Alaska AIRLINES

September 6, 2024

Doug Brazy
Hearing Officer
Office of Aviation Safety
National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

Re: Party Submission of Alaska Airlines re: Alaska Airlines Flight 1282; January 5, 2024; near Portland, Oregon; NTSB Investigation No. DCA24MA063

Dear Mr. Brazy:

This letter provides Alaska Airlines' ("Alaska") proposed findings to the National Transportation Safety Board ("NTSB") regarding the accident investigation and investigative hearing in this matter, in accordance with 49 C.F.R. § 845.13. We appreciate the opportunity to participate in the investigative hearing and to submit these comments, as well as the professional and collaborative relationship with the NTSB and Federal Aviation Administration (FAA) throughout this investigation. These cooperative efforts demonstrate our common commitment to aviation safety.

I. INTRODUCTION

On January 5, 2024, Alaska Flight 1282 was scheduled to operate from Portland International Airport (PDX) in Portland, Oregon, to Ontario International Airport (ONT), in Ontario, California, on a newly manufactured Boeing 737-9 MAX aircraft, bearing U.S. Registration No. N704AL ("Aircraft"). Shortly after departure, while climbing through 14,800 feet, the left mid exit door[1] (MED) plug suddenly and unexpectedly departed from the aircraft,

[1] The Boeing 737-9 MAX fuselage is manufactured with openings for an optional additional set of exit doors located behind the aircraft wings, one on each side of the aircraft. These additional doors, known as mid exit doors (MED), are installed when the aircraft seating configuration allows for more passenger seats, which would require an additional exit to be used in an emergency.

Alaska does not use this higher density seating configuration, so the additional doors are not installed. When an airline does not need the additional doors, Boeing installs a door plug to fill the area where the additional exit doors would have been installed. The MED plug is not a door, and is not designed to be opened except during periodic maintenance approximately every 2 to 3 years. It is not capable of being opened by passengers or cabin crew.

Once installed by Boeing, the MED plugs are secured to the aircraft using four bolts each, and are then covered with insulation and interior cabin trim similar to that surrounding all other passenger windows on the aircraft. The outline of the MED plug is slightly visible from outside the aircraft, but is undetectable from inside the cabin.

resulting in a rapid depressurization event onboard. The flight crew immediately initiated emergency procedures and successfully returned to PDX for an emergency landing. Fortunately, none of the 171 passengers, 4 flight attendants, or 2 pilots were seriously injured.

The Aircraft was manufactured by Boeing and first flew on October 15, 2023. The Aircraft entered service with Alaska on November 11, 2023. It had operated a total of only 154 flights at the time of the accident less than two months later.

The NTSB investigation is ongoing, however, investigators have so far discovered that the left MED plug was not properly installed during the manufacturing process because four retaining bolts were not installed on the Aircraft at the time it left the Boeing factory. The positions at which Boeing personnel should have installed the retaining bolts are covered by insulation and interior trim and are not visible from the inside or outside an assembled aircraft. No pre-accident movement of the door plug was visible and, therefore, recurring maintenance inspections, general visual inspections from ramp personnel, and pre-flight walkaround inspections conducted by pilots operating the Aircraft did not reveal that the retaining bolts were uninstalled.

Door plugs are inspected by Alaska aircraft maintenance technicians during scheduled maintenance work between 20 and 24 months after delivery, and again at 36-month intervals thereafter. Because the Aircraft was in operation for less than three months at the time of the accident, it had not received any such inspections during which Alaska's maintenance technicians would have inspected the door plugs and detected the missing bolts.

While this accident fortunately did not result in loss of life or serious injuries, Alaska recognizes the seriousness of the event, and the potential risk to future flights from such manufacturing deficiencies.

Alaska has been and will continue to support the investigation into the circumstances which led to the departure of the MED plug. We look forward to the Board's determination of Probable Cause.

II. SUMMARY OF PROPOSED FINDINGS

Alaska proposes the following findings based on the information contained to date in the NTSB public docket as well as information revealed at the public hearing into this accident, held on August 6-7, 2024.

1. When delivered to Alaska, the left mid-exit door (MED) plug on the Aircraft was not properly installed by Boeing.

2. Boeing employees did not follow process requirements for the documentation of work performed during manufacturing when they temporarily opened the left MED plug to perform other work.
3. After temporarily opening the left MED plug during manufacturing, Boeing employees failed to ensure four bolts designed to prevent movement of the left MED plug were properly reinstalled before the aircraft left the factory.
4. The locations of the missing bolts on the left MED plug were not visible from inside or outside the Aircraft as delivered to Alaska.
5. At the time of the accident, the Aircraft was not due for any inspections during which inspection by Alaska's maintenance technicians would have revealed the missing bolts.
6. There was no air gap around the left MED plug prior to departure of Flight 1282 on January 5, 2024.
7. No movement of the left MED plug was visible from inside or outside the Aircraft prior to departure of Flight 1282 on January 5, 2024.
8. Pre-accident warnings associated with the cabin pressure controllers (CPC) were determined to be unrelated to the MED plug and were not an indication of the eventual failure of the MED plug and cabin depressurization.
9. Boeing did not provide an option for installation of door warning sensors at the MED position because the Aircraft was equipped with an MED plug, as opposed to a functional exit door.

III. DISCUSSION

Owning safety is Alaska's number one foundational value, and one that is deeply personal. Alaska puts safety and safety culture at the forefront of our operations and communicates with every employee about the importance of safety. Alaska fosters an open and transparent approach to safety reporting and processes through Alaska's Safety Management System (SMS), data sharing, and continuous engagement with FAA safety programs. Safety in aviation is at the core of our country's complex aviation ecosystem, and it requires collaboration between manufacturers, operators, and government.

Alaska thoroughly reviewed the available information related to this accident, including the factual information produced by the NTSB investigation, particularly the Operations and Structures factual reports.

Based on Alaska's review of the information made available to-date, we have determined that the Aircraft was not properly assembled as the MED plug was not installed according to requirements, and this failure was not and could not have been known by Alaska prior to the accident. Further, independent review of pre-accident pressurization system

warning indications by Alaska and the NTSB reveals there was no connection between those warnings and the ultimate MED failure.

Several issues, such as the previously reported Cabin Pressure Controller fault and restrictions on flights to Hawaii, that arose during the NTSB investigation have caused confusion or misunderstanding with the media and the general public and should be addressed. Below we discuss these and other topics that we believe are relevant to the NTSB's ultimate analysis of the facts and circumstances of this accident and which clarify and resolve the confusion on issues that did not have any relevance to the cause of the accident.

A. CPC System and Reported Prior Faults

The Boeing 737-9 MAX is equipped with a triple redundant pressurization controller to enable a continuously habitable cabin atmosphere during all phases of flight. Two identical Cabin Pressure Controllers (CPCs) are installed on the 737-9 MAX. Upon takeoff, primary control of the system alternates automatically between the two CPCs, with one serving as primary and the second serving as the alternate for the specific flight.

If the primary system fails or otherwise experiences a fault, pressurization control automatically switches to the alternate system, and an "AUTO FAIL" light illuminates and other indications in the cockpit alert the pilots. Should that alternate system also fail or experience a fault, pressurization control reverts to a manual system in which the pilots must manually control pressurization of the aircraft. Again, the pilots are alerted with a light and other indications in the cockpit.

In the month prior to Flight 1282, the auto-fail light on the Aircraft illuminated during three separate flights, indicating that the primary CPC experienced a fault during those flights, and control automatically switched to the alternate system. Cabin pressurization on all three flights was uninterrupted, and the Aircraft continued under normal procedures and safely landed at its intended destination without issue.

Following each of the three flights, Alaska's maintenance team examined and tested the relevant CPC in accordance with FAA-approved maintenance procedures and determined that there was no issue with pressurization of the Aircraft due to the CPC fault. Maintenance personnel determined that the Aircraft remained airworthy and in compliance with all FAA regulations and returned the Aircraft to service.

Following the accident, the NTSB determined the AUTO FAIL events resulted from intermittent failure of faulty computer chips in the CPCs, and did *not* adversely affect the

pressurization on any flights, and did not contribute to the accident. The NTSB's findings are detailed on page 27 in the Systems Group Chair's Factual Report:

> "According to the manufacturer, this fault signature is unique and consistent with an intermittent failure of the UART microchip internal to the CPCs. A manufacturer's review of repaired CPCs between January 2021 and December 2023 found that 10 out of 585 repaired units showed this particular fault code sequence, and each of the 10 units had UART chips from the same chip lot as the CPCs from the event airplane. By design, either of these faults will result in the affected CPC automatically transferring cabin pressure control to the alternate CPC. In addition, a master caution will alert and the AUTO FAIL annunciation light will illuminate in the flight deck. Review of the QAR data (see section E.4.5), which captured the two most recent AUTO FAIL occurrences, showed that when the fault occurred, the alternate CPC automatically took command and there was no disruption or obvious effect to cabin pressure control. The cabin pressure remained at the expected values based on the designed pressurization schedule before, during, and after these AUTO FAIL events."

B. ETOPS Restrictions and Inoperative Fuel Boost Pump

The FAA permits commercial aircraft to operate with some inoperable equipment under prescribed conditions. The precise equipment that may be inoperable for flight is contained in what is known as the Minimum Equipment List (MEL), and is specific to each aircraft type and operator, and must be approved by the FAA.

Two days before the accident, on January 3, 2024, the aft fuel boost pump installed on the Aircraft became inoperable. Alaska's MEL for the Boeing 737-9 MAX permits continued, safe operation with one inoperative aft fuel boost pump if specific conditions are met. Those conditions were all met, and Alaska continued to operate the Aircraft safely and in accordance with all applicable regulations.

While the Alaska MEL permitted continued operation over the continental U.S., the Aircraft was restricted from extended over-water flights until the aft fuel boost pump was repaired or replaced by maintenance personnel. This is because Alaska's 737-9 MAX fleet is certified by the FAA to operate for extended periods of time over water subject to rigorous special standards, collectively known as Extended-range Twin-engine Operations Performance Standards (ETOPS). Under the FAA-approved ETOPS program for Alaska's 737-9 MAX fleet, Alaska's 737-9 aircraft are prohibited from extended over-water operations with an inoperative aft fuel boost pump. Extended over-water operations may not resume until the aft fuel boost

pump is repaired or replaced and the aircraft is cleared and returned to service by maintenance personnel. The Aircraft was operating pursuant to the FAA-approved MEL for the aft fuel boost pump at the time of the accident.

C. Chronics Program and Voluntary ETOPS Restrictions

Alaska maintains a Chronic Aircraft and Recurrent Item Tracking (Chronics) program which complies with 14 C.F.R. § 121.373. The goal of the Chronics program is to help identify and address reoccurring or chronic maintenance issues.

Alaska's Chronics program goes above and beyond FAA minimums to ensure we are proactive in identifying and monitoring issues while also erring on the side of caution when it comes to potential reoccurring issues. These are internal policies that adhere to industry best-practices but are not required by FAA regulations. They provide Alaska's maintenance and engineering teams the ability to use their insight, experience, and expertise to put in place voluntary precautions to enhance safety.

One longstanding internal policy is to take the extra precautionary step of voluntarily restricting aircraft with multiple previous maintenance write-ups--even those with write-ups that are completely resolved in compliance with FAA-approved maintenance procedures--from flying extended over-water routes for a period of time to allow maintenance personnel to address an issue quickly should it reoccur.

In this case, in addition to the existing ETOPS restriction placed on the Aircraft due to the inoperative aft fuel boost pump, Alaska's internal policies triggered a voluntary ETOPS restriction due to the prior CPC warnings. Alaska utilizes this additional voluntary restriction for extended over-water flights to Hawai'i because the aircraft operate a significant distance over which there are no airports that can be accessed in case of an emergency. Additionally, in the event the CPC warning recurred, there are fewer aircraft maintenance resources in Hawai'i and aircraft experiencing a reoccurring issue may need to be ferried without passengers to the continental U.S. for repairs, disrupting the operation and our passengers.

D. Door Sensors on MED Plugs

During the investigative hearing, a question inquired whether door sensors were installed at the MED location with the door plug instead of an exit door. If exit doors are installed, Boeing also installs sensors to alert the crew if the exit door is not properly closed. Sensors are not installed when the 737-9 is configured with plug doors as opposed to exit doors, because plug doors are not opened and closed by the crew, therefore, sensors are not required under the certified design requirements.

Alaska has determined that, while the wires for such a sensor were in place when the Aircraft was manufactured, per design, no sensors were installed. Indeed, Boeing does not even offer an option to have those sensors in place when a plug is installed instead of a door. It does not appear the design of the door plug and surrounding structure would allow such sensors to be installed even if desired by the airline.

E. Post-Accident Oversight of Boeing and Spirit Aerosystems

Since Flight 1282, Alaska has engaged directly with Boeing's CEO and leadership team to understand their plans to adequately address quality assurance issues in the MAX fleet. Though no requirement to do so, following the accident, Alaska voluntarily conducted a thorough review of Boeing's production quality and control systems, including review of Boeing's oversight of vendors and suppliers connected to the 737-9 MAX program. Alaska has voluntarily expanded our Audit team and requested to review Boeing's manufacturing improvement plans to provide feedback and monitor adequate execution of those planned improvements. We have shared best practices with Boeing's safety and quality leaders. We continue to work with Boeing to collect factory non-conformance data so that we can promptly identify and address quality issues and create action plans with Boeing on a regular basis.

Alaska proactively has taken the optional additional safeguard of employing independent inspectors to monitor Boeing's manufacturing of critical aspects of in-production Alaska aircraft. Alaska's Maintenance and Engineering (M&E) team has elected to bolster existing manufacturing inspections by hiring three full-time employees to lead on-site Alaska inspectors, adding additional inspection items, and working to revamp our supplier inspection program.

We have also enhanced our intake inspections of newly delivered aircraft, including inspections of each door plug on every aircraft delivered from Boeing before the aircraft enters service.

F. Crew Training and Manual Changes

During the Flight 1282 depressurization event, the Aircraft flight deck door opened unexpectedly. Boeing subsequently confirmed that the flight deck door operated as expected during the event. The Alaska 737 Systems Handbook has been updated to include information we obtained from the accident to notify pilots of impacts that a decompression event may have on the flight deck door.

Flight Operations leadership also highlighted this issue to company pilots and added the issue to second quarter pilot training required for all pilots. The training was completed

prior to June 30, 2024. Alaska also updated its flight attendant procedures for a decompression event to address the potential for the flight deck door to open unexpectedly during a decompression event and added it to flight attendant training.

Beyond the flight deck door, Alaska also made a number of procedural changes, manual updates, and training adjustments based on feedback from the flight crew and lessons learned from this accident. As noted by the NTSB's Factual Reports, these changes and updates pertained to cockpit voice recorder retention, communication between the crew, the use of oxygen masks and portable oxygen bottles, and flight attendant seating, among others.

G. SMS at Alaska Airlines

Alaska believes very strongly in a robust SMS – it is at the center of our safety culture and programs. In 2006, the FAA Flight Standards Service initiated a pilot project with various air carriers for the development of SMS. Alaska and our regional carrier, Horizon Air, participated in the pilot project to help define the upcoming rule and how carriers would apply the SMS to their operation.

Alaska added many of the SMS concepts learned from this early pilot project into pre-existing safety programs as best practices to enhance our safety culture. As the final rule was published in January of 2015 and clear guidance was available, Alaska formed an implementation team and an aggressive schedule to build upon the existing safety program incorporating the requirements of 14 C.F.R. Part 5.

On October 11, 2016, Alaska was the first legacy carrier to receive FAA acceptance of an SMS, after demonstrating compliance with the rule and fully implemented the systems.

Alaska's SMS has matured over the years as an essential component of our operation and established a strong safety culture throughout the airline while also subject to continual improvement.

Alaska also understands that to achieve optimal safety outcomes, there must be avenues by which voluntary and confidential reporting of safety concerns can be made. A strong reporting culture is at the heart of a strong safety culture and a robust SMS.

Alaska constantly strives to make sure employees are aware of all opportunities to raise safety concerns and will continue to work both internally and with regulators to enhance aviation safety.

Transparent sharing of data is essential to bolstering our safety efforts. In 2014, we pioneered a first in industry transparency Memorandum of Understanding with our local FAA

office that allows the FAA inspectors unfiltered access to our operational and safety data and real time alerts on events in the operation. This level of transparency has increased our effectiveness in managing safety risk in our system. Alaska supports the FAA's efforts to further develop opportunities for the industry to enhance transparency and the sharing of information to identify and mitigate hazards in aviation more effectively. Alaska is optimistic about its continued pursuit of industry collaboration to strengthen safety culture, transparency, and compliance program processes. Doing so will increase safety and quality across the industry.

IV. CONCLUSION

Aviation safety requires multiple layers of quality control and safety assurance across the full ecosystem of operators, air traffic control, original equipment manufacturers, component manufacturers, and more. Together, these layers have made the U.S. aviation industry the safest in the world. The door plug incident on Alaska Flight 1282 was an important reminder that these layers require continuous strengthening and improvement.

Alaska has a robust safety culture, sound training program for our pilots and flight attendants, and well-proven operational procedures, and it is committed to continuously strengthening them just as it has for decades. Our safety programs and proven procedures aided our flight crew in recovering from the in-flight emergency and returning the aircraft to the ground in a safe manner. We are grateful for the trust our customers and employees place in us every day.

We thank the NTSB for its work and the opportunity to contribute to this investigation. We appreciate the shared commitment to aviation safety evidenced by the collaborative investigative approach displayed by all parties to the investigation.

Sincerely,

[redacted]

Max Tidwell
Vice President, Safety and Security
Alaska Airlines