 1.11.2.2.2, and 2.3.1.2.)

Revise your safety risk management process to ensure that it 1) identifies the root causes of manufacturing process compliance issues, like the persistent deficiencies with BPI "Perform Part or Assembly Removal" and other production process inconsistencies identified in this investigation, and 2) evaluates the effectiveness of corrective actions. (A 25-32) (See sections 1.11.2.3.3 and 2.4.2.1.)

As you integrate your quality management system and safety management system, develop a process that can identify escapes that result from human error, assess them using a system specifically designed to identify factors that contribute to such errors, and implement effective mitigation strategies. (A 25-33) (See sections 1.11.2.3.1, 1.11.2.3.2, 1.11.2.3.3, 2.4, and 2.5.)

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendation by number (Safety Recommendations A-25-26 through -33). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. For your convenience, please refer to additional [guidance on responding to our safety recommendations](#) on our website.

If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

All communications regarding safety recommendations are stored by the NTSB and viewable by the public. Please do not send privileged or confidential communications in response to these recommendations. Responses marked as confidential or privileged (or similar designations) will be considered nonresponsive.

In the likely event that your company uses auto-generated and/or preformatted confidentiality statements on letterhead or outgoing e-mails, please include a statement in your letter indicating that the information can be publicly released. If you have concerns about this protocol, please contact us at

ExecutiveSecretariat@ntsb.gov.

Sincerely,

[Original Signed]

Jennifer L. Homendy
Chairwoman
On behalf of the entire Board

cc: Ms. Stephanie Pope, Executive Vice President
The Boeing Company, and President and Chief Executive Officer,
Boeing Commercial Airplanes

Attachment