

NATIONAL TRANSPORTATION SAFETY BOARD
Investigative Hearing

Alaska Airlines Flight 1282

Boeing 737-9, N704AL

Left Mid Exit Door Plug Separation in Portland, OR

January 5, 2024

Docket No.	SA-543
EXHIBIT	
2M	

**Operational Factors Group
Chairman's Factual Report -
Attachment 12 - NASA ASRS Database
Query Results**
(7 Pages)

DCA24MA063

OPERATIONAL FACTORS

Attachment 12

NASA ASRS Database Query Results

May 1, 2024



[Back to Results Page](#)

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ACN: 2051556 (1 of 3)

Time / Day

Date : 202311
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Relative Position.Distance.Nautical Miles : 30
Altitude.MSL.Single Value : 37000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 MAX 8
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise
Airspace.Class A : ZZZ

Component

Aircraft Component : Cockpit Window
Aircraft Reference : X
Problem : Failed

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2051556
Human Factors : Troubleshooting
Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 75
Experience.Flight Crew.Type : 16500
ASRS Report Number.Accession Number : 2050837
Human Factors : Confusion
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Landed in Emergency Condition
Result.Aircraft : Aircraft Damaged

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

In cruise at, 37,000 ft. from ZZZ to ZZZ1. I (FO/First Officer) was the Pilot Flying. Our cruise altitude was filed 39,000 ft. but we chose to maintain 37,000 ft. for a time in order to avoid a less desirable ride condition at 39,000 ft. for a short time. At 37,000 ft. in visual meteorological conditions, about 30 miles northeast of ZZZ2 airport, the R1 (FO side front) windshield developed a spidering crack engulfing most of the glass. The Captain and I noticed the malfunction and he immediately took control of the aircraft, and I requested a lower altitude with ZZZ Center, which they granted to 25,000 ft. accompanied by a left turn about 40 degrees left due to traffic below us. A short time after we were cleared back enroute now at 25,000 ft. Once established in the descent with the Captain at the controls he asked for the associated QRH. Upon running the QRH we were able to determine with our own physical touch the affected windshield pane was the outer pane. The QRH allowed us to continue to the destination if desired. We also [requested priority handling] with ZZZ ARTCC. With the aircraft under control, the Captain returned aircraft control to me, and they consulted the AOM for guidance on determining how to technically tell which pane of the windshield is broken. This is where some confusion with the guidance came in. After both the Captain and I read over the instructions multiple times our original thought that it was the outer pane stood but the wording on the instructions wasn't exactly clear. We started hearing another unidentified noise coming from the area around my oxygen mask. It sounded like some kind of airflow and both of us could clearly hear it and identify it as something that sounded abnormal. Although no noticeable **pressurization** abnormalities were occurring at the time, we chose to request a lower altitude in order to mitigate issues if a slow **pressurization** issue was occurring. ZZZ ARTCC granted us 14,000 ft. We were able to alert the Cabin Crew there was an abnormality. The Captain and I decided to divert to ZZZ3, as it was closer in front of us after running the QRH and AOM guidance. This decision was derived from the only acceptable airports being ZZZ1, over the Mountains and ZZZ4 prior to more mountains. ZZZ3 was decided for distance as well as Company presence and current altitude. We alerted the Passengers of an issue with the aircraft that could affect **pressurization** so we will be diverting as an abundance of caution. As we prepared for the new approach to ZZZ3 I noticed part of the black seal around the right side of the windshield was detaching and flapping freely in the wind. The Captain conducted the approach and landing as my windshield was obscuring my view and the rest of the approach was uneventful. Airport rescue and firefighting equipment met us upon landing. We taxied to the gate with no further issues noted. The wording could be modified in terms of how to determine which pane (inner and outer) is affected. The pointed object on the window and moving to determine if the crack moves was confusing to me, and also to the extremely experienced Captain I was flying with.

Narrative: 2

We had an event flying at FL370 from ZZZ to ZZZ1. After a "pop", our R1 windshield instantaneously exhibited excessive cracking. Not knowing the extent of the damage, and a possible **pressurization** event, I asked ATC for an immediate lower altitude until we had a chance to diagnose the problem. Cabin **pressurization** did not change. ATC was swamped working multiple frequencies and initially did not want us to descend due to traffic. After stating that we would take a turn to descent he eventually gave us clearance to a slightly lower altitude. After trying to get much lower, ATC implied that the only way we would get it in a timely manner would be to [request priority handling]. We did so and were finally able to get a much lower altitude. During the descent, I had my FO (First Officer) accomplish the "Window Damage-Forward" QRH. Upon executing the checklist, we came to the decision tree in which you choose damage to either the outer pane or inner pane. There was no information on how to determine that, so we referred to Section 5.2.1 Window Damage, of the Non-Normal section of the AOM for an amplified explanation. Upon reading that section, both FO and I took several minutes trying to interpret the meaning of the "pencil test" to determine inner or outer pane damage. That language is confusing and not intuitive at all. Eventually, we determined that we had outer pane damage and completed the rest of the QRH. After sharing "mental models" and applying RRM (Risk Resource Management), we came to the determination that diverting to ZZZ3 was the best solution to minimize unnecessary risk. We landed successfully and without incident. There is a detailed summary of our decision making process and more amplifying information on a report that I also submitted for this incident. Several things could be improved upon for any future people that might encounter this situation. AOM Window Damage - the summary describing how to determine if windowpane damage is inner or outer is very confusing and not very well written. Both my FO and I read it several times, wasting precious minutes on how to determine whether the damage is inner pane or outer pane. This

determination is absolutely crucial as it defines a decision branch point in the QRH - both with vastly different outcomes. For something so critical in a checklist, more information/emphasis needs to be written in this section or better yet, incorporate it into the QRH where it is easily accessible. Since this is so crucial and somewhat time critical, perhaps the first step on the "Window Damage-Forward" might be to start a descent until a determination is made whether it is inner pane or outer pane damage. Also, maybe consideration should be to make this a new QRC checklist item? There are also other ways to determine inner pane vs outer pane than just the complicated "pencil test". After landing, the Maintenance person told us to look at the crack and see where it intercepted the window frame. From there it is apparent whether it is inner pane or outer pane damage. Perhaps in the AOM in this section, or somewhere else in training, show pictures delineating an example of inner vs outer pane damage. Pictures are always great visual learning tools. General unhappiness with ATC. I've noticed a degradation overall of ATC services in the U.S., post-Covid. ATC Personnel are less qualified, less experienced, and generally seem to be very "snappy", short-tempered and not pleasant to deal with. Talking extremely fast - a "mile a minute" - while doing a transcon from coast to coast is very fatiguing for us Pilots. ATC is often working multiple frequencies, and is unable to give good service, while we are only hearing part of the conversation. The initial, high ATC Person working our event at FL370 is one example of this general degradation of service. He was task saturated and more or less forced us to [request priority handling] earlier than I had liked to in order to get a lower altitude in an expeditious manner. All of ATC needs a total revamp. The service is not good, most of the Personnel are inexperienced, overworked, and have short tempers and unpleasant attitudes when working with Pilots. Some of them (none on this event) are borderline unprofessional. Please compel the FAA to spend more money on Air Traffic Control Services!

Synopsis

B737 MAX 8 flight crew reported the cockpit windshield cracked inflight at FL370. Flight crew diverted and landed uneventfully.

ACN: 1892978 (2 of 3)

Time / Day

Date : 202204
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Relative Position.Angle.Radial : 270
Relative Position.Distance.Nautical Miles : 100
Altitude.MSL.Single Value : 20000

Environment

Flight Conditions : Mixed
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 MAX 8
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb
Route In Use : Vectors
Airspace.Class A : ZZZ

Component

Aircraft Component : Pressurization Control System
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 120
Experience.Flight Crew.Type : 5000
ASRS Report Number.Accession Number : 1892978
Human Factors : Communication Breakdown
Human Factors : Troubleshooting
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed As Precaution
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing out, noticed that the **Pressurization** Control Panel went completely blank. **Pressurization** seemed to be working normally. No applicable checklist. 3-way phone call with Maintenance Control and Dispatch left us with the impression that the **Pressurization** Controller was probably working correctly but that our interface with it (Controller panel) would remain inoperative for the whole flight. No circuit breakers were open. Upon discussion among the Flight Crew, we decided that the inability to control the **pressurization** control valve and the inability to see the status of the control valve left us in a position where certain checklists (smoke elimination, emergency descent, loss of **pressurization**) would not be possible. We were told the part was in ZZZ versus our departure airfield of ZZZ1, coupled with an impending overweight landing, dictated the airborne divert to ZZZ. Dispatch ACARS'ed us the divert fuel parameters and we diverted uneventfully. Landed at gross weight 162,100 pounds, about 11,000 pounds overweight. There was a slight delay trying to get turned around to ZZZ due to frequency congestion. We probably had to fly about 40 NM away from ZZZ until ATC was able to work with us. No [priority was requested], as the FOM clearly states that it is not necessary when exercising Captain emergency authority for an overweight landing only.

Synopsis

B737 MAX 8 Captain reported the cabin pressure control panel went blank on climb out. The flight crew elected to divert to an airport where the part was in stock and make an overweight landing at the diversion airport.

ACN: 1823130 (3 of 3)

Time / Day

Date : 202107
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 MAX 8
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb

Route In Use : Vectors
Airspace.Class E : ZZZ

Component

Aircraft Component : Central Warning/Master Caution
Aircraft Reference : X
Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function,Flight Crew : Pilot Flying
Function,Flight Crew : Captain
Qualification,Flight Crew : Multiengine
Qualification,Flight Crew : Air Transport Pilot (ATP)
Qualification,Flight Crew : Instrument
Experience,Flight Crew.Last 90 Days : 150
Experience,Flight Crew.Type : 150
ASRS Report Number.Accession Number : 1823130

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function,Flight Crew : Pilot Not Flying
Function,Flight Crew : First Officer
Qualification,Flight Crew : Multiengine
Qualification,Flight Crew : Air Transport Pilot (ATP)
Qualification,Flight Crew : Instrument
Experience,Flight Crew.Last 90 Days : 210
Experience,Flight Crew.Type : 4500
ASRS Report Number.Accession Number : 1823132

Events

Anomaly,Aircraft Equipment Problem : Critical
Anomaly,Flight Deck / Cabin / Aircraft Event : Other / Unknown
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result,Flight Crew : Returned To Departure Airport
Result,Flight Crew : Overcame Equipment Problem
Result,Flight Crew : Requested ATC Assistance / Clarification
Result,Flight Crew : Landed in Emergency Condition
Result,Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing through 7,000 feet on the ZZZZZ SID, the aural warnings for airspeed, fire and **pressurization** came on. The First Officer and I scanned the flight deck for unreliable airspeed, fire warnings and any possible **pressurization** problems. We were in agreement that none were present and could not locate the source of the warnings, I elected to disengage the autopilot and auto throttles, to verify control of the aircraft. The First Officer and I searched again for any indication of fire or airspeed issues. We found none. With the fire bell still sounding we elected to return to ZZZ and request priority. ATC was notified and vectors given back to Runway XX. Having just departed and well over the gross landing weight, we planned the longest runway available. I notified the A Flight Attendant, to prepare the cabin for landing and that we had about 10 minutes to touchdown. The First Officer computed the landing data and a visual approach was planned. Landing weight was XXX,000 pounds, and the Ref Speed 1XX. ATC provided vectors to a base leg and we were cleared for the visual approach. The landing and rollout were normal and I elected to let the aircraft roll to the end and turnoff, stop the aircraft and allow CFR to inspect for fire. As soon as I stopped the aircraft, I made a PA to the Flight Attendants and Passengers to remain seated. Ground was contacted and we spoke directly with fire command. No evidence of fire was found to exist. The First Officer computed the brake cooling module for and potential issues that would prevent us from parking at the gate or cooling required. None were found. Coordination with ZZZ Operations as to our situation and a gate was completed and we taxied to gate X. At the gate we were met by the Fire Crew, ZZZ Maintenance and Ground Operations. The warnings continued to sound and were not able to be silenced by Maintenance Personnel. I made two logbook entries for the discrepancies and the overweight landing and gave a debrief of the event to the Maintenance Personnel. Dispatch was contacted and informed of the situation and we

agreed to talk later as my main focus was still dealing with passengers and Ground Ops. After passenger deplaning, the aircraft was handed over to maintenance and the First Officer and I went to the Crew lounge, where we contacted Dispatch and conducted a debrief of the events with the Chief Pilot.

Narrative: 2

This event occurred while departing ZZZ from Runway XX, climbing out on the ZZZZ Departure at about 7,000 feet. I was the PM, and had just completed the final flap retraction and a radio hand off to ZZZ Departure. All of a sudden, numerous alarms/warnings sounded on the flight deck and were extremely loud. The PF stayed focused on flying the aircraft in the high density environment. I quickly started to scan all of the panels, Master Caution and Warning indications, **pressurization** panel, cargo fire panel, fire handles, flight instrumentation, airspeed, AOA, and standby indicators. There were NO indications of any light or malfunction anywhere on the flight deck and all aircraft flight parameters seemed normal. The Captain made the decision to advise ATC and return to ZZZ, on Runway XX. Meanwhile all aural alarms continued to sound very loudly which made communication difficult. We discussed the situation. We had just about every major aural alarm sounding at once, with the exception of wind shear. With no other indications presently indicating any kind of system malfunction, we concluded the best option would be to get the aircraft on the ground. This would be an overweight landing by about XX,000 pounds, on a long runway in day VMC conditions. The Captain coordinated with the cabin and operations. We computed landing data, briefed, and ran checklists. We were cleared a visual approach and the Captain completed an excellent uneventful landing to Runway XX. We cleared the runway at the end. I coordinated with CFR (Crash Fire Rescue equipment) and requested them to thoroughly evaluate the aircraft for any fire/smoke issues. I also ran the numbers for any brake cooling issues. The CFR Chief stated there were no indications of fire or smoke. There were no brake cooling issues. ZZZ Ops cleared us to gate X. We resumed taxi to the gate, with CFR following us to ensure absolute safety. We parked the aircraft at the gate and were met by Maintenance and the Fire Chief. THE ALARMS WERE ALL STILL SOUNDING. Maintenance came on board and tried to figure it out, to no avail, prior to us leaving. Passengers were safely deplaned and sent to another gate for continuation to ZZZ1. With the alarms still sounding at the gate, the Captain and I both commented on how fortunate we were to have on noise cancelling headsets, otherwise communication would have been nearly impossible. This was a very unusual emergency and I hope that we are provided follow-up with the cause of the malfunction.

Synopsis

B737 MAX 8 flight crew reported an air turn back caused by a malfunctioning central warning computer.

