

ASRS Database Report Set

Multi-Engine Turbojet Aircraft Upsets Incidents

Report Set Description.....A sampling of reports concerning turbojet uncommanded control surface movement and unusual aircraft attitudes.

Update Number.....38

Date of UpdateJuly 9, 2024

Number of Records in Report Set.....50

Records within this Report Set have been screened to assure their relevance to the topic.

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

The attached material is furnished pursuant to a request for data from the NASA Aviation Safety Reporting System (ASRS). Recipients of this material are reminded when evaluating these data of the following points.

ASRS reports are submitted voluntarily. Such incidents are independently submitted and are not corroborated by NASA, the FAA or NTSB. The existence in the ASRS database of reports concerning a specific topic cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System.

Information contained in reports submitted to ASRS may be clarified by further contact with the individual who submitted them, but the information provided by the reporter is not investigated further. Such information represents the perspective of the specific individual who is describing their experience and perception of a safety related event.

After preliminary processing, all ASRS reports are de-identified and the identity of the individual who submitted the report is permanently eliminated. All ASRS report processing systems are designed to protect identifying information submitted by reporters; including names, company affiliations, and specific times of incident occurrence. After a report has been de-identified, any verification of information submitted to ASRS would be limited.

The National Aeronautics and Space Administration and its ASRS current contractor, Booz Allen Hamilton, specifically disclaim any responsibility for any interpretation which may be made by others of any material or data furnished by NASA in response to queries of the ASRS database and related materials.

A handwritten signature in cursive script that reads "B. Hooey".

Becky L. Hooey, Director
NASA Aviation Safety Reporting System

CAVEAT REGARDING USE OF ASRS DATA

Certain caveats apply to the use of ASRS data. All ASRS reports are voluntarily submitted, and thus cannot be considered a measured random sample of the full population of like events. For example, we receive several thousand altitude deviation reports each year. This number may comprise over half of all the altitude deviations that occur, or it may be just a small fraction of total occurrences.

Moreover, not all pilots, controllers, mechanics, flight attendants, dispatchers or other participants in the aviation system are equally aware of the ASRS or may be equally willing to report. Thus, the data can reflect **reporting biases**. These biases, which are not fully known or measurable, may influence ASRS information. A safety problem such as near midair collisions (NMACs) may appear to be more highly concentrated in area “A” than area “B” simply because the airmen who operate in area “A” are more aware of the ASRS program and more inclined to report should an NMAC occur. Any type of subjective, voluntary reporting will have these limitations related to quantitative statistical analysis.

One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the **lower measure** of the true number of such events that are occurring. For example, if ASRS receives 881 reports of track deviations in 2010 (this number is purely hypothetical), then it can be known with some certainty that at least 881 such events have occurred in 2010. With these statistical limitations in mind, we believe that the **real power** of ASRS data is the **qualitative information** contained in **report narratives**. The pilots, controllers, and others who report tell us about aviation safety incidents and situations in detail – explaining what happened, and more importantly, **why** it happened. Using report narratives effectively requires an extra measure of study, but the knowledge derived is well worth the added effort.

Report Synopses

ACN: 2081933 *(1 of 50)*

Synopsis

Air carrier Captain reported an engine failure during climb. The pilots turned back to the departure airport.

ACN: 2080775 *(2 of 50)*

Synopsis

B737 pilot reported sudden pitch up when hydraulic power was removed.

ACN: 2078141 *(3 of 50)*

Synopsis

Air carrier flight crew reported uncommanded go-around and loss of aircraft control while on approach into IND.

ACN: 2074035 *(4 of 50)*

Synopsis

B737-800 Captain reported severe flight control malfunction during initial climb that required substantial manual control to maintain wings level. Flight crew returned to departure airport and landed safely.

ACN: 2067853 *(5 of 50)*

Synopsis

Beechjet 400 Captain reported a loss of flight control while on initial approach. The Captain stated the aircraft began to pitch down then up before it was recovered for a missed approach. Flight icing was present.

ACN: 2063217 *(6 of 50)*

Synopsis

Air carrier pilot reported uncommanded autopilot engagement during departure climb.

ACN: 2060971 *(7 of 50)*

Synopsis

Flight crew reported during flight they experienced several equipment issues. While on descent deploying spoilers, aircraft made a rapid inadvertent roll. The flight crew regained control of the aircraft and landed safely.

ACN: 2059459 *(8 of 50)*

Synopsis

Cessna 550 flight crew reported a loss of Captain's primary flight instruments and uncontrollable elevator trim causing a loss of control. The Captain recovered the aircraft and landed safely using the co-pilots flight instruments.

ACN: 2056126 *(9 of 50)*

Synopsis

B737 flight crew reported a momentary loss of aircraft control during final approach at 7,000 ft. The aircraft rolled to the right approximately 30 degrees with the autopilot engaged. The crew disengaged the autopilot and regained control of the aircraft.

ACN: 2055349 *(10 of 50)*

Synopsis

CRJ-200 flight crew reported experiencing a runaway rudder trim issue shortly after encountering wake turbulence. The flight continued to destination after successful troubleshooting of the rudder trim anomaly, but the flight crew stated that the QRH was missing references to perform other procedures that were related to the issue.

ACN: 2055188 *(11 of 50)*

Synopsis

B737 flight crew reported receiving a bank angle alert after takeoff that was quickly corrected. The flight crew believes this may have been caused by either wake turbulence from a preceding aircraft or a gust at altitude.

ACN: 2042301 *(12 of 50)*

Synopsis

CRJ-700 flight crew reported selecting the wrong checklist when they experienced a stabilizer trim runaway on climb out. The problem was corrected and the flight continued to destination.

ACN: 2032428 *(13 of 50)*

Synopsis

A320 Captain reported experiencing constant uncommanded pitch up movement while on manual flight during climbout requiring forward pressure. The flight crew contacted Dispatch and Maintenance and decided to return to the departure airport.

ACN: 2031640 *(14 of 50)*

Synopsis

Air carrier flight crew reported ADC failure inflight causing temporary aircraft loss of control.

ACN: 2030181 *(15 of 50)*

Synopsis

Air carrier flight crew reported flying in RVSM airspace with the autopilot off due to stabilizer trim issue.

ACN: 2025809 *(16 of 50)*

Synopsis

EMB-175 Captain reported a flight control anomaly where the control column moved momentarily during cruise flight without an EICAS warning message in flight. The crew diverted to an alternate airport and landed safely overweight.

ACN: 2025627 *(17 of 50)*

Synopsis

EMB-175 flight crew reported a violent vibration and ENG 2 FAIL message during takeoff roll. The crew rejected the takeoff and returned to the gate where the aircraft was turned over to maintenance.

ACN: 2023665 *(18 of 50)*

Synopsis

B737 pilot reported stabilizer trim and autothrottle malfunctions. Flight crew returned to departure airport and landed uneventfully.

ACN: 2021291 *(19 of 50)*

Synopsis

B737 First Officer reported uncommanded leading edge flap deployment in cruise flight. Flight crew made an uneventful landing at destination.

ACN: 2014154 *(20 of 50)*

Synopsis

B737 flight crew reported experiencing an abrupt pitch down event when engaging the autopilot system, resulting in an immediate return to the departure airport.

ACN: 2013480 *(21 of 50)*

Synopsis

CE-560XLS Captain reported a pitch runaway during descent from cruise altitude. Flight crew diverted and landed normally.

ACN: 2010881 *(22 of 50)*

Synopsis

Flight crew reported #1 thrust reverser deployed at 500 ft. on departure. Crew shut engine down per reverser deployed" checklist and returned to field.

ACN: 2009096 *(23 of 50)*

Synopsis

Air carrier First Officer reported severe turbulence resulting in an injured flight attendant. The reporter stated they encountered 30 to 45 degrees of uncommanded roll.

ACN: 2001837 *(24 of 50)*

Synopsis

CRJ flight crew reported uncommanded rudder and aileron trim movement after take-off. The flight crew performed an air turn back and made a precautionary landing at departure airport.

ACN: 2001065 *(25 of 50)*

Synopsis

B737NG Captain reported encountering wake turbulence departing LAS in trail of a B757.

ACN: 1999132 *(26 of 50)*

Synopsis

Pilot reported an uncommanded yaw during the takeoff roll. A rejected takeoff was performed and it was determined that both left main tires had deflated.

ACN: 1988714 *(27 of 50)*

Synopsis

Learjet 60 Captain reported aircraft loss of pitch and roll control at 41,000 ft., resulting in a loss of altitude. The Captain disconnected the automation to recover the aircraft at 38,500 ft. and received course changes from ATC. Once in smoother air, without aircraft damage or injuries, the flight continued to destination.

ACN: 1987335 *(28 of 50)*

Synopsis

B737-800 flight crew reported after a very smooth landing the speed brakes auto retracted and the auto throttles went to Go Around power. The Pilot Flying executed a go-around.

ACN: 1986485 *(29 of 50)*

Synopsis

CE750 First Officer reported encountering wake turbulence departing FLL in trail of an A320 that resulted in a 45 degree roll.

ACN: 1977462 *(30 of 50)*

Synopsis

A319 flight crew reported an inflight upset resulted when they encountered wake turbulence on arrival into EWR in trail of a B777.

ACN: 1973695 *(31 of 50)*

Synopsis

CRJ-900 Captain reported encountering wake turbulence on descent into JFK in trail of a B777.

ACN: 1973689 *(32 of 50)*

Synopsis

CRJ-900 flight crew reported encountering wake turbulence in trail of a B747 on approach to JFK.

ACN: 1971513 *(33 of 50)*

Synopsis

B767 flight crew reported a #1 Engine Failure in cruise followed by significant vibration. The flight crew diverted to make a precautionary landing.

ACN: 1966492 *(34 of 50)*

Synopsis

B737-800 pilot reported encountering sudden moderate to severe turbulence in the climb between FL370 and FL380 that resulted in airspeed and altitude deviations.

ACN: 1965014 *(35 of 50)*

Synopsis

CRJ-900 First Officer reported a Horizontal Stabilizer Trim Run Away condition during approach. The flight crew ran the QRH and the Run Away conditioned ceased. The flight crew continued the approach to landing at destination airport.

ACN: 1960739 *(36 of 50)*

Synopsis

EMB-505 Captain reported encountering wake turbulence on approach to LAS in trail of a B787.

ACN: 1959896 *(37 of 50)*

Synopsis

B747-400 First Officer reported severe turbulence in cruise flight resulting in temporary loss of aircraft control.

ACN: 1958049 *(38 of 50)*

Synopsis

CRJ-200 flight crew reported autopilot malfunction in cruise flight resulted in the airplane pitching up followed by a TCAS RA.

ACN: 1957644 *(39 of 50)*

Synopsis

B737-800 First Officers reported this particular 737 has yaw control problems. One pilot reported uncommanded rolls and the other pilot reported receiving information from other pilots and their own experience of perpetual problems. Both FOs refused to fly the aircraft.

ACN: 1955247 *(40 of 50)*

Synopsis

Gulfstream G-IV flight crew reported loss of both flight guidance computers on final approach. Reporter stated this is a recurring issue.

ACN: 1950812 *(41 of 50)*

Synopsis

B737-800 Captain reported loss of autopilot and hydraulic system failure caused controllability issues in flight. The flight crew performed a go around, regained aircraft control and landed at destination airport.

ACN: 1948076 *(42 of 50)*

Synopsis

Air carrier Captain reported two hard over events when connecting Autopilot A. Flight crew disconnected autopilot and hand flew aircraft back to departure airport.

ACN: 1948075 *(43 of 50)*

Synopsis

A321 flight crew reported flight control malfunction during departure climb resulting in a return to the departure airport.

ACN: 1946791 *(44 of 50)*

Synopsis

Air carrier flight crew flying an ERJ-170 aircraft reported autopilot and pitch trim failure inflight.

ACN: 1943170 *(45 of 50)*

Synopsis

CRJ-900 Captain reported encountering wake turbulence departing JFK in trail of a B757, noting that the recovery required full aileron deflection.

ACN: 1942032 *(46 of 50)*

Synopsis

EMB-175 Captain reported encountering severe turbulence, resulting in a momentary loss of aircraft control and an altitude deviation of 600 ft. After exiting the turbulent conditions,

the flight continued to the destination airport, with only a minor injury sustained by a Flight Attendant.

ACN: 1940581 *(47 of 50)*

Synopsis

B737 Captain reported autoflight system malfunction. The Captain disengaged the autoflight system and returned to departure airport.

ACN: 1940427 *(48 of 50)*

Synopsis

B737-700 First Officer reported "...2 events of aileron roll resistance left/right followed by an excessive bank...".

ACN: 1939715 *(49 of 50)*

Synopsis

EMB-145 flight crew reported encountering wake turbulence on approach to CLT in trail of an A321 that resulted in an aggressive roll exceeding 45 degrees of bank angle.

ACN: 1841823 *(50 of 50)*

Synopsis

A CE 525 Pilot reported an autopilot malfunction caused the aircraft to roll to the right, resulting in a temporary loss of control.

Report Narratives

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 15

Altitude.MSL.Single Value : 22000

Environment

Light : Night

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Nav In Use : GPS

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZZZ

Component

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Failed

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 : 165

Experience.Flight Crew.Type : 10000

ASRS Report Number.Accession Number : 2081933

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Distraction

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

Climbing through about 22,000ft, we heard a load thud accompanied by a sudden yaw. I was PF (Pilot Flying). The autopilot was on. The autopilot remained engaged. I shallowed the climb. We analyzed the situation and determined that the # 2 Engine had seized. I instructed the FO (First Officer) to [request priority handling] with ATC and ask for a turn back to ZZZ. We completed the Engine Failure Severe Damage QRC and then I transferred control to the FO, while I completed the checklists. I advised the Flight Attendants and asked if they saw or smelled anything unusual. They were aware that the engine had failed and described a large fireball that erupted briefly from the engine. I sent a diversion ACARS message to Dispatch with the note, "Engine failure" in the comments section. I also called ZZZ Ops and ensured they knew we were returning, and that Dispatch was aware. I updated the performance data and sent for landing data for Runway XX. I only sent for flaps 30 numbers as I was getting task loaded at this point and ATC had just turned us onto a final approach. I knew the runway was one of the longest, so I wasn't really concerned with having the exact stopping margin. Had I sent for the Flaps 15 Engine Failure numbers, I would have also received the prompt for brake cooling numbers. With the distraction of coordinating with ATC and ARFF (Airport Rescue and Firefighting), we did not check those after landing. I took control at about 1,000ft agl. We were a little fast and I used the speedbrake at flaps 15 to slow us down. We were also slightly low on the PAPI, but I was able to easily correct, and we landed uneventfully in the Touchdown Zone. I stopped the aircraft in the runway and instructed the ARFF Crew to inspect the entire aircraft. After receiving the "All Clear," we taxied to the gate.

Synopsis

Air carrier Captain reported an engine failure during climb. The pilots turned back to the departure airport.

Time / Day

Date : 202310

Local Time Of Day : 1801-2400

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Mission : Test Flight / Demonstration

Flight Phase : Cruise

Component

Aircraft Component : Elevator ControlSystem

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

ASRS Report Number.Accession Number : 2080775

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Procedure

Primary Problem : Aircraft

Narrative: 1

Elev had been removed and weighed and required manual reversion Functional Check Flight (FCF). Aircraft had failed check previously and a refly to verify within tolerance. The moment hydraulic power removed aircraft went into high G increase in pitch and had to immediately restore hydraulic to return to controlled flight. Elev was found to be significantly out of tolerance. Suggestion: Continue the operation of functional check flights as this aircraft would have been in possible loss of positive control of aircraft in the event of complete hydraulic failure. Manual reversion is a significant back up relied upon

on the B737 aircraft and can be out of tolerance which requires the FCF flight to verify stability.

Synopsis

B737 pilot reported sudden pitch up when hydraulic power was removed.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : IND.Tower

State Reference : IN

Aircraft

Reference : X

ATC / Advisory.Tower : IND

Aircraft Operator : Air Carrier

Make Model Name : Medium Large Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class C : IND

Component

Aircraft Component : Autoflight System

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

ASRS Report Number.Accession Number : 2078141

Human Factors : Human-Machine Interface

Human Factors : Confusion

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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 2078157

Human Factors : Human-Machine Interface

Human Factors : Confusion
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Ground Equipment Issue
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Airport
Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings
Contributing Factors / Situations : Human Factors
Primary Problem : ATC Equipment / Nav Facility / Buildings

Narrative: 1

We were cleared for the ILS 32 into Indy. We intercepted the glide slope from beneath, and then as I was transitioning outside as the airfield was in sight, the aircraft initiated a go-around seemingly on its own after first trying to dive, then trying to overcorrect pitch. This placed the aircraft into a near stall condition on the autopilot (stall tape rapidly approaching the speed), so I disconnected the autopilot and flew manually on the go around (GA). I decided to continue the execution of the GA even though we would have had plenty of time to be stable, because I was unsure of why it had entered GA mode. My hands were on top of the thrust levers, and the First Officer (FO) also indicated he did not hit the TOGA button. We received no messages, aural alerts, and the stick shaker did not activate. We executed the go around and came around for another try. This time I had a suspicion that it was a false glide slope so I flew it manually using the VGSI and completed a safe landing. On the second approach, we noticed the glide go full deflection under us in about 1-2 seconds at around 2500 ft., then immediately snap back in the vicinity of the flight path. We were following the VGSI this time outside, but I believe that may have been the cause of the first undesired state. We reported our observations to Tower and Ground. I don't recall noticing any vehicles or aircraft near the approach end. Suggestions: I'm not sure what we could have done differently. We followed our SOPs for setup, initiation, and conducting the approach. I did have to go against the SOP on following the Flight Director (FD) or pitching to 12 degrees as the stall tape was rapidly approaching the speed due to, essentially, G-loading. However, we did execute the SOP in effect, flying the airplane first and foremost.

Narrative: 2

On Approach into IND shooting the ILS 32 I was pilot monitoring. Approach was normal and we were fully configured approaching the FAF at BTTLR. Autopilot and auto throttles were engaged. We were in approach mode with LOC and GS captured. At around 2500ft MSL glide slope was lost. The plane on autopilot initially pitched down to catch the glide slope then when it was fully gone a second later entered a go around mode. Neither I nor the Captain had hit the TOGA button to our knowledge. We hesitated for a second to try

and perceive what the aircraft was doing without our input. The Captain then took manual control disengaging autopilot and calling for a go around. We began to clean up the aircraft with flaps 2 and toga set. I called Tower to let them know we were in a go around and they gave us a heading and altitude and asked for the reason. I omitted to call positive rate which consequently didn't get the Captains attention to call for gear up as he was busy hand flying. I was late to get the gear up but soon had the aircraft reconfigured to re shoot the ILS 32. We briefed the possibility of the automation losing the glide slope again and agreed if it occurred in the same spot to continue the approach hand flown. On the previous approach we had the runway in sight with the VGSI and felt safe to continue as it was VMC. On the second attempt we lost glide slope again in the same spot with the aircraft reacting the same way first attempting a pitch down motion to capture the glide slope loss. The glide slope then came back around 3 seconds later which I had not noticed on the first attempt, probably due to task saturation in the go around. The Captain immediately got autopilot (AP) off before a go around would be triggered and we continued on the approach with a normal landing. On the Ground frequency the Captain let ATC know we had twice lost the glide slope at 2500ft. Suggestions: Paying closer attention to my pilot monitoring duties I may have caught the glide slope loss sooner and called for the go around. This would have taken the surprise factor out and I could have reacted to the situation quicker.

Synopsis

Air carrier flight crew reported uncommanded go-around and loss of aircraft control while on approach into IND.

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Weather Elements / Visibility : Cloudy

Light : Night

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Flight Phase : Initial Climb

Airspace.Class B : ZZZ

Person

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2074035

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Confusion

Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

ZZZ to ZZZ1. CA PF (Captain Pilot Flying), less than 300 hours in type. FO PM (First Officer Pilot Monitoring), less than 100 hours at this carrier. XXX souls on board. ZZZ RWY XXR. Flaps 5 takeoff. 26K thrust. Assumed temp 39C. 150,900 lbs. ZZZZZ SID. Night. Thin cloud layer at 5000 feet. Unrestricted visibility. This was a severe flight control malfunction. What follows is my best recollection of the event. ZZZ Tower cleared us for takeoff on RWY XXR. During initial climb, at 500 feet AGL, I began a hand flown right hand turn in accordance with the ZZZZZ Departure. As I deflected the yoke to the right, it snapped forcefully right, and I experienced an extreme, uncommanded roll rate. I was struggling with both hands to stop the yoke from banking us beyond 30 degrees. The yoke was still commanding a greater roll rate. Startle factor was tremendous. I could not verbalize any words to the FO (PM). There were no master cautions, no master warnings, and no annunciator lights. Then suddenly the yoke became very light. As I moved the yoke back toward center, the extreme uncommanded roll rate kicked in to the left. I was experiencing severe longitudinal instability, and I was completely task saturated. With the instability, it was a struggle just to hold the wings level. I started making rapid commands to the FO: "Bug Up Bug!" "Bug 200!" "Bug our speed!" ZZZ Departure then told us something about turning right to a fix, and contacting center. I told the FO: "No, advise ATC, flight control malfunction, present heading, 5000 feet." While climbing on the 025 heading, I continued to give left and right yoke inputs to help with troubleshooting. Somewhere between 3000 ft and 5000 ft MSL I determined I could deflect the yoke left to make a left turn and the aircraft felt normal. However, when I moved the yoke back toward center, or if I had any yoke inputs right of center, it felt like my right aileron was going straight to the full up position. Wings level felt like I was trying to balance the roll axis on a needle point. Continual yoke inputs were required to keep the wings level. What was wrong? Aileron Jam? No, there isn't any binding. Hydraulics? No, I would have an annunciator light. Bad PCU? No, the good PCU would overpower the faulty one. Feel and centering mechanism? No, left turns feel normal. I wanted the aircraft on the ground ASAP because I didn't know how much longer we could maintain positive aircraft control; any further deterioration would likely be catastrophic. While on the 025 heading and 5000 feet, ZZZ assigned a right hand turn to some heading and I told the FO "No, we can only make wide left turns." He informed ZZZ accordingly. ZZZ assigned us a left turn to heading of 270. I spun the bank angle selector to 10 degrees and began a shallow banked left hand turn. As I rollout, on heading 270, the yoke tries to overpower me again, but I anticipate it, and manage to level the wings. Nothing is improving, but it also isn't getting worse. I'm adapting, anticipating, learning how to manage this longitudinal instability and the uncommanded roll rates. On crosswind, the FO asked me if I would like him to brief the flight attendants. This question helped bring me solidly back into focus. "Yes, tell the FAs we are returning to ZZZ, Precautionary Landing, 10 mins." Why precautionary? I still had normal control of my vertical axis and lateral axis. Winds 350. Little aileron needed, if any, so I can keep firm pressure on the yoke, maintain positive control, and complete a safe landing. Then the FO asked me if I wanted him to talk to the passengers. "Yes, tell them shortly after takeoff we had a small indication up front so we are returning to ZZZ to let our maintenance team look at the aircraft. We'll provide more information on the ground."

ZZZ then gave us a turn to heading 180. I share with the FO what I'm experiencing, and that I may need his help to give me more left aileron input. I asked him to notify dispatch and to include "aileron malfunction" in the text. Next, I ask the FO to look through the QRH for anything flight control and aileron related. We couldn't find anything that fit our situation. Then I have the FO complete the After Takeoff Checklist, but keep the Flaps at 5, followed by the Descent Checklist. The FO asks if I wanted him to set up and brief the approach. "Yes." Then I told him we will do Flaps 30, Autobrake 3, and to run the Before Landing Checklist. ZZZ is trying to give us a base turn. I want more distance so I have room to make a 10 degree banked turn, and to gently correct an overshoot. The FO relays to ZZZ that we want a 20 mile final. I overshoot base to final a little so we are on approximately a 340 heading to join. ZZZ asks if we can turn right at all? "No." Controller says that is okay, that he will just give us a big left hand turn so we can rejoin. I tell the FO, "No, tell him we are joining from here. We will make it work." Why? It is going to take me 6-9 minutes to make a huge left turn and I don't know how much time we have before our problem gets worse. The priority is still to get on the ground ASAP. I hit the DATA button, see 4000 ft by the fix were pointing toward, and start making commands. "Bug 180...Flaps 10...Set 4000 feet...vertical speed down 1000 fpm...arm Approach Mode." When he selected Flaps 10, the yoke started pulling left and right while the flaps were in transit, but I'm able to overpower the yoke and keep our wings level. What is going on? Flaps and ailerons are independent systems. This should not be happening. "Set 3000 feet, vertical speed down 1000 fpm...Gear down, Flaps 15" and with the Flaps 15 selection here goes the yoke oscillating left and right again. "Flaps 25...Flaps 30...Below the Line." The yoke was pulling with each flap selection. I visually verify Gear Down and Green, Flaps 30, Speed Brake Armed. We are on the Glide Slope. There will not be a go around. Something inside told me I wanted a less aggressive brake application, so around 1000 feet I tell the FO to select Autobrakes 2. With continual lateral inputs I'm able to keep the aircraft balanced on the roll axis. At approximately 20 feet Tail Strike, Tail Strike, Tail Strike is flashing on my HUD. I relax a little back pressure. Smooth touch down. Fly the nose wheel down. CA "Manual Braking." FO "Autobrakes Off." We are tracking centerline and there is a sudden jerk/pull to the right. Very odd. Like a sudden rudder kick, a grabby brake, or a right hand gust but winds are 350. I'm able to correct with brake and rudder. We slow to a near stop and clear at [taxiway] 1. Airport rescue and fire fighting asks if we require any assistance. "Tell him negative and thank you." ZZZ asks if we [are able to continue to gate]. "Yes." Ramp clears us straight in to the gate. ZZZ Ramp authorizes us to park with DGS (Docking Guidance System) only. I set the brake and we complete our shutdown flow. I tell the FO to keep the door closed. I need a minute to get myself composed. The severity of what we experienced is kicking in. I make a quick PA, "Ladies and Gentlemen, I spoke to our maintenance team and they want to take this aircraft to the hanger for troubleshooting, so please gather all of your belongings, exit the aircraft, go to the top of the jetway, and we will have further instructions. Thank you again for your patience." I had not really spoken to maintenance, but I knew the aircraft was done, and the FO and I were done. While the passengers were deplaning, I was able to finish my duties. I asked the FO to see if we had a tail strike. We did not. I called my dispatcher and he asked me if I landed overweight. This is when I was first aware that yes we landed overweight. I spoke to the Duty pilot, two local maintenance teams, and received a call from my Chief Pilot. The logbook entries took some time for me to complete, because I was trying to describe the malfunction with accurate wording, and because the aircraft maintenance log discrepancy blocks are character limited. With 8 discrepancy entries complete, we turned the aircraft over to maintenance and went home. Reflection 1) Both pilots were needed to meet the demands of the situation. This is exactly why we must keep two pilots at the controls. I was incredibly saturated with maintaining aircraft control, and intensely thinking through the malfunction and appropriate tasks. When I gave commands to the FO, I had to trust that he was completing them exactly as I asked. I was only able to

divert my attention for very brief moments to verify the big items: ILS Identifier, Gear Down and Green, Flaps 30, Speed Brakes Armed. Everything else was a bonus. The FO did a magnificent job of executing PM duties. Further, he led me with appropriate questions that helped pull me from being overwhelmed to managing the situation, and he perfectly executed PAs that are normally performed by the CA. Reflection 2) It may have been the right hand flight spoilers that were deflecting to full stop, and not an aileron problem. This would help explain why left turns were fine, but right turns were not. I don't know for certain because this fleet does not have synoptic pages. Reflection 3) After we were safely on the gate, I located two, less severe RH Aileron write ups approximately two weeks prior to this flight. If I had seen this information prior to the flight, I would have briefed it as a threat and experienced less startle factor when we experienced the severe uncommanded roll issue. Further, those write ups may also have been a flight spoiler issues but again, we pilots don't know for certain without supporting evidence from a flight control synoptic page. Cause: TBD. Unknown mechanical malfunction resulted in aircraft longitudinal instability and extreme uncommanded roll rates. Suggestions: This fleet must be equipped with system synoptic pages. Synoptic pages provide critical information to pilots during an emergency. If we had a flight control synoptic page, we would have observed exactly what was happening with our spoilers and ailerons, and responded appropriately. As it was, we were in the blind and having to guess as to what was happening with the primary and secondary flight controls. Further, the flight synoptic page would have allowed us to create more precise write ups, thus focusing the efforts of our maintenance team, and returning the aircraft to service sooner. Additionally, my three day lookback in the aircraft maintenance log didn't reveal previous RH Aileron issues. From now on, I will do a two week review of the log.

Synopsis

B737-800 Captain reported severe flight control malfunction during initial climb that required substantial manual control to maintain wings level. Flight crew returned to departure airport and landed safely.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 7000

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Nav In Use : GPS

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class D : ZZZ

Component

Aircraft Component : Aeroplane Flight Control

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 2067853

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Diverted

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Executed Go Around / Missed Approach
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Equipment Problem Dissipated

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Weather
Primary Problem : Ambiguous

Narrative: 1

Upon passing the final approach fix on the RNAV XXL, we made the final configuration to the aircraft by selecting Flaps 30. At that time, the yoke of the airplane started to shake very badly. Right after it started to shake, the aircraft did an uncommanded pitch down. The pilot flying immediately stated to make the correction and the aircraft then went into a steep pitch up. I then assisted the pilot flying in bringing the nose to level. At that moment, the aircraft went into another uncommanded pitch down. I told the pilot flying to go around and we started a left climbing turn. I advised the tower that we were going around and that we needed an altitude above the overcast layer. I was directed to call Departure. I advised them that we had an unknown control issue and that we needed an altitude above the cloud layer. They cleared us to 7000 feet. Once above the cloud layer and a brief moment of flying, the pilot flying stated that the flight controls appeared to be operating normally. I we requested a diversion to ZZZ1 where we landed without incident. Cause: I think icing on the Horizontal Stabilizer may have been the issue. Suggestion: We conducted the flight according to all SOP's. All anti ice measures were used. There was nothing that we did to cause this incident.

Synopsis

Beechjet 400 Captain reported a loss of flight control while on initial approach. The Captain stated the aircraft began to pitch down then up before it was recovered for a missed approach. Flight icing was present.

Time / Day

Date : 202312

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A220-300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Climb

Airspace.Class C : ZZZ

Component

Aircraft Component : Autoflight 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 Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2063217

Events

Anomaly.Aircraft Equipment Problem : Critical

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Result.Aircraft : Equipment Problem Dissipated

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Software and Automation

Primary Problem : Aircraft

Narrative: 1

I was conducting IOE with a new hire FO (First Officer) and we had planned & briefed a no AT (Auto-Throttle) takeoff as part of his training. FO was PF (Pilot Flying). Initial takeoff roll was normal. Above 100 knots and approaching V1 we received an CONFIG AP EICAS with associated master warning & "Config Autopilot" aural warnings. What seemed like simultaneously we also heard a continuous AP (Autopilot) disconnect cavalry charge. While this was occurring the aircraft began to rotate while still prior to V1. I immediately announced that I had control and inputted nose down side stick input to prevent the pitch from increasing any further and kept pitch attitude flat until speed/energy increased and then transitioned to a normal climb pitch. Once at a safe altitude I transferred control back to my FO who continued to hand fly the aircraft. After the aircraft was cleaned up and we were climbing thru what I estimate to be approximately 4-5000 ft. we experienced another uncommanded AP engagement followed by what appeared to be an immediate disengagement based on the AP disconnect cavalry charge occurring immediately. We silenced the warning with the AP push button and FO continued to hand fly. Above 10000 ft. the FO and I discussed turning the AP on and I agreed we could attempt it. My finger went up to the AP switch on the FCP and the AP immediately engaged before I even had actually pressed the button but had only just barely touched it. I took control and disconnected the AP and attempted to reproduce what had just happened but from there on out the AP button and system operated normally. We elected to continue the flight to ZZZ which progressed without further incident. Shortly after the first two uncommanded AP engagements I did press the "Pilot Event" push button to flag the data. This was written up in the Maintenance logbook and I briefed Maintenance Control on what occurred upon arrival to ZZZ. At no time during any of the uncommanded AP engagements did I or my FO have our hands anywhere near the FCP, nor to the best of our recollection did we disengage the AP - each time it appeared to do so on its own, though it happened so fast neither of us can say for sure if we had either pressed the AP Disconnect push button on the sidestick or made any sidestick inputs that may have kicked the AP off. Based on what happened, my educated guess is that we had a faulty AP switch on the FCP that was causing the AP to engage and disengage on its own. We left the aircraft with ZZZ Maintenance who indicated they would begin troubleshooting the issue.

Synopsis

Air carrier pilot reported uncommanded autopilot engagement during departure climb.

Time / Day

Date : 202312

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 41000

Environment

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Cessna Citation Sovereign (C680)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Flight Phase : Descent

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Radio Altimeter

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Autoflight System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

ASRS Report Number.Accession Number : 2060971

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 2060973
Human Factors : Human-Machine Interface
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

We picked Aircraft X up from maintenance out of ZZZ. We were unable to identify what maintenance had exactly done due to data needing to be entered in electronic logbook. All preflight checks were performed and checked out well. We had an uneventful takeoff and climb out. On climb out we noticed our radar altimeter was acting up and saying it was at - 5 feet. Everything else looked normal. We were unable to retrieve TA/RA we had TA only. Everything was still ok, but we began to wonder what warning indications we would get during the descent with lower power setting and no gear down or flaps put in. As we started our descent from FL410, my Captain noticed that by reducing to flight idle, we had a loud gear horn, which we expected. We continued our descent down, and knew we would need speedbrakes to slow down and descend to prevent the gear horn from going off at flight idle. My Captain started to use the speedbrakes at FL180. The airplane abruptly went into an uncommanded 50 to 60 degree bank to the left with the autopilot still engaged. My Captain stowed the speedbrakes and the aircraft returned to straight and level flight. All speedbrakes panels on both sides were indicating in the out and up position when we did this. We elected to continue the approach and not use speedbrakes. We got configured with flaps and gear as speeds allowed to slow down and descend on the approach. The rest of the approach and landing was uneventful.

Narrative: 2

I was pilot flying. The plane was in Maintenance in ZZZ for several days and we were unable to determine what work was performed as the electronic logbook only displays " data to be entered". This was the first flight after maintenance. Preflight checks of control surfaces were normal with no discrepancies noted. After takeoff, we noticed the radar altimeter was not working and it remained so for the entire flight, indicating -5 feet elevation. As a result, the TCAS automatically stayed in TA mode only. The RA test button was pressed and after the full test, the RA still was showing -5 and TA ONLY still displayed. As a result of this, the gear horn would sound whenever we went to idle thrust with the gear up. In an unrelated issue, on descent through about FL180, I deployed the spoilers about half deflection with the autopilot engaged and the aircraft rapidly rolled to the left to a 50 Degree bank. Closing the spoilers removed the problem and the autopilot returned wings level. The flight controls display was indicating all spoilers deployed. We continued the flight without using spoilers and landed safely. This 680 fleet routinely has many serious maintenance issues and I've had more emergencies in this fleet than any other

flying I've done in my past 10000 hours. I don't feel these old aircraft are safe and yet Company X continues to operate them.

Synopsis

Flight crew reported during flight they experienced several equipment issues. While on descent deploying spoilers, aircraft made a rapid inadvertent roll. The flight crew regained control of the aircraft and landed safely.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 36000

Environment

Flight Conditions : IMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

Make Model Name : Citation II S2/Bravo (C550)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Attitude Indicator(Gyro/Horizon/ADI)

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Horizontal Stabilizer Trim

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 7200

Experience.Flight Crew.Last 90 Days : 145

Experience.Flight Crew.Type : 2100

ASRS Report Number.Accession Number : 2059459
Human Factors : Situational Awareness
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 644
Experience.Flight Crew.Last 90 Days : 3
Experience.Flight Crew.Type : 93
ASRS Report Number.Accession Number : 2059422
Human Factors : Workload
Human Factors : Troubleshooting
Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Software and Automation
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

I just wanted to tell what happen on my Citation flight from ZZZ2 to ZZZ1. The citation was an old 550 that's been modified so many times they can become dangerous. The flight took off and while I was in flight in IMC we started getting instrument errors with the attitude Gyro and the captain side started failing the auto pilot gets info from the flight director and kicked off and nose down effect happen. I immediately corrected everything and descended below RVSM to stay safe and gained control just to reset everything back up and I was going along fine and this time it happen again with runaway trim. I then pulled the circuit breakers to gain control and let ATC know what was going on as they

were great to work with. Once I gained control back, I just hand flew the aircraft as the whole captain's side instruments were basically out. I had vertical speed, and the HSI and the GPS. I had to then use the co-pilot's instruments till I landed. The issue we could have when we landed was the operator installed a remote inverter switch on the co-pilot's arm rest in a bad position and it must have gotten hit and turned off. I didn't get any CASS message or any light on the panel saying what was wrong. So hopefully the FAA might want to start limiting all these mods like this to keep stuff like this from happening again.

Narrative: 2

While flying from ZZZ2 to ZZZ1 at 36000 ft. while in contact with ATC, the autopilot suddenly failed to maintain altitude. As the pilot not flying, I was covering the radio. I notified ATC and requested to leave RVSM airspace. We were cleared to 28000 ft. We stabilized the aircraft and continued at 28000 ft. to ensure safety. After transitioning to ZZZ, the PIC (Pilot in Command) attitude indicator tumbled. As we were troubleshooting, the autopilot suddenly began a rapid bank to the left and a diving attitude. With the PIC dealing with a tumbled gyro, I took the controls, depressed the autopilot disconnect, and held the disconnect depressed as if for run away trim. I then told the PIC to pull the pitch trim circuit breaker and notify ATC. We were cleared to 20000 ft. and ATC queried if we needed assistance. With the autopilot disabled and circuit breaker deactivating the trim I was able to manually fly the airplane. We continued our descent and upon passing 18000 ft. we entered VMC and I was able to continue manual control with visual flying to ZZZ1 with no further deviation or issue. The aircraft was turned over to maintenance.

Synopsis

Cessna 550 flight crew reported a loss of Captain's primary flight instruments and uncontrollable elevator trim causing a loss of control. The Captain recovered the aircraft and landed safely using the co-pilot's flight instruments.

Time / Day

Date : 202311

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : ZZZ

Component

Aircraft Component : Autopilot

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 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 : 185.47

Experience.Flight Crew.Type : 555.27

ASRS Report Number.Accession Number : 2056126

Person : 2

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 2311.45
Experience.Flight Crew.Last 90 Days : 155.97
Experience.Flight Crew.Type : 1029.18
ASRS Report Number.Accession Number : 2056131

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
When Detected : In-flight
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While at 7,000 ft., flaps up, 210 knots and autopilot (AP) engaged, just prior to turning to final approach course, jet annunciated a "Roll Authority" caution, accompanied by a right roll off of approximately 30 degrees. FO airspeed stayed constant at approximately 212 knots. PF disengaged AP, and we both went through upset procedures. Aircraft was controllable within a few seconds of AP being disengaged and upset procedures accomplished. Roll authority checklist was referenced, and AP was left off for the remainder of the flight. There was approach traffic approximately 4 miles ahead of us on final, but airplane behavior and AP reaction suggests wake turbulence was not the cause.

Narrative: 2

On approach, at 7,000 feet, with Autopilot A engaged, the aircraft suddenly started to roll and the warning "roll authority" was present. We were in mostly smooth air at the time and it did not feel like wake turbulence. I clicked off the autopilot and for a few seconds it felt like I did not have full control of the airplane. Control very quickly came back and we landed without incident. We ran the appropriate checklist, which is not at all helpful as far as providing ideas as to what to do (such as to not engage the autopilot). We did not declare an emergency as we had full control of the airplane and thought it was just an autopilot failure. In retrospect, I would declare an emergency next time as I suspect there was a flight control issue.

Synopsis

B737 flight crew reported a momentary loss of aircraft control during final approach at 7,000 ft. The aircraft rolled to the right approximately 30 degrees with the autopilot engaged. The crew disengaged the autopilot and regained control of the aircraft.

Time / Day

Date : 202311

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Flight Phase : Climb

Airspace.Class B : ORD

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Climb

Airspace.Class B : ORD

Component

Aircraft Component : Rudder Trim System

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 Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2055349
Analyst Callback : Attempted

Person : 2

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2055350

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Aircraft

Narrative: 1

After takeoff from ORD we encountered wake turbulence from a 737 that departed ahead of us. ATC vectored us on a northerly heading and directed us to contact an unusual Departure frequency. While I was tuning the new frequency, I felt a yawing motion, and challenged the FO (First Officer), who was flying. The FO indicated the yawing was not their doing, and we realized the rudder trim was fully deflected to the left. The FO maintained control of the aircraft and called for the Rudder Trim Runaway QRH. I searched the table of contents of the FLT CONTROLS section and at first did not locate the procedure. After reviewing the index, I found Aileron or Rudder Trim Runaway, page XX - XY. Following the QRH, I was able to re-center the rudder trim, and the runaway did not persist. In the decision tree, under "Trim runaway persists: No" it says operate the trim switch with caution for the remainder of the flight. I directed the FO to not use the trim again as a precaution. The runaway did not reoccur for the rest of the flight. We coordinated with Dispatch. Given the QRH did not mention diverting, we asked for confirmation to continue to ZZZ. Dispatch informed us that there was another aircraft available at ZZZ1 and that we should divert so we could continue with a different aircraft. This is because Maintenance would not be available in ZZZ. We informed ATC, and prepared for an approach at ZZZ1. Before beginning the approach, we received another message saying that the plan to go to ZZZ1 would not work and that we should continue to ZZZ. We had an abundance of fuel, so we changed our destination again to ZZZ, and made a normal approach to landing. I do not think there is something we could have done

to prevent the malfunction. To our knowledge we did not deviate from any clearances or procedures. Reflecting on the event, if the situation seemed that it was going to turn worse, I would have declared an emergency. Upon reflection, I realize there is an argument to be made that we could have declared as a precaution. At the time, we determined since the malfunction seemed momentary, that we did not require priority handling, nor was safety at stake, it was not required. Having discussed the event after the fact, we are concerned that crews may not be aware that the "Aileron or Rudder Trim" procedure exists. This makes us concerned that crews may inadvertently use the wrong procedure in the same situation. We also noticed that the "Aileron or Rudder Trim Runaway" QRH does not reference the "Uncommanded Yaw Motion" QRH although the opposite is true. "Uncommanded Yaw Motion" does reference "Aileron or Rudder Trim Runaway."

Narrative: 2

During initial climb after departing ORD 9C/FF on runway heading, was given a left turn to heading 360. During this turn, the Captain, pilot monitoring, and I observed the PFD (Primary Flight Display) inclinometer, "the brick," move toward the right. When the Captain prompted me, I responded that this yawing occurred without a corresponding rudder pedal or thrust lever input by me. Glancing at the rudder trim gauge, we noted a full left rudder trim indication. I called for QRH Rudder Trim Runaway procedure. The QRH steps were followed and the rudder trim knob was rotated by the Captain to recenter the rudder trim. Because the trim runaway condition did not persist, the QRH indicated that the trim switch should be used with caution for the remainder of the flight. We agreed that we should notify Dispatch and did so. Dispatch directed a change to our destination for operational reasons and ATC, Flight Attendant and passengers were subsequently notified. Delay vectors were requested to create time. Destination weather was obtained, and appropriate briefings, checklists and arrival procedures were completed. Dispatch subsequently notified us that this destination change would no longer be necessary and we should proceed to original destination. Once again, ATC, Flight Attendant and passengers were notified. Once again delay vectors were requested, destination weather was obtained, and appropriate briefings, checklists and arrival procedures were completed. A normal approach and landing were completed without event. At present, the QRH for Uncommanded Yaw presents a note: "See Aileron or Rudder Trim Runaway in Flt Controls page XX - XY if problem is actually a Runaway Trim." There is no similar cross-reference to Uncommanded Yaw in the QRH procedure for Aileron or Rudder Trim Runaway.

Synopsis

CRJ-200 flight crew reported experiencing a runaway rudder trim issue shortly after encountering wake turbulence. The flight continued to destination after successful troubleshooting of the rudder trim anomaly, but the flight crew stated that the QRH was missing references to perform other procedures that were related to the issue.

Time / Day

Date : 202311
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.AGL.Single Value : 1000

Environment

Flight Conditions : VMC

Aircraft : 1

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

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not 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 : 164
Experience.Flight Crew.Type : 370
ASRS Report Number.Accession Number : 2055188
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
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 : 203
Experience.Flight Crew.Type : 1556
ASRS Report Number.Accession Number : 2055147

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

While passing approximately 1000 ft. MSL in a right turn, the aircraft banked to around 35 - 40 degrees. We got the aural "bank angle" which only sounded once. The FO (First Officer) quickly brought the aircraft back to 30 degrees. The FO was following the flight director the entire time during departure. We took off behind another 737 which was well airborne by the time we took the runway. In my opinion, the excess bank angle was either due to a momentary fly-through of a wake or due to a gust at altitude.

Narrative: 2

Start, taxi, takeoff was all normal. The flight director was being followed into a right hand turn to a 030 heading, per ATC instructions prior to takeoff. While in the bank, the aircraft began to roll, uncommanded, more to the right. "Bank angle" was annunciated by the computer. The roll didn't exceed 35 - 40 degrees of bank, before being brought back to flight director commanded roll. There was no change in climb pitch or airspeed. The rest of the flight was uneventful. Takeoff was behind another 737, with sufficient separation. The other aircraft was airborne prior to our aircraft being cleared for takeoff.

Synopsis

B737 flight crew reported receiving a bank angle alert after takeoff that was quickly corrected. The flight crew believes this may have been caused by either wake turbulence from a preceding aircraft or a gust at altitude.

Time / Day

Date : 202310
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON
State Reference : US
Altitude.MSL.Single Value : 5000

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : Regional Jet 700 ER/LR (CRJ700)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb

Component

Aircraft Component : Horizontal Stabilizer Trim
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.Type : 2956
ASRS Report Number.Accession Number : 2042301
Human Factors : Situational Awareness
Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Type : 560

ASRS Report Number.Accession Number : 2043276
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Human Factors

Narrative: 1

I was hand flying our departure out of ZZZ at around 5,000 ft. when I noticed I needed more back pressure on the yoke to continue the climb angle. I verbalized to the First Officer that something felt wrong and then noticed the stab trim continuing to go nose down. I followed the memory item for stab trim runaway and pressed the stab trim disconnect switch on the yoke. The stab trim and mach trim caution messages came into view. In the heat of the moment while I was hand-flying an out of trim airplane we started the stab trim caution QRH. We followed the checklist and re-engaged the stab trim and it worked properly the rest of the flight. After landing I contacted Dispatch and Maintenance Control and made an entry in the logbook. It wasn't until later that I realized we should have done the stab trim runaway QRH instead of the stab trim caution QRH. CA (Captain) was task saturated with flying the out of trim airplane and the wrong checklist was completed.

Narrative: 2

The Captain was PF (Pilot Flying) and was hand flying our departure out of ZZZ at approximately 5000 ft. when he noticed the need for additional back pressure increasing to continue our climb angle. He verbalized that fact to me as PM (Pilot Monitoring) that something was wrong and we noticed the stab trim continuing to go nose down. The Captain disconnected the stab trim per the memory item for the runaway condition by pressing the stab trim disconnect on the yoke. We now had a STAB TRIM and MACH TRIM caution messages and we ran the QRH checklist for the STAB TRIM caution which re engages the trim and we re-trimmed the aircraft's and the trim worked properly for the remainder of the flight. After landing the Captain contacted Maintenance Control and Dispatch and made an entry to the logbook. After considering the events we decided we should have run the STAB TRIM Runaway QRH checklist instead of the STAB TRIM Caution QRH. STAB TRIM Runaway cause was unknown, however since the phase of flight was climb out from the terminal area it was a high workload time and in the moment the caution message was the indication both the Captain and I focused on to begin trouble shooting to correct the flight control condition and manage the circumstance. Once the condition was corrected with the QRH checklist and the flight completed with no return of the condition or other problems, we had time to debrief and consider we may have needed to run the other QRH checklist for STAB TRIM runaway.

Synopsis

CRJ-700 flight crew reported selecting the wrong checklist when they experienced a stabilizer trim runaway on climb out. The problem was corrected and the flight continued to destination.

Time / Day

Date : 202309

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Flight Phase : Climb

Airspace.Class A : ZZZ

Airspace.Class B : ZZZ

Airspace.Class E : ZZZ

Component

Aircraft Component : Elevator ControlSystem

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

ASRS Report Number.Accession Number : 2032428

Human Factors : Workload

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action

Result.Flight Crew : Returned To Departure Airport

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Aircraft

Narrative: 1

I was the pilot flying and departed ZZZ Runway XXL. As I began climbing out, I noticed the aircraft required forward pressure on the side stick. Once I leveled off, and was level on the flight directors, the aircraft still required forward pressure to maintain level flight. The aircraft would constantly pitch up. We were given a higher altitude and I climbed to it. All the while having to push slightly forward on the side stick in the climb. I engaged the autopilot and it maintained the climb and then cruise. Once our workload was reduced I contacted dispatch and maintenance on the satellite phone. I told them that when the autopilot was off, the aircraft required forward pressure on the side stick. Both Flight Directors were indicating the same. Also, when the FO flew, he noticed and felt the same problem. Maintenance had me disconnect the autopilot while in level flight and I noticed the airplane again pitch up. We all agreed the safest course of action was a return to ZZZ. Maintenance also noted that as we burned fuel and the CG changed, the aircraft could be harder to fly manually. We notified ATC that we would be returning to ZZZ. We also [requested priority handling] as we had some sort of issue with pitch trim in manual flight. I used the [priority handling] call button and gave the flight attendants a heads up. I told them to expect a normal approach and landing. I let them know they would also see emergency vehicles on our landing roll out. We had a long final for XXL at ZZZ and configured early. As I turned the autopilot off, the aircraft still wanted to pitch up. We landed uneventfully back at ZZZ and taxied to our gate. I entered the issue in the logbook and also spoke with the two mechanics that met our aircraft at the gate.

Synopsis

A320 Captain reported experiencing constant uncommanded pitch up movement while on manual flight during climbout requiring forward pressure. The flight crew contacted Dispatch and Maintenance and decided to return to the departure airport.

Time / Day

Date : 202309

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 33000

Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Other

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Phase : Cruise

Airspace.Class A : ZZZ

Component

Aircraft Component : Air Data Computer

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 Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2031640

Person : 2

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2031641
Human Factors : Distraction

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

Captain was Pilot Flying with autopilot on at cruising altitude of FL330. The aircraft suddenly went into a dive and heard loud overspeed warning indicator aural. Captain said his airspeed decreased and was indicating around 70 kts. My airspeed was about 10 kts into the zipper, an overspeed. Captain said he had a bad ADC and transferred me the controls, he then selected ADC 2 on switching panel to agree with my speed. At this point, the aircraft lost 400 ft. When I took control of the aircraft, it was in an overspeed state and nose down pitch. I asked the Captain to tell ATC that we need lower and a block altitude. He notified ATC and also let them know of our malfunction. ATC gave us a block altitude between FL300 & FL280. As I continued to descend, the speed wasn't bleeding off as quickly as I liked and I slowed the descent rate down to reduce the airspeed. At this point, I realized our auto throttles were also INOP. So I reduced the power and called for the unreliable airspeed checklist. The Captain read me the proper pitch and power setting for the descent configuration. I flew those pitch and power settings. I arrested the descent at FL290, then turned the auto pilot back on and the airplane held altitude, and I adjusted thrust to maintain proper airspeed. Captain then ran ECAMS and QRH and we concluded that ADC 1 had failed and with it the auto throttle system, the FADEC system, fuel CG transfer system, and yaw damper had also failed with it. We then requested a climb up to FL330 and completed the flight with out further incidents. The cause of this event was due to an aircraft malfunction. This aircraft was written up for the exact same malfunction on the prior flight. If Maintenance may have been able to diagnose and fix the malfunction correctly then it may not have happened. We knew about the write up and even had one of the previous pilots jumpseat on our flight and he explained it to us. The only I think we as pilots could have done differently is that we should have had the number 2 autopilot engaged instead of the number 1 autopilot; that way, when the ADC 1 failed it, wouldn't have affected the aircraft state.

Narrative: 2

Flying at FL330 Captain PF (Pilot Flying) on autopilot 1. ADC 1 computer failed. Yaw damper 1 and auto throttles disconnected and Captain's airspeed indicator was at about

70 kts indicated. Autopilot started to nose over to stay on speed. I handed jet to FO (First Officer) as his air data seemed accurate. Through the noise of all the warnings going off, we noticed airplane descending and speeding up into the overspeed zipper. FO adjusted power and I told Center we are descending and need a lower altitude. He cleared us immediately and was kind enough to give us a block altitude of FL280 to FL300, we chose FL290. FO did an outstanding job getting everything under control on speed, on altitude, and on his autopilot. Used unreliable airspeed checklist. Next, we went through QRH. Yaw damp 1 was off, N1 faulted and had to set to alternate per ECAM, Captain ADC to number 2, and auto throttles off. Yaw damp and auto throttles wouldn't reengage. Writing this due to descent prior to clearance, but they gave quickly plus ATC gave us priority handling for a few minutes. No emergency declaration and back to normal altitude once all under control. ATC was very helpful and accommodating. Thank you. Nice team work.

Synopsis

Air carrier flight crew reported ADC failure inflight causing temporary aircraft loss of control.

Time / Day

Date : 202308

Place

Locale Reference.ATC Facility : ZZZ.Tower
State Reference : US
Altitude.AGL.Single Value : 400

Environment

Flight Conditions : IMC
Weather Elements / Visibility.Visibility : 5
Light : Daylight
Ceiling.Single Value : 2000

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737-700
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Airspace.Class C : ZZZ

Component

Aircraft Component : Horizontal Stabilizer Trim
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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 109
Experience.Flight Crew.Type : 4000
ASRS Report Number.Accession Number : 2030181
Human Factors : Situational Awareness
Human Factors : Workload
Human Factors : Distraction

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 90
Experience.Flight Crew.Type : 90
ASRS Report Number.Accession Number : 2030187
Human Factors : Workload
Human Factors : Distraction
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Airspace Violation : All Types
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Diverted
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Manuals
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Weather
Primary Problem : Human Factors

Narrative: 1

Departed Runway XXC. On climb out we get a stabilizer trim malfunction as we enter IMC weather with thunderstorm cells nearby. We do the memory items, run the QRC, QRH, and keep the autopilot and autothrottles off as directed per the procedure while climbing to avoid and deviating around thunderstorms in IMC conditions. The malfunction does not continue, and aircraft flies normal. The climb is continued to avoid weather and to gain altitude so that if a malfunction occurs again, there's altitude to recover. After that we level off, ACARS message Dispatch, and get a phone patch to Maintenance Control. I do not know if another trim malfunction will occur or not during flight. We assessed the situation, balanced the task loading, and communicated with all available resources. Also, maintained aircraft control, analyzed the situation, took the appropriate action, and landed when the situation permitted. A joint decision between Dispatch and the Crew was made to divert to ZZZ1 and not fly back through the weather we just came through to return to ZZZ. Dispatch sends us the divert information, and we use the divert planning checklist.

We calculated performance data for a Flaps 15 landing and also calculate brake cooling temperatures prior to landing. Landed in ZZZ1 without incident, and it was during the debrief with a Supervisor I realized my error of unintentionally flying at FL 340 without using the autopilot in RVSM airspace. I was in high task saturation the whole departure phase. My biggest concern was staying safe by accomplishing the applicable QRH procedure and avoiding storm cells. We could have asked each other where we were in regards to risk management. Also, would it be possible to add "check RVSM requirements" on the divert section of the checklist? It's a huge reminder during task saturation.

Narrative: 2

We departed Runway XXC out of ZZZ with weather off the departure end. There were thunderstorms closing in on the field from the north and the Captain was flying. Around 400 ft AGL the aircraft pitched up to about 20 degrees followed by a nose down pitch and then another nose up pitch to about 20 degrees. The trim would run in the direction that the Captain's side electric trim was selected for. Around 600 ft AGL the Captain said something like "I think we have runaway trim". The Captain made a right turn to our assigned heading which got the nose down. The Captain immediately performed the memory items but did not move the Stab Trim Cutout switches because the aircraft was under control now and the trim had stopped moving. I, the F/O (First Officer), tried my electric trim and both directions worked normally. We continued to climb and deviate around weather. We ran the QRC and QRH and began to fly towards our destination and continued climbing out of the weather. Once we leveled off, we notified Dispatch through ACARS of the situation, we told ATC, and we were able to get a hold of Maintenance. Both Pilots and the Dispatcher decided to divert to ZZZ1. We took turns hand flying the aircraft the rest of the way. We briefed our arrival and approach and what we would do if the trim began to run again and what we would do in case of a go-around. We had an uneventful Flaps 15 landing and taxied to the gate. Maintenance met us at the gate, and we deplaned normally. Not until after landing did we realize that we had flown into RVSM airspace with the autopilot off. Although we did not deviate from our assigned altitude by more than 1000 ft, we were so task saturated that we had completely forgotten about RVSM requirements. A note on the QRC or QRH or even diversion checklist about airspace requirements would've caught the error.

Synopsis

Air carrier flight crew reported flying in RVSM airspace with the autopilot off due to stabilizer trim issue.

Time / Day

Date : 202308
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 28000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 170/175 ER/LR
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise

Component

Aircraft Component : Elevator Control Column
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 Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2025809
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Inflight Event / Encounter : Other / Unknown
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

I was the Captain on Aircraft X. Aircraft X operated from ZZZ1 to ZZZ2. In cruise flight no turbulence, north of ZZZ the control column snapped forward and back to neutral very quickly. I assume the column went forward around 30 percent of its half range with neutral being zero. It was very sudden but caught both pilot's attention. I currently have around 6000 hours in the EMB-170 series aircraft and never witnessed the control column act in this manner. The autopilot did not disconnect, there was no EICAS messages. It did appear to have slightly nosed down but it was so sudden it was barely noticeable. I did note before this anomaly occurred the trim was 3.0 and after was at 3.4. Right after this anomaly occurred I took the controls and disconnected the autopilot. I hand flew the aircraft for a few minutes and the aircraft handled normally. Note: Our cruise altitude was FL280 out of RVSM. I then discussed with my FO (First Officer) if this aircraft is safe to continue flight. We both agreed that it couldn't have been the autopilot with such a sudden movement. Worse case it could be an elevator issue electronically/ACE (Actuator Control Electronics), or hydraulic/PCU (Power Control Unit). We decided to be safe and land. Closest airport was ZZZ3 but that would have required a rapid descent. ZZZ4 was straight ahead and 100 NM. I was the flying pilot at this moment, First Officer got the FMS loaded and performance landing numbers. All checklist were ran, the approach was briefed. I briefed the passengers and cabin crew of the divert. The reason was a control anomaly and that the aircraft was operating normally, this is a precautionary diversion. I realized the aircraft was going to have an overweight landing. I then [requested priority handling] as per SOP. I had the choice to burn fuel below max landing weight or land overweight. I chose the latter, having a flight control issue. I landed the aircraft very smoothly. Pulled the aircraft off the runway and had the Airport Fire and Rescue check the aircraft. Note: An Autoflight Control System Fault Fail message did appear on the EICAS upon landing. I then taxied to the gate normally. Suggestions - I had a choice to continue or to land. After First Officer and I discussed worse case being a ACE or PCU problem, Autopilot malfunction or something as small as a channel failure and the backup transition was not the smoothest. I chose to land not knowing what the problem was leaning toward the safest option.

Synopsis

EMB-175 Captain reported a flight control anomaly where the control column moved momentarily during cruise flight without an EICAS warning message in flight. The crew diverted to an alternate airport and landed safely overweight.

Time / Day

Date : 202308

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Component

Aircraft Component : Turbine Engine

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 : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2025627

Human Factors : Workload

Human Factors : Time Pressure

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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 2025630

Human Factors : Troubleshooting

Human Factors : Time Pressure
Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Other / Unknown
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Rejected Takeoff
Result.Flight Crew : Returned To Gate

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Pushed back from Gate XX. Started number one engine with no problems. Got permission from ramp to taxi to Spot X. Once we got the taxi clearance from Ground, we taxied onto [Taxiway] 1 and started number 2 engine with no abnormalities. We got clearance to take off. CA (Captain) advanced the thrust to 40% N1, all normal. CA advance thrust to TOGA and called for "check thrust". FO (First Officer) who was Pilot Monitoring didn't have time to say anything because as soon as the engines reached TOGA a violent vibration shook the aircraft, and then shoved us to the right. 1-2 seconds later engine 2 fail came on the EICAS and N1 showed engine failure while at 5-10 kts. We rejected the takeoff, told Tower, and slowly taxied off the runway. We found a place to sit to run checklist, contact Maintenance, Company, flight attendants, and passengers. Once we got the situation under control with checklists done we returned to the Gate. Cause: engine age maybe? Suggestions: always follow procedures, it saves lives. CA and FO were on top of what happened and responded quickly and correctly.

Narrative: 2

Standard and to procedure push off and start up of both engines, no abnormal indications during start up or through taxi. Line up and wait on Runway XXL, once cleared for takeoff, Captain (Pilot Flying) advanced thrust levers to 40%, no abnormal indications, then advanced thrust levers to TOGA and called "check thrust". We had just started the takeoff roll, I was monitoring the engine indications, about to call "thrust checked" when there was a sudden violent vibration, feeling of drag and unsteadiness on the right side. Received EICAS message of "ENG 2 FAIL" and "FAIL" indication on ENG 2. Per procedure, Captain brought the thrust levers back to idle & rejected takeoff. I informed Tower that we had an engine fail and were rejecting the takeoff, instructed by Tower to slow taxi down to the [Taxiway] 1 intersection to exit Runway XXL & asked if we needed any assistance. After confirming with the Captain, informed Tower we did not need any assistance at this time & was instructed to contact Ground after exiting the runway. After speaking with Tower, I checked with the Flight Attendants, everyone was okay in the back and confirmed no smoke or fire was emitting from ENG 2, let them know we had to reject the takeoff and would need to run some checklists & then return to gate, number 1 Flight attendant made a PA. While we continued our slow taxi down to [Taxiway] 1, I contacted Ops to get a return gate and was given [Gate] XX (the gate we had pushed from). Once clear of the

runway we contacted Ground letting them know we needed to return to gate XX via Spot XXX, but needed to run some checklists first. Was instructed to taxi via [Taxiways] 2 3 and hold on 3 to run our checklists, but prior to turning onto 3, was instructed to just hold on 2 to run our checklists, and asked if we needed Fire & Emergency to meet us at the gate. Confirmed we'd hold short of 3 on 2 and get back to them about Fire & Emergency after running the checklist. While we were taxiing several aircraft confirmed we did not have any exterior smoke or fire on the #2 engine. Once stopped, Captain made a PA informing passengers of situation and that we would be running some checklists & then returning to our gate. Accomplished QRH ENG 2 FAIL checklist & contacted Maintenance. Confirmed no other actions were required at that time. Informed Ground we would not need Fire & Emergency and ready to return to gate, instructed to taxi via 3. Ramp cleared us through Spot X and to the gate. Once back at the gate we communicated with Dispatch. Maintenance met us at the gate, Captain made appropriate MEL entry. After communicating with Maintenance and Dispatch we deplaned.

Synopsis

EMB-175 flight crew reported a violent vibration and ENG 2 FAIL message during takeoff roll. The crew rejected the takeoff and returned to the gate where the aircraft was turned over to maintenance.

Time / Day

Date : 202308
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.Tower
State Reference : US

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737-800
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Mission : Passenger
Flight Phase : Takeoff / Launch
Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Horizontal Stabilizer Trim
Aircraft Reference : X
Problem : Malfunctioning

Component : 2

Aircraft Component : Autothrottle/Speed Control
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
ASRS Report Number.Accession Number : 2023665
Human Factors : Workload
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : FAR
Detector.Person : Flight Crew
When Detected : In-flight

Result.Flight Crew : Diverted
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Immediately after departure from ZZZ, the Captain (CA) Pilot Flying (PF) noticed no response while selecting nose down electric stabilizer inputs. PF asked Pilot Monitoring (PM) to attempt nose down electric trim as well to no avail. Both CA and First Officer (FO) controls had no nose down trim capability but electric trim and auto trim did work for nose up inputs. The CA (PF) directed the PM to request a vector from ATC and to maintain 8000 ft. and 250KIAS to establish a controllable flaps up/gear up flight regime. During the climb and level off, it was also determined that the auto-throttles did not respond appropriately to FMC or Mode Control Panel (MCP) speed window inputs. The last correct input from the auto-throttles was upon depressing the TOGA buttons for takeoff where it was apparent that the throttles were essentially in a "hold" mode. As a result, airspeed reached between 250-260KIAS during the climb prior to recognizing the auto-throttles were also inoperative. Because of workload concerns, initially the CA opted to [request priority handling] while determining the available control ability and choosing the appropriate checklist. Once leveled off and manually trimmed to a straight and level attitude, the flight controls and radios were transferred to the FO as planned during the Pre-Departure briefing. The CA then took the role of PM and handled the stabilizer trim inoperative, overweight landing, and non-routine landing checklists while communicating with Dispatch, Flight Attendants, and Passengers. A flaps 15, overweight (154k GW) landing was executed. We rolled to the end of the runway uneventfully where ZZZ fire and rescue met the aircraft for a hot brakes inspection. With company maintenance concurrence, we decided that there was no concern taxiing under our own power to parking. Brake temperatures were monitored by safety crew and where they continued to follow us to the gate. Recent 737 MAX training with emphasis on trim runaway situations played a substantial role in the safe and expeditious recognition of the aircraft malfunction. As a result, both CA and FO were very well prepared to execute the appropriate checklists without further incident.

Synopsis

B737 pilot reported stabilizer trim and autothrottle malfunctions. Flight crew returned to departure airport and landed uneventfully.

Time / Day

Date : 202307

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 32000

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737 Undifferentiated or Other Model
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 : Flap Control (Trailing & Leading Edge)
Aircraft Reference : X
Problem : Malfunctioning

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
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 : 191.45
Experience.Flight Crew.Type : 517.52
ASRS Report Number.Accession Number : 2021291

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Software and Automation

Primary Problem : Aircraft

Narrative: 1

While cruising at FL320 (about 40 minutes after departure) the trim wheel started moving backwards and the speed moved from cruise speed to 230 knots by itself. We scanned the aircraft while making sure we were not getting into a stall situation. The LE (Leading Edge) FLAPS TRANSIT light was on and the number 4 amber light in the upper flight controls panel was also on. We went thru the QRH procedure, contacted Dispatch and Maintenance. the QRH made us go down to flight level 200 pull flaps to 1 then back to UP to see if it would reset. the light remained on and talking to Dispatch we made a decision to continue to ZZZ. we would be landing with about an hour of fuel and no weather or other conditions were affecting ZZZ. We had positive control of the aircraft at all times. Another Company pilot had checked the wing as well as the Captain and it didn't seem like a significant difference between that LE FLAP and the rest of them. Once with ZZZ approach we told them that we required Runway XX and our final approach speed would be around 175 knots. ATC Then decided to treat it as [priority handling] at that point so we gave souls on board and fuel. CA (Captain) landed the plane without further incident.

Synopsis

B737 First Officer reported uncommanded leading edge flap deployment in cruise flight. Flight crew made an uneventful landing at destination.

Time / Day

Date : 202307

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : ZZZ

Component

Aircraft Component : Autoflight System

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 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 : 171

Experience.Flight Crew.Type : 906

ASRS Report Number.Accession Number : 2014154

Human Factors : Fatigue

Person : 2

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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 170
Experience.Flight Crew.Type : 3800
ASRS Report Number.Accession Number : 2014176
Human Factors : Fatigue

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Today was an incredibly long day. I had just finished a two-day the previous day out of ZZZ, where we were delayed getting back into ZZZ by almost 5 hours due to weather. So I was hoping for a simple day trip to ZZZZ today. That simply was not the case. I arrived at the airport for our report time at XA: 50. I was able to meet with the CA (Captain) and discuss the upcoming day and flight. We met the previous crew of our aircraft on the jet bridge who went into great detail about the current MEL items on that specific aircraft. After discussing the situation with the crew and Dispatch, the CA and I both felt that it was the best course to not take this aircraft to ZZZZ due to the MEL items on the aircraft. We then waited another 3 or so hours for the next aircraft to become available. The CA and I boarded the new aircraft to find that there was an inbound write-up on the aircraft in regards to the brake pressure accumulator not being able to hold pressure and had lost about 800 psi in about 30 minutes. Maintenance personnel then boarded that flight and performed a test on the aircraft to see what the issue was and if it could be deferred or if the issue was more complex. The test took roughly 45 minutes to see if the brake pressure would hold or not. Maintenance informed the CA and I that the aircraft did not pass the test and would need to be taken out of service. The time now is roughly XG: 30. The CA and I have been at the airport roughly 6 hours and are now looking for our 3rd aircraft to take to ZZZZ. However duty period was now an issue. We later received a phone call from Scheduling who informed us that we will now be going to ZZZ1 because we would not be legal to operate the previous flight to ZZZZ and back to ZZZZ. The CA and I again boarded our new flight to ZZZ1. We got everything ready to only have the Ramp close for about 30 minutes due to the storms in the area. Once the storms cleared we were able to push back from gate. However, due to the construction behind the gate, the Tow Driver needed to tow us in a specific area to clear the construction. We informed the driver of where to go but he was very confused and it was clear that he may not have gotten the proper training for towing in this area with the construction. Due to this confusion we ended up breaking the shear pin on the push. So we had to get Maintenance to come out and verify everything was ok before continuing on with the pushback. Once given the ok to go from Maintenance, we were able to push back to the proper area and

commence the flight. The time now is roughly XJ:15 and we were on our way for departure after 8.5 hours of delays and changes. There were still so many storms in the direction of which we were going but ZZZ2 was clear. We departed with no issues. We performed the after-takeoff check and continued our climb to 10,000 ft. It was around 8,000 ft. that the CA decided to put the autopilot on by pressing Command A. The autopilot engaged. I was the pilot monitoring and received a clearance to continue climb to 18,000 ft. At that moment within 30 - 60 seconds of the autopilot being on, there was a sudden violent jolt and pitch down of the aircraft. The autopilot remained engaged. The CA and I looked at each other trying to understand what just happened. The aircraft then did the same jolt and pitch down. The CA then clicked off the autopilot. We told ATC that we want to remain at 10,000 ft. and that we had a flight control issue. The CA and I then tried Command B autopilot. It appeared to be working normally. We then tried Command A autopilot and again within 30 - 60 seconds the jolt and nose down pitch occurred. We then saw the stab out of trim light appear. We ran through the checklist and decided that it was best to go back to ZZZ2 at that time. We advised ATC and got vectors back to ZZZ2. We notified Dispatch, the FAs (Flight Attendant), and customers. We did a great job using CRM to really divide and conquer at this time. We would meet back and regroup with each other. We ran the overweight checklist and proceeded to land at ZZZ2 with no issues. ARFF (Airport Rescue and Firefighting) verified the aircraft was ok on the taxiway before proceeding to the gate.

Narrative: 2

Our showtime for the original pairing was XA:50. We were assigned an aircraft that was removed from ETOPS operations due to an APU issue. I discussed this with Dispatch and requested either an airplane with an APU that was not degraded and certified to operate over water or in ETOPS or a route of flight that was mainly over land and closer to acceptable divert airports. Even though this flight was not ETOPS I do not operate our aircraft over water more than a distance that would provide for a safe and quick diversion in the event of system failures. The Dispatcher agreed to re-route our flight. Soon after discussing this aircraft and flight plan, we were assigned another aircraft. We were not told why this decision was made. The next aircraft was wrought with even more serious issues. In addition to having a cowl anti-ice valve wired in the open position, which required reference to flight manual procedures and information, it led to another MEL item that further complicated the flight crew duties including more referencing of the flight manual and MEL procedures. Bleed air and minimum power settings, as well as split throttle positions, on an approach are serious systems that require lots of attention. Had this flight been further complicated by other system failures not anticipated, we would have been up against an enormous amount of work just to get the aircraft on the ground safely. In addition to that, there were numerous areas of thunderstorm activity on and around our route of flight. We refused the aircraft. The next aircraft they gave us came in with a write-up of brake accumulator pressure bleeding down rapidly while parked. AMTs performed a required test on the brake system and it failed. This evolution took about an hour and further delayed our operation and the aircraft was eventually taken out of service. Following this evolution, the crew desk advised us that we would not be able to complete our one-day trip without going over our Part 117 limits of a 14-hour duty day. Thus, as is allowed by the [agreement] for irregular operations, we were reassigned to a two-day trip that was about to depart. That crew was reassigned to take our two-leg turn to ZZZZ. We spoke briefly with the swap crew on the jet bridge and began setting up the cockpit for our one-leg, first-day flight to ZZZ. The second day would have us flying a leg ZZZ - ZZZ1 followed by a deadhead back to ZZZ2, flying into our day off. This was the first time we had released the parking brake on what was a very long day. During the pushback, we received instructions to position the aircraft away from construction on the ramp with the jet facing north toward the concourse. The push crew was not familiar with

these instructions and had not been trained on the pushback necessary for the construction being done south of the concourse on Taxiway 1. The Tug Driver removed the tow bar pin after we set the brake, but the Ramp Controller informed us that we were not positioned correctly. We then had the Tug Driver hook up the tow bar again to reposition us correctly. This led to the shear pin being broken when the tow bar was reattached and we released the parking brake for repositioning. Following SOP, we were informed that the nose gear had to be inspected. The ground crew then reattached another tow bar and repositioned the aircraft at the gate and station maintenance personnel performed a successful inspection. We pushed back successfully and taxied for takeoff on Runway XX at ZZZ2. After an uneventful departure, we were climbing through about 8,000 ft. to level off at our assigned altitude of 10,000 ft. I engaged autopilot A/CMD and we experienced an abrupt jolt of the control column followed by two more. I immediately disengaged the autopilot and we began to look for an indication of any system malfunction. There were no abnormal signs or indications, including hydraulic pressure or fluid. We discussed the possibility that we had flown through another aircraft's wake and I engaged the autopilot again, followed by the same abrupt jolts. I disengaged the autopilot again and hand-flew the jet, leveling off at 10,000 ft. This time I noticed a flash of the STAB OUT OF TRIM light on the forward instrument panel. We also noticed lots of autotrimming of the trim wheel. The trimming was not indicative of a runaway trim condition. Autopilot B was engaged and it operated normally. The First Officer immediately referenced the flight manual for the associated light. We reviewed the checklist and performed the steps called for. We discussed our options and decided to return to ZZZ2 as the safest and most prudent course of action. We also decided to advise ATC as an extra precaution and to obtain priority handling from ATC. Dispatch was notified, crew and passengers were briefed, and we made a slow approach back toward ZZZ2 about 30 minutes after takeoff. Landing performance data was requested and received from Dispatch. We reviewed the overweight landing checklist, briefed, and flew an uneventful approach and landing to Runway XY at ZZZ2. We were followed by numerous emergency vehicles on rollout. We spoke with the Fire Commander via VHF radio and he informed us that there were no external signs of damage or overheating of the brakes. We taxied back to the gate, shut down normally, performed all checklists, and debriefed thoroughly. We sent write-ups for the system malfunction as well as the overweight landing. Together we also debriefed the Chief Pilot. He called us again a short time later and we answered questions for a human factors review. He called one last time later and informed us that we were released from duty for the remainder of the day and night.

Synopsis

B737 flight crew reported experiencing an abrupt pitch down event when engaging the autopilot system, resulting in an immediate return to the departure airport.

Time / Day

Date : 202306

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 32500

Aircraft

Reference : X

Aircraft Operator : Fractional

Make Model Name : Citation Excel (C560XL)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class A : ZZZ

Component

Aircraft Component : Elevator Trim System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

ASRS Report Number.Accession Number : 2013480

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Issued New Clearance

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Had a pitch runaway descending through FL325. Was supposed to level at 32000 ft. After performing the QRC items for runaway pitch trim, we [requested priority] as we were not able to maintain FL320 at that time. ATC gave us a descent to 13000 ft. and direct ZZZ. We accomplished the QRC and QRH items for pitch trim runaway. Notified pax and landed normally. We were met by Crash Fire Rescue and found no need for them upon landing.

Synopsis

CE-560XLS Captain reported a pitch runaway during descent from cruise altitude. Flight crew diverted and landed normally.

Time / Day

Date : 202306
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZZ.Airport
State Reference : FO
Altitude.AGL.Single Value : 500

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZZ
Aircraft Operator : Air Carrier
Make Model Name : Widebody, Low Wing, 3 Turbojet Eng
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Cargo / Freight / Delivery
Flight Phase : Initial Climb
Airspace.Class C : ZZZZ

Component

Aircraft Component : Turbine Engine Thrust Reverser
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 Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2010881

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2011189

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Inflight Shutdown

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing out of ZZZZ, First Officer (FO) leg, passing 500 ft. AGL, aircraft experienced sudden and significant air frame buffeting/vibration, and inability to climb or accelerate. Initial priority was to ensure aircraft did not descend or lose airspeed. FO stated that they required full right rudder. I took control of the aircraft, applying 5 degrees of manual rudder trim and FO selected the confirm engine out prompt. Level 1, REV 1 PRESS FAULT illuminated, in addition to red indication on #1 N1 gauge which was indicating 25%. We [requested priority handling], stating an issue with #1 engine. We were able to begin acceleration, climb, and cleanup. At 3000 ft. AGL, clean, 230 KIAS, significant vibration continued. Performed QRH procedure for reverser deployed or U/L or rev displayed in flight, which required shut down of #1 engine. Next, performed engine shutdown in flight checklist. Next, we reviewed the engine fire severe damage checklist, and determined that we could slow to 220 KIAS as our minimum clean airspeed, reducing some airframe vibration. Returned to ZZZZ for an uneventful landing. Maintenance determined that the #1 engine inboard reverser had fully deployed. Suspect #1 engine was operating at 25% reverse thrust until shut down.

Narrative: 2

We experienced an engine #1 failure on initial climb out departing out of ZZZZ. After passing 500 ft. and selecting PROF, the aircraft immediately banked to the left and was accompanied by a continuous moderate aircraft buffeting/vibration. A quick glance on the engine N1 gauges presented a red U/L indication on engine #1 and was operating in the 25-30% range. The other indication we received was a REV 1 PRESS FAULT level 1 message. I immediately applied the right aileron to counter the left wing drop and applied an appropriate amount of right rudder and rudder trim accordingly to stabilize the aircraft. Adjustments were made to control speed and climbout rate. After we fully realized what was happening, the Captain took control of the aircraft. I advised them, prior to exchanging flight controls, that I had full right rudder input. Upon exchanging flight controls, we [requested priority handling] with ZZZZ Tower. We quickly referenced the QRH for the REV 1 PRESS FAULT level 1 message. We then referred to the reverser deployed or U/L or rev displayed inflight checklist. This led us to bring the affected engine throttle to idle and an eventual shutdown of the #1 engine. We also referenced the engine shutdown inflight checklist. To ascertain that everything was covered concerning any engine damage, we also referred to the engine fire or severe damage checklist. However, we did not discharge any fire bottles as it was not warranted. We executed a successful flaps 35 landing on Runway XX. ZZZZ airport fire department performed a visual inspection of our #1 engine on Taxiway 1. They were able to confirm no visible damages or leaks to the engine. However, they did inform us that the thrust reverser was in the

open position. ZZZZ Line Maintenance later confirmed that the #1 inboard thrust reverser was fully deployed in the open position.

Synopsis

Flight crew reported #1 thrust reverser deployed at 500 ft. on departure. Crew shut engine down per reverser deployed" checklist and returned to field.

Time / Day

Date : 202306

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 37000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 5

Light : Daylight

Ceiling.Single Value : 42000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Medium Large Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

Person

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 8620

ASRS Report Number.Accession Number : 2009096

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Distraction

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury

Anomaly.Deviation - Speed : All Types

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Physical Injury / Incapacitation
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

We were flying the second leg of a ZZZ turn to ZZZ1. On the first flight, we had flown from ZZZ to ZZZ1 and went through the same storm system while encountering light to occasional moderate turbulence. We were filed on a similar path on the second flight. Approximately 30 minutes into the flight, in preparation of going through forecast light to moderate turbulence, we had the Flight Attendants sit down and discontinue service. The passenger seat belt sign also remained illuminated the entire time. There were other aircraft taking the same route, one that we mentioned in the cockpit that was at 35,000 ft. We were flying at 37,000 ft. in northern ZZZ2 when we deviated East of our track to avoid a thunderstorm cell to the West, staying approximately 20-25 miles to the East of the cell. Abeam the thunderstorm, we went back approximately due North to put a second cell East of our track by approximately 15-20 miles. While on the back side of the system, at approximately (XA00), we encountered continuous moderate and pockets of severe turbulence. We did not lose control of the aircraft at any time. Furthermore, the ride was not severely "choppy" or "jerky" but did induce severe performance changes so the nature of the turbulence was probably more evident in the flight station than the back of the aircraft. The aircraft's autopilot had a very difficult time keeping up airspeed, losing and gaining about 20 kts. At one point, while max continuous power was applied, the aircraft came to about the yellow airspeed bracket. The First Officer put the start switches in FLIGHT about halfway through the turbulence episode. We also encountered several uncommanded aircraft rolls of about 30 to 45 degrees and during the beginning of the episode, we had a ROLL AUTHORITY alert on the pilot flight display which corrected itself quickly. After about 5-7 minutes of the moderate-severe turbulence, the ride began to get better. At this time, we decided to descend to 35,000 ft. and the ride improved as we went North and descended. During the time of continuous moderate pockets of severe turbulence, we were near the tops of the clouds but not on top of them. We did not fly through any red portion radar returns on the weather radar. When we felt the worst of the turbulence had abated, we checked with the Flight Attendants. They had been seated the whole time and at the time said there were no injuries. After we landed, the D Flight Attendant said they had hurt their back. Next, we talked to air traffic control to report the severe turbulence. We also sent an ACARS message to Dispatch as well as to Maintenance. The rest of the flight went without incident, although after about 15 minutes of a smooth ride light turbulence continued off and on until we landed in ZZZ. After landing, I talked to Dispatch and Maintenance on a conference call. The Dispatcher and I also spoke to the Supervisor and the Chief Pilot briefly. It was during these calls that I found out the D Flight Attendant told us their back was hurt but I was unable to speak to them before they left. I wrote the turbulence encounter in the logbook and fully debriefed a Mechanic who took control of the aircraft after it was shut down.

Synopsis

Air carrier First Officer reported severe turbulence resulting in an injured flight attendant. The reporter stated they encountered 30 to 45 degrees of uncommanded roll.

Time / Day

Date : 202305

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Ceiling : CLR

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 700 ER/LR (CRJ700)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Route In Use : Vectors

Component : 1

Aircraft Component : Autoflight System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Aileron Trim System

Aircraft Reference : X

Problem : Malfunctioning

Component : 3

Aircraft Component : Rudder Trim System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 2001837
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

We took the runway with checklist completed with takeoff configuration OK. Advanced throttles to TOGA power. We got through V1 and lifted off. Once in the air at about 50 ft., we got a configuration trim message for both aileron and rudder trim with full deflection to the left. Captain tried to center it and would not move. While inflight, the trims for both rudder and aileron went full left deflection and then corrected itself. The Captain was the Pilot Flying. The airplane was hand flown for the entire flight and the Captain mentioned the airplane was flying fine. We let ATC know that we needed to return back to the airport. When asked if we needed assistance, we told them yes we needed assistance and the trucks were waiting for us on the ground. We flew the ILS to Runway X back into ZZZ and landed safely.

Synopsis

CRJ flight crew reported uncommanded rudder and aileron trim movement after take-off. The flight crew performed an air turn back and made a precautionary landing at departure airport.

Time / Day

Date : 202305

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : LAS.Airport

State Reference : NV

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Airspace.Class B : LAS

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : B757 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Climb

Airspace.Class B : LAS

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 : 150

Experience.Flight Crew.Type : 12572

ASRS Report Number.Accession Number : 2001065

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

Departure from Runway 26R LAS. It is common practice at LAS for ATC to ask crews to report departing aircraft in sight and upon acknowledgement clear following aircraft for takeoff. We were following a B757 and received takeoff clearance reference above criteria. Upon liftoff we flew through prior departing aircraft's wake and began numerous uncommanded rolling motions. Several corrective actions took large control movements and forward pressure (even verbally stating, "I'm pushing") to counter the wake induced roll. None of the prescribed parameters for an upset were ever breached, but I feel had not taking aggressive actions could have led to an undesired aircraft state. At the time of the event our aircraft was configured for a Flaps 1, Bleeds on, Reduced Thrust Take Off.

Synopsis

B737NG Captain reported encountering wake turbulence departing LAS in trail of a B757.

Time / Day

Date : 202305

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Component : 1

Aircraft Component : Main Gear Tire

Manufacturer : L/H I/B

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Main Gear Tire

Manufacturer : L/H O/B

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1999132

Human Factors : Situational Awareness

Human Factors : Human-Machine Interface

Human Factors : Communication Breakdown
Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Rejected Takeoff
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Returned To Gate
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Procedure
Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

While on the takeoff roll on Runway XXR at around 120-130 knots we get a strong yawing motion to the left and it felt similar to what we feel in the simulator during an engine failure. The captain called for the rejected takeoff and took control of the aircraft and we slowed down and were able to taxi off the runway and onto Taxiway 1 where we brought it to a stop and assessed the situation. After we determined that everything was fine and the aircraft could move back to the gate for the maintenance inspection we tried to taxi and were unable to move. An operations truck for the city of ZZZ was there and informed us that our left main tires had blown. After coordinating with ground and ZZZ operations we deplaned the passengers via air stairs and busses back to the terminal. It is my belief that we may have been hit by a dust devil on our takeoff roll and that is what caused the yaw to occur. The winds that day were mostly calm but, right before the yawing event and the rejected takeoff, I saw a piece of paper blowing very rapidly across the runway just in front of us. I noticed this at about the same time of the movement but I wasn't able to call out what I was seeing before we went through it. There isn't anything that I think would have been able to prevent this event from happening. If it was in fact a dust devil that caused the yawing motion it was something that was unpredictable and happened so quickly we wouldn't have been able to avoid it.

Synopsis

Pilot reported an uncommanded yaw during the takeoff roll. A rejected takeoff was performed and it was determined that both left main tires had deflated.

Time / Day

Date : 202304
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Relative Position.Angle.Radial : 180
Relative Position.Distance.Nautical Miles : 25
Altitude.MSL.Single Value : 41000

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility : Windshear
Weather Elements / Visibility.Visibility : 10
Light : Night
Ceiling.Single Value : 40000

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Air Taxi
Make Model Name : Learjet 60
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise
Route In Use : Direct
Airspace.Class A : ZZZ

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Flight Engineer / Second Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Engineer
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 29850
Experience.Flight Crew.Last 90 Days : 150
Experience.Flight Crew.Type : 4000
ASRS Report Number.Accession Number : 1988714
Human Factors : Communication Breakdown

Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

In cruise flight on top of overcast our aircraft experienced a shudder and sudden pitch down. The autopilot was still engaged, the rate of descent we estimated at about 10,000 feet per minute with pitch and roll oscillations. I disconnected the autopilot and attempted to stop the altitude loss. The aircraft stabilized after an altitude loss of 2,500 feet at FL385. All this time we were communicating a loss of control with Center, which cleared us block altitudes of FL370-410 as necessary. There was a few minutes of smoother air then a sudden updraft of 6,000 feet per minute with power at idle and wild airspeed fluctuations +/- 20 kts as I was fighting pitch and speed variations. We were able to return to FL410 after two course changes towards the South East of our route. Center had advised another aircraft at FL450 had reported extreme turbulence estimated 50 NM north of us and another aircraft at FL310 was also diverting because of turbulence. Our on board radar indicated we had a level 5 cell tops FL500 at 35 miles north of our route. Center advised our track was in between a few small cells and looked good. We concurred. In debrief after the flight we agreed that our filed route should have been above the reported weather in the small portion of our route that there was any showing and the route changes we made may have prevented us from transiting even worse conditions. Prompt communications with ATC helped get course and altitude changes certainly helped prevent any injuries and airframe damage. I don't know what else we could have done.

Synopsis

Learjet 60 Captain reported aircraft loss of pitch and roll control at 41,000 ft., resulting in a loss of altitude. The Captain disconnected the automation to recover the aircraft at 38,500 ft. and received course changes from ATC. Once in smoother air, without aircraft damage or injuries, the flight continued to destination.

Time / Day

Date : 202303
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.AGL.Single Value : 0

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : B737-800
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use : GPS
Nav In Use : FMS Or FMC
Flight Phase : Landing
Airspace.Class B : ZZZ

Component

Aircraft Component : Speedbrake/Spoiler
Aircraft Reference : X
Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1987335
Human Factors : Distraction
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Workload
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 : Check Pilot
Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1986734
Human Factors : Distraction
Human Factors : Confusion
Human Factors : Workload
Human Factors : Time Pressure
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Weather
Primary Problem : Human Factors

Narrative: 1

The pilot flying executed a very soft landing. The speed brake handle initially deployed in a normal manner. Just prior to the nose wheel touching down the speed brake handle unexpectedly retracted. As the pilot flying redeployed the speed brake handle the autothrottles fire walled pitching the nose up slight and the aircraft briefly lifted off before settling back down on the runway. After a brief startle period the pilot flying called for a go around and re-stowed the speed brake handle before the crew proceeded to fly the go-around profile. The unexpected flap retraction and the uncommanded go around thrust. The pilot monitoring could have backed up the flying pilot by promptly arrested the movement of the throttles if they had not been distracted by and focused on the speed brake handle.

Narrative: 2

After touch down. speed brake handle extended and retracted causing nose to pitch up and power to increase to Go Around power. Lowered the nose to avert a tail strike, but at this point the aircraft became airborne. Executed a Go Around and returned back for landing. Soft landing and gusty winds during landing.

Synopsis

B737-800 flight crew reported after a very smooth landing the speed brakes auto retracted and the auto throttles went to Go Around power. The Pilot Flying executed a go-around.

Time / Day

Date : 202303

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : FLL.Airport

State Reference : FL

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : MIA

Aircraft Operator : Air Taxi

Make Model Name : Citation X (C750)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.SID : HROCK1

Airspace.Class C : FLL

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : MIA

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class C : FLL

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 4300

Experience.Flight Crew.Last 90 Days : 35
Experience.Flight Crew.Type : 1236
ASRS Report Number.Accession Number : 1986485
Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

During climb on the FLL HROCK1 near YOLOO at approximately 7000 ft. in smooth air, we suddenly experienced wake turbulence that rolled the aircraft 45 degrees to the left. The induced roll was enough to disconnect the Autopilot and cause the flight guidance computer to reset. As the Pilot Flying, I recovered the airplane and hand flew until the FGC (Flight Guidance Computer) reset about 30 seconds later. The Pilot Monitoring reported the wake turbulence to ATC who replied that we were 3 NM in trail of an Airbus A320 or 321. The PM (Pilot Monitoring) checked on the passengers who said they were okay. As it was below 10,000 ft., the passenger safety signs had not been turned off. Once we were at a safe altitude and low workload the PM checked on the passengers again to verify there were no injuries. There were no injuries.

Callback: 1

Reporter stated the roll was quite abrupt.

Synopsis

CE750 First Officer reported encountering wake turbulence departing FLL in trail of an A320 that resulted in a 45 degree roll.

Time / Day

Date : 202302

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : N90.TRACON

State Reference : NY

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : EWR

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class B : EWR

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 : 171

Experience.Flight Crew.Type : 1903

ASRS Report Number.Accession Number : 1977462

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 164
Experience.Flight Crew.Type : 1533
ASRS Report Number.Accession Number : 1977461

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

During approach getting radar vectored for EWR ILS 22L we were given a heading to join the localizer and reduce speed to 160 kias. The aircraft was configured for flaps 2 and 170 kias as previously assigned. A heading of 190 and a speed of 160 kias was assigned. Flaps 3 were selected and loc armed for capture on the 190 heading. As the aircraft banked to join the localizer, an upset was encountered. This resulted in approximately a 15 degree increase in bank to 35-37 from 20 degrees. Airspeed also increased to approximately 185 kts. with altitude gain of +200 ft. The autopilot and auto thrust were disengaged and upset prevention and recovery technique applied. The aircraft was returned to a stabilized state and the approach continued. However the event triggered a flap overspeed which was documented and reported to both Maintenance Control and Local Maintenance.

Callback: 1

Reporter stated wake encounters seem to be increasing.

Narrative: 2

Wake from 777. Base to final EWR 22L. No mention of 777. 3000 ft. slowing to 170 kts. selecting flaps 3. Wake turbulence [resulted in] uncommanded roll +15 degrees +15 kts. +200 ft. Upset recovery [was initiated]. Overspeed of flaps. Maintenance write up.

Synopsis

A319 flight crew reported an inflight upset resulted when they encountered wake turbulence on arrival into EWR in trail of a B777.

Time / Day

Date : 202302
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZNY.ARTCC
State Reference : NY
Altitude.MSL.Single Value : 18000

Aircraft : 1

Reference : X
ATC / Advisory.Center : ZNY
Aircraft Operator : Air Carrier
Make Model Name : Regional Jet 900 (CRJ900)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : JFK

Aircraft : 2

Reference : Y
ATC / Advisory.Center : ZNY
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : JFK

Person

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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1973695
Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Regained Aircraft Control

Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

We were on NY Center descending through about 18,000 [ft.] for 250 [kts]/12,000 [ft.] at CCC. A 777 was in front of us about 10 miles initially. They were given the same altitude and speed restriction. We tried staying above their descent path. When we were passing FL180 [the 777] did a sudden speed reduction. We went from 10 to 5 [miles] in trail quickly. I told the First Officer (FO) to start slowing asap and keep an eye on the spacing. About 30 seconds later we saw 777's wake about 5 seconds before we hit it. The FO disengaged the autopilot and arrested the descent rate as much as he could. We hit the top portion of the wake. There was an initial roll about 35-40 degrees left then and bank to the right about 30 degrees with a couple smooth oscillations for about 20-30 seconds. Once we had the aircraft fully stabilized I told ATC we needed more spacing after the wake encounter. ATC gave us a turn to the right and kept us about 8-10 miles in trail the rest of the way in. 777 slowing before required from ATC restriction reducing spacing.

Callback: 1

Reporter stated his aircraft was definitely unstabilized by the wake encounter.

Synopsis

CRJ-900 Captain reported encountering wake turbulence on descent into JFK in trail of a B777.

Time / Day

Date : 202302

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : N90.TRACON

State Reference : NY

Environment

Flight Conditions : VMC

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory. TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 900 (CRJ900)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : JFK

Aircraft : 2

Reference : Y

ATC / Advisory. TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : B747 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class B : JFK

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1973689

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1973691

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

I was working with a student as a LCP (Line Check Pilot). I was pilot flying. The weather was night VFR at both airports. The flight was uneventful until the approach segment. We were assigned 4000 feet and getting vectors for the ILS 22L [at JFK]. As we were getting vectored I could tell that we were getting vectored behind a few preceding aircraft. ATC slowed us to 210 knots and continued to vector us. We encountered some light wake turbulence but nothing drastic. I was watching the TCAS and could see we were following an aircraft. As we continued to follow, ATC slowed us to 180 knots and I called flaps 8. About 10 seconds later I could see and feel the plane sway. I gripped the yoke in preparation. And sure enough we hit strong wake turbulence. I instinctively clicked off the autopilot as the plane began an uncommanded roll to the right. I fought it back to level only for another uncommanded roll to the left to happen. There was about 4 uncommanded rolls with the greatest bank angle nearing 40 degrees. I was able to keep altitude loss to about 120 to 150 feet and airspeed did fluctuate a good amount. We got clear and I reported it to ATC. It was a 747 about 7-10 miles in front of us that caused it. The rest of the approach and landing was uneventful. The cause was not enough separation between us and the 747 to allow for wake to dissipate. I suggest ATC give us more separation from larger aircraft when sequencing us in for landing.

Callback: 1

Reporter stated this was a strong wake encounter.

Narrative: 2

Wake turbulence event to JFK. I was First Officer and PM (Pilot Monitoring). We were on a vector for a modified base leg into JFK ILS 22L after delay vectors for high traffic. We were vectored in line behind a heavy 747. At 4000 ft MSL and level we experienced strong wake turbulence. The Captain was at the controls and quickly disconnected the autopilot just before the largest, uncommanded rolling motion to our left. While regaining control the

aircraft lost about 120 ft. We then deselected the autopilot and reported the event with JFK Approach Control. We landed without further event.

Synopsis

CRJ-900 flight crew reported encountering wake turbulence in trail of a B747 on approach to JFK.

Time / Day

Date : 202302

Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 38000

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B767 Undifferentiated or Other Model

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Component

Aircraft Component : Turbine Engine

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 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 : 190

Experience.Flight Crew.Type : 485

ASRS Report Number.Accession Number : 1971513

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 166
Experience.Flight Crew.Type : 226
ASRS Report Number.Accession Number : 1971564

Person : 3

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 3592
Experience.Flight Crew.Last 90 Days : 144
Experience.Flight Crew.Type : 373
ASRS Report Number.Accession Number : 1973285

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

I was the First Officer (FO) on Flight XXX ZZZ-ZZZZ that departed on Day 0. A little over an hour into the flight we were level at FL370, talking to ZZZZ Center, and the Relief Pilot was on first break. It was at this time the Captain and I felt a jolt, the airplane began to yaw, and a significant vibration began. We looked at the engine instruments and determined we had lost thrust on the Number 1 Engine with a rising EGT of 692 degrees at the time. The Captain was the Pilot Flying so they took control of the aircraft and called for the QRC and the Engine Fire, Severe Damage, Separation Checklist. After completing the appropriate QRC and Non-Normal checklists we [requested priority handling] with ZZZZ Center, requested FL250 (drift down ALT was 26700 ft. @ 244 kts), and decided to divert to ZZZZ1. At this point the Relief Pilot was back in the cockpit and the Captain delegated duties for them and myself to go over the checklists one more time, contact the Flight Attendants (FAs), contact Dispatch, monitor cross-feeding fuel, and set ourselves up for our approach into ZZZZ1. We had no center tank fuel so we did not dump fuel and our landing weight was 300,000 lbs. below maximum landing weight. We requested the ILS to Runway XX with an alternate missed approach of straight out runway heading and up to 3000 ft. Our arrival, approach, and landing were uneventful. After landing we stopped on

the runway and had Airport Rescue and Firefighting (ARFF) Personnel inspect the exterior of the aircraft, especially our Number 1 Engine. Once they gave us the all clear we taxi to the gate without any issue.

Narrative: 2

While on my rest break, I both felt and heard a large shudder and airframe vibration from the left side of the aircraft at approximately XA:00 UTC. Assuming we had had an engine failure, I left the rest area to the forward galley to speak with the Purser. The Purser was unsure of what was going on and informed me they had been trying to call the flight deck but was unsuccessful. I told them that I believed we had had an engine failure and that they would call back for me when they were ready. I then took a Flight Attendant jump-seat in the forward galley and awaited the phone call from the flight deck which happened about a minute later. We set up for me to enter the flight deck and proceeded in once it was secure. Upon arrival to the flight deck I found that indeed the Left Engine had failed and was vibrating quite badly as we could feel the airframe vibrations. The Captain and First Officer had already accomplished the Severe Engine Damage QRC and Engine Fire QRH. We were also already in our descent to a safe drift-down altitude and diverting to ZZZZ1. After I was briefed on what was happening and what the plan was, I was tasked with trying to reach Dispatch over the SATCOM. After several attempts to reach Dispatch over SATCOM I had to give up after receiving no answer. The phone would dial but there would be no answer. I informed the rest of the crew that I was unable to reach Dispatch over SATCOM so the Captain sent an ACARS message when time allowed in the descent. After this I took a look at the QRC/QRH procedures that had been accomplished and verified that everything had been done and started to monitor our fuel balance. Once all of this had been done I was delegated to keep the Flight Attendants informed of what was going on and give them their briefing. After concurring with the Captain, it was determined that we had about 15 mins of flight time left to ZZZZ1 at this point, we would have the Flight Attendants prepare for an evacuation, and we had no special comments. I passed this information along to the Flight Attendants and then we briefed the ILS XX and prepared to land at ZZZZ1. The Captain briefed us using our briefing card and we discussed the threats of having an engine failure, night landing, and unfamiliar airport. We also discussed that once on the ground we would come to a complete stop on the runway and then once stopped I would make an announcement to the passengers to Remain Seated, Remain Seated and we would have Airport Rescue and Firefighting (ARFF) inspect the Left Engine for any fire or cause for potential fire and then base our next steps after their findings. We then ran the deferred items Descent Checklist from the QRH. After we briefed and within the terminal area I identified the localizer for Runway XX and then quickly called to Door1L to update them on our time to touchdown which was about 5 minutes from that point. At this point we were on a downwind and being vectored for a 10 mile final for [Runway] XX. The Pilot Monitoring First Officer (FO) coordinated with ATC for a potential go around where we would need to fly runway heading up to 3000 ft. and this was approved if necessary. From here we continued to be vectored and set up for a flaps 20 landing as per the QRH and ran the deferred items Before Landing Checklist from the QRH. The Captain then made a stabilized approach and landing on Runway XX and stopped on the runway and accomplished what we had briefed in the air. I made a PA to the passengers to make them aware of the ARFF trucks approaching the airplane out of an abundance of caution and told them to remain seated. ARFF determined that there was no fire or fire hazard so we then coordinated with Dispatch about getting a gate which they already had and prepared to move the airplane under our own power to the gate. At this point I made another PA to the passengers informing them of this and that although we did have a gate it would take some time to get off the airplane as we would have to coordinate with Customs and that for the time being should remain seated until everything had been figured out. I then made a call to the Purser and told them the same information

and that it would be a couple mins before getting to the gate but that there was currently no threat of an evacuation and would proceed to the gate as normal. Once clear of the runway, the FO accomplished the after landing flow, we taxied to the gate, set the parking break and accomplished the parking flow and checklist and then except leaving the fasten seat belt sign on as we did not want the passengers to unnecessarily get up until it was determined that they could. The Purser then called asking if it was okay to disarm the doors and allow them to be opened which we said yes to and then opened the flight deck door and began coordinating with Authorities and Airport Personnel what our next steps would be.

Narrative: 3

At approximately XA30Z 100 NM east of ZZZZ1 on Day 0, Aircraft X, we experienced a sudden failure of the Left Engine. A loud bang, subsequent shake of the airplane and a significant vibration was experienced. Upon evaluation of the situation, I acting as Pilot in Command [requested priority handling] and requested diversion to ZZZZ1. We woke up the Relief Pilot. Briefed the Flight Attendants and passengers after all required checklists were completed. I made the decision to not make any large changes to airspeed, power settings, and flight path other than drift down because of the amount of vibration in the airplane, floor, and yoke. The airplane remained on the autopilot until approximately 1500 ft. with frequent checks for trim changes. My major concern was the structural integrity of the airplane after the violent failure and resulting vibration. I was very diligent to make sure changes in G loading were not large. The vibration was substantial and continuous. The only time the vibration lessened was upon extension of Flaps 1. The vibration got better but immediately returned when Flaps 1 was fully extended. We requested and turned a 10 NM final for Runway XX in ZZZZ1 and flew the ILS approach under clear skies with winds reported 280 degrees 17 gusts to 27 kts. We requested airborne that Crash Fire Rescue (CFR) meet the aircraft on the runway to inspect the left side of the aircraft for subsequent fire prior to taxiing to the gate. I landed the airplane manually without incident after obtaining all required data and safely stopped on the runway using auto brakes approximately 5500 ft. down the runway. The Relief Pilot as directed made a PA announcement for all passengers and crew to remain seated. We spoke directly with CFR on Tower frequency and determined the aircraft was safe to move and taxied to gate X and parked. We completed all required checklists for shutdown and parking, and after approximately 40 min we exited the airplane with Customs approval.

Synopsis

B767 flight crew reported a #1 Engine Failure in cruise followed by significant vibration. The flight crew diverted to make a precautionary landing.

Time / Day

Date : 202301

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 37000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1966492

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

During a climb from FL370 to FL380, we experienced a sudden moderate to severe turbulence event that caused the aircraft pitch to dramatically increase and approach a stall. The increase was so sudden that by the time I turned off the auto throttles and autopilot to manually increase thrust and take control, the aircraft altitude had reached approximately 300 ft. above FL380. To regain airspeed, the recovery required me to descend to approximately 200 ft. below FL380 where I then increased pitch to stabilize the climb back to FL380 while returning to level autoflight. No other moderate to severe turbulence was experienced and the flight continued without further incident.

Synopsis

B737-800 pilot reported encountering sudden moderate to severe turbulence in the climb between FL370 and FL380 that resulted in airspeed and altitude deviations.

Time / Day

Date : 202301

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 900 (CRJ900)

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use : Vectors

Component

Aircraft Component : Horizontal Stabilizer Trim

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1965014

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result.General : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

We were given published hold at ZZZZZ with EFC of XA13. We did our numbers and concluded that we be able to make it close to the time given with a different alternate of ZZZ. Once cleared to exit the hold we proceeded the ZZZZZ1 landing south. On set up for the approach on ILSXX the Autopilot was having a hard time staying corrected, so I (Pilot Flying) took off Autopilot and proceeded to hand fly. Wind 240@13 gusting 39. We corrected the the winds but was unable to maintain stability. Captain called for go around at 800 ft. AGL. we were given a heading of 270 and altitude of 4,000 ft. MSL. Once we execute the missed, I found (Pilot Flying) that Stab Trim was trimming us for nose down. Captain and I both concluded that it was a Stab Trim Runaway. I exercised the procedures for Stab Trim Runaway. Captain took over flight controls, as I ran QRH. Stab Trim Runaway ceased, and were able to regain control. Both I and the captain agreed to proceed back into ZZZ1.

Synopsis

CRJ-900 First Officer reported a Horizontal Stabilizer Trim Run Away condition during approach. The flight crew ran the QRH and the Run Away conditioned ceased. The flight crew continued the approach to landing at destination airport.

Time / Day

Date : 202212

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : LAS.Airport

State Reference : NV

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAS

Aircraft Operator : Fractional

Make Model Name : EMB-505 / Phenom 300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : LAS

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : LAS

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1960739

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

Cleared for the visual for [Runway] 26L following visual contact with a B787. We slowed down, 8 miles in trail, over Intersection PRINO at 8000 ft. MSL. We planned on going one dot above the glideslope. The aircraft hit the wake turbulence, tossing the aircraft into a 65-degree uncommanded left roll before counter inputs from my flying partner righted the ship. No altitude was lost and all control inputs felt normal after the encounter. We decided to continue the approach, flying above the glideslope, and no further wake was encountered. We promptly notified Tower of the incident and attempted to verbally contact Maintenance about my desire for a thorough mechanical inspection of the effects of the turbulence on the aircraft. I ended up having to write the aircraft up without speaking to Maintenance due to the extended hold time. Not sure if the EMB 505 is more susceptible to wake but maybe a study should be done about its susceptibility and perhaps an increased separation for this type of aircraft.

Callback: 1

Reporter stated the roll was quite abrupt.

Synopsis

EMB-505 Captain reported encountering wake turbulence on approach to LAS in trail of a B787.

Time / Day

Date : 202212

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 38000

Environment

Weather Elements / Visibility : Turbulence

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B747-400

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Cruise

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1959896

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Became Reoriented

Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

Severe turbulence after passing leading to 1500 ft. altitude deviation. Prior to the event, we had been working an issue WXR FAIL, for which the aircraft had also previously been written up for. There was no indication on the radar or from ATC of any significant weather or convective activity. We were in IMC, in what we expected to be a thin layer of stratus clouds. The flight had been smooth with low winds and wind shear number 2 (low) as projected from our flight plan. When the event occurred I was PM and the relief Captain was Pilot flying (PF), with the Captain in observer seat receiving a briefing before taking over command for approach and landing. The aircraft suddenly jolt followed by immediate altitude loss. The aircraft was in zero G and a brief moment of negative G loading, leading to everything in the aircraft not strapped down becoming airborne, including the blue water in our lav. Myself and the relief PIC was strapped in front left and right. The three other crew members onboard became airborne, with two hitting the ceiling and one experiencing headache and some neck pain. The aircraft lost approximately 1500 ft. and momentarily exceeded min and max maneuvering speeds with the stick shaker activating momentarily. The relief PIC who was PF disconnected the autopilot and auto throttles and maintained a constant pitch attitude, only a very minor roll movement was experienced. After the turbulence calmed, a climb back to FL380 was initiated and the event reported to ZZZZ Control and company via ACARS. We proceeded to ZZZZ as planned since it was the closest suitable airport. We alerted company to have medical personnel standing by in ZZZZ in case our potentially injured crew member needed assistance. We elected not to contact med link as we were already starting our descent phase and dedicated our attention to get the aircraft safely on the ground. The flight landed safely in ZZZZ without further incident. The jump seating crew member was examined by medical personnel and their decision was that they were fit to continue to ZZZZ1. After speaking with them, they also indicated that they were fit to continue. A severe turbulence entry was made in the logbook and after inspection, the aircraft and crew continued to ZZZZ1.

Synopsis

B747-400 First Officer reported severe turbulence in cruise flight resulting in temporary loss of aircraft control.

Time / Day

Date : 202212

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 31400

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

Aircraft : 2

Reference : Y

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Flight Phase : Cruise

Airspace.Class A : ZZZ

Component

Aircraft Component : Autopilot

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1958049

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1958051

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft RA
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While in cruise at FL310 ATC advised us of crossing traffic, the First Officer (FO) and I both had the traffic in sight and the FO reported that to ATC. We then returned to our conversation while monitoring the traffic. We were flying with the auto pilot on and normally operating we suddenly and abruptly had an autopilot disengagement. As soon as the autopilot disengaged the airplane pitched up rather aggressively and started to climb. By the time I said autopilot disengage and got on the controls the airplane was already climbing at greater than 1200 FPM. This aggressive pitch then, nearly immediately after, caused a TCAS RA with another airplane. The FO reported the TCAS RA to ATC immediately and was giving excellent correcting call outs throughout the RA. I was fighting to get the airplane back into the green RA box by arresting the climb and beginning a descent. I believe we had gained approximately 400 ft. above FL310 at the highest point. The total duration of the event was approximately under 1 minute. After getting the clear of conflict call from the TCAS we were close to our original altitude and we returned to FL310 and reported to ATC that we were clear of the conflict and level at FL310. We also reported that we experienced an issue with our autopilot which caused the RA to ATC. Once level we attempted to re-engage the autopilot which did not work initially but did on the second attempt. The auto pilot functioned normally for the remained of the flight. There is little if anything to improve to prevent this due to the randomness of the autopilot disengagement. While flying in RVSM airspace there is simply less time for altitude deviations before they will set off a TCAS RA. It is not normal procedure to be actively shadowing the controls while in cruise with the auto pilot on.

Narrative: 2

While in cruise at FL310 we were advised of traffic passing above and opposite direction. I advised ATC we were "looking." The Captain and I both saw the other aircraft due to the contrails it was making. Having the traffic insight and being no factor the Captain and I resumed our conversation while keeping the traffic in sight. Approximately a minute after the autopilot disengaged. The Captain called "auto pilot disengage" while saying that we received a TA/RA to descend. I looked at the VSI which was indicating 1200 FPM climb the Captain was actively pushing the yoke down. I then looked to make sure I could still see the traffic, which was still above us. I advised ATC we had a TA/RA and were descending. We got clear of conflict and leveled back at FL310. We then were able to reengage the autopilot. I notified ATC we were back level at 310 and had an autopilot disengagement but appeared we had it reengaged. The event took a total of no more than a minute from autopilot disengagement, TA/RA, corrective action, back to level off at FL310. This event to me seemed to happen exactly as it does in the sim and the Captain and I reacted as taught. I felt our communication and coordination as a crew was exactly what we needed to do. The Captain acted promptly and effectively. The only way the Captain could have reacted any faster was like how it happens in the sim where you are on guard and actively shadowing the controls. Which during this phase of flight and this altitude it's not required to shadow the controls.

Synopsis

CRJ-200 flight crew reported autopilot malfunction in cruise flight resulted in the airplane pitching up followed by a TCAS RA.

Time / Day

Date : 202212

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Weather Elements / Visibility : Turbulence

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Parked

Component

Aircraft Component : Yaw Control

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1957644

Human Factors : Communication Breakdown

Human Factors : Other / Unknown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Maintenance

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1958659
Human Factors : Communication Breakdown
Human Factors : Other / Unknown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Other

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

This 737 has a history of a yaw damper malfunction. This issue has been written up, and signed off, multiple times. The MEL states that flying into known moderate or above turbulence is prohibited, and if encountered, the crew must exit the condition. Flaps 40 landings are also prohibited. On two instances of flying this aircraft, the crew unknowingly flew into moderate + turbulence. In both instances, the autopilot was engaged at the time the aircraft was inadvertently flown into said turbulence. In both instances, the crew encountered violent and abrupt yaw and rolling motions, and the autopilot disengaged after failing to maintain directional control of the aircraft. During both flights, the aircraft went into an abrupt un-commanded roll after the autopilot was disengaged, and the crew received a bank angle warning. I was scheduled to fly this aircraft, and noticed that not only was the yaw damper still MEL'd, but both flight directors were MEL'd. Upon speaking to other crew who have flown this aircraft, it was noted that the aircraft was having Mode Control Panel (MCP) issues, also inducing rolling motions and flight director failures. A write up by the Captain (CA) of another crew stated that the aircraft was unsafe to fly at night. Due to all MEL issues, and based on previous flights with the potential for turbulence in the vicinity of ZZZ1 (Cumulonimbus clouds at 2200 ft. were being reported) I made a call to the VP of safety voicing my concerns. I then spoke with the 737 program manager, as well as the Chief Pilot, and told the Captain my reasoning for refusing the aircraft. I was pulled off the flight, put on reserve, and the plane departed for ZZZ1 around XA00Z. Avoiding turbulence is an instance in which pilots are relying on PIREPs to avoid it. Another determining factor would be weather at the departure and arrival airports. One could infer that there would likely be turbulence in the presence of cumulonimbus cloud formations. In these two instances, the moderate turbulence was unreported and a surprise to the crew. On both flights, the crew reacted accordingly to regain aircraft control, and exited the turbulent condition as soon as possible. In any instance where the aircraft had the MEL signed off, a new write up was entered into the

logbook. The narrative by the CA who wrote that the aircraft was unsafe for flight at night should have been taken seriously. If a Captain has been signed off and passed check rides, and been made PIC of an aircraft, Maintenance should take what he or she says into serious consideration when determining if an aircraft is safe to fly, or if issues need to be resolved before the aircraft is flown again. Multiple crews have not only written up the same issues with the aircraft, but have informed maintenance that they have persisted. My encounter with the aircraft rolling un-commanded into a severe bank when the autopilot could not maintain directional control is not unique, nor are the Multi-function Flight Displays (MFD's) flickering on and off or navigational issues with regard to the aircraft. I would suggest that, in the future, any aircraft that has months of the same write up, be pulled off the line and grounded until a fix can be put into place. Not only does this ensure that safety is a priority, but that pilot concerns are taken seriously.

Narrative: 2

I was scheduled to fly this 737 from ZZZ to ZZZ1 and back. My report time was XC20L. I had cited safety concerns with this aircraft, and had already notified operations earlier that afternoon (around XB00L) I would not be accepting the aircraft upon arriving due to the issues plaguing the aircraft, reports from other pilots, and my own personal experiences. I was informed that there would either be a tail swap or the flight would be canceled by the Chief Pilot. I arrived early, and when I noticed there had not been a tail swap or a cancellation, I called Dispatch. They informed me they had not been told about a cancellation or tail swap. While at the airport, I waited to see what would transpire. Shortly thereafter, crew resources called me and told me I was free to go home, after I had shown up for duty. However, they illegally assigned me to a reserve period beginning at XA00L that morning, ending at XC00L that evening. This should have started at my original report time, and followed 8 hours after that. They illegally assigned me a reserve that ended before my report time. Crew scheduling assigned an illegal assignment after pulling me off a flight after citing safety concerns. The Reserve period should have started at XC20L, and going until the following morning. I informed the company of the safety concern early enough to where I could have been taken off the flight before my report time.

Synopsis

B737-800 First Officers reported this particular 737 has yaw control problems. One pilot reported uncommanded rolls and the other pilot reported receiving information from other pilots and their own experience of perpetual problems. Both FOs refused to fly the aircraft.

Time / Day

Date : 202212

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Aircraft Operator : Corporate

Make Model Name : Gulfstream IV / G350 / G450

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Component : 1

Aircraft Component : Autoflight System

Manufacturer : FGC-1

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Autoflight System

Manufacturer : FGC-2

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1955247

Human Factors : Troubleshooting

Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1955248
Human Factors : Confusion
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While on the RNAV (GPS) X Runway XX approach to ZZZ, between waypoints ZZZZZ and ZZZZZ1 and just after completing the before landing check with the aircraft fully configured for landing, we experienced a simultaneous failure of both Flight Guidance Computers (FGCs). Aircraft entered an uncommanded nose-down pitch attitude at which time the "FGC 1-2 FAIL" CAS message appeared along with audible alert. Autopilot, autothrottle, flight director, electric pitch trim and yaw damper all disconnected. PF (Pilot Flying) immediately took control of the airplane and corrected the pitch attitude while remaining on the approach course. We assessed and discussed the situation and decided due to our low altitude and close proximity to the runway that the best course of action was to continue the approach and landing without attempting to troubleshoot the anomalies. PF flew the aircraft while PM (Pilot Monitoring) manipulated the manual trim wheel at the PF's command. Aircraft landed safely without further incident. This was the second simultaneous dual FGC failure in the G-IV fleet (two different aircraft) in the last two weeks. Both failures occurred during the approach phase of flight, and both occurred in cold weather environments (ZZZ1 and ZZZ). Suggest getting Gulfstream and/or Honeywell involved in identifying and remedying the root cause(s) of these failures. The potential for a catastrophic outcome from a similar failure under less optimal weather conditions or with a less experienced crew is rather high.

Narrative: 2

On an 8 mile final to Runway XX in ZZZ we experienced a dual flight guidance computer failure while flying the RNAV-GPS X Runway XX. The aircraft experienced an uncommanded pitch down as all automation including auto-throttles disconnected. The pitch trim and yaw dampener also failed. The aircraft was flown manually with no automation, no auto throttles, and manual pitch trim to an uneventful landing using raw

data. Please investigate with Gulfstream to fix the problem. Had this occurred in IMC with the slightest distraction the result could have been very different.

Synopsis

Gulfstream G-IV flight crew reported loss of both flight guidance computers on final approach. Reporter stated this is a recurring issue.

Time / Day

Date : 202211

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Light : Daylight

Aircraft

Reference : X

ATC / Advisory. TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Horizontal Stabilizer Trim

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Gear Extend/Retract Mechanism

Aircraft Reference : X

Problem : Malfunctioning

Component : 3

Aircraft Component : Autoflight 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 Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1950812
Human Factors : Workload
Human Factors : Troubleshooting
Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

On left downwind Runway XXC into ZZZ we experienced a loss of flight control effectiveness. Condition were IFR with light to moderate Rain and visibility of 2/1/2 mile at the surface. Pilot flying (PF) was First Officer (FO), and I was the pilot monitoring (PM). We were given a descent clearance to be followed by a base turn to final. While descending on the downwind, FO stated that the aircraft was making an uncommanded turn. With his hands on the control the Autopilot disengaged. FO struggle to regain control indicating strong control force and a pitch down trim force. Concern was a possible runaway trim. I immediately deployed the trim wheel handle and began to trim airplane aft according to FO instruction. My only concern at the time was flying the airplane and regaining control. The only indication I remember up to this point was the red Autopilot annunciator illuminated. ATC called several time to issue turn instruction. We did not respond, due to the urgency of aircraft control. After regaining control, there were concerns about the trim as express by the FO. I decided to eliminate confusion and cutoff the stab trim switches. I informed the FO that switches were cutoff and that we were now manual trim. I then responded to ATC and [requested priority handling]. ATC acknowledged the request and requested the standard passenger count and fuel onboard. I want to land ASAP, now that we had control under what seemed to be manual reversion. The FO was doing a great job turn and descending. We were able to turn and descent to 4,000 ft. and establish ourselves on final. There was much dialog and sense of urgency in our communication in the flight deck. I wanted to land immediately, since time was a factor and weather was not in our favor. As we started to configure with flaps, we attempted to extend the gear. The gear did not extend. At this point it became an approach to landing would not be feasible. I requested a straight out miss and maintaining 4,000 ft. ATC granted that request and shortly thereafter gave us a climb to 8,000 ft. and a turn to the east. At this point, we got busy in a hurry. FO wanted to clean up the flaps. This made sense as first and then I reconsidered. Valuable time was being wasted trying to climb and configure, I also did not see any advantage to clean up with a hydraulic issue.

I did not want to lose the use of flaps and then complicate issue more. This was discussed between the FO and I. We agreed not to clean up completely. We left the flaps a 1, the indicator stop a 5. I instructed ATC that we were going to stop the climb at 5,000 ft. They gave us clearance to maintain 5,000 ft. This helped us focus on the gear problem. At this point, I also decided to bring the jump seat pilot into helping us. I instructed him to plug in a headset. Up to this point, everything was just happening too fast and I needed to slow things down and get the gear down. I opened the QRH and started the Manual gear extension checklist. I had the Jump Seat Pilot extend the gear since he had great access to these handles. Right gear was dropped first, this caused a yaw to the right and a pitch down attitude. More manual trim required. Then nose and left gear. This stabilized the yaw. At this point, I was ready to come back for the approach and advised ATC. They started to give us headings back to ILS XXC. I ask the FO is he was OK, or needed a break. He informed me that he was good to continue pilot flying. I then instructed the Jump Seater to monitor FO and keep him focus and talk to him and the same time, I instructed FO to keep the turns to no more than 10 degrees. I advised ATC, that we need a shallow intercept to final. I notice that HYD B system was at 60 percent and brake pressure just above 2,500 PSI. I coordinated with the FO and we agreed that he would only fly the plane. I had the Thrust Levers and the trim. We settled on a speed of 170 kts. for approach. Again, Flap handle was at 1 while indicator was at 5. We broke out at 400 ft. AGL with runway in sight and light showers. Once landing was assured, I set the power to idle. FO needed back trim to arrest the sink rate. I trim back aggressively. We landed and max brake was applied. Control was exchanged and I was able to turn off slowly clearing the runway. We were towed to our gate. Time, Weather and operating in a terminal area under IFR condition with no Autopilot.

Synopsis

B737-800 Captain reported loss of autopilot and hydraulic system failure caused controllability issues in flight. The flight crew performed a go around, regained aircraft control and landed at destination airport.

Time / Day

Date : 202211

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Work Environment Factor : Glare

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Climb

Flight Phase : Initial Climb

Component

Aircraft Component : Autoflight 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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1948076

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Flight Cancelled / Delayed

Result.General : Maintenance Action

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Turning right into the sun out of 5000ft, eyes started to water, with aircraft trimmed, I selected autopilot A. Immediate, abrupt, right hard over exceeding autopilot parameters and it disconnected. Hand flew aircraft to 12,000 checking trim, overhead, assessing for any obvious issues. Nothing unusual was noted. I ensured aircraft was in trim, while flying wings level in a climb, and selected autopilot A again. Repeat of previous abrupt/violent hard over to the right, exceeding autopilot parameters, with resulting autopilot disconnect. Ran the checklist for uncommanded autopilot disconnect. Elected to return to the airport as it was an extreme autopilot disconnect. Ran non-routine landing checklist. Burned down fuel to max landing as the aircraft was flying as expected and without issue by hand. Landing uneventful. Cause - Startle effect is real. I missed the "my aircraft" call getting the aircraft under control the first time. (I'm not sure if flight recorders are checked, but there was likely some expletives in place of the "my aircraft" call, I apologize.) My First Officer (FO) did say "your aircraft." When we ran the checklist for uncommanded autopilot disconnect, it did not say to select the other autopilot, although we discussed it, and decided the airplane was flying fine manually, and the disconnect on A was extreme enough that we didn't want to experience issues with B. That said, the first thing maintenance asked, was if we tried B. Suggest revising the checklist if they want the crews to try the other autopilot regardless of a hard over. Suggestions - Mechanical failures happen no matter how good a maintenance program. I don't see how this could have been prevented.

Synopsis

Air carrier Captain reported two hard over events when connecting Autopilot A. Flight crew disconnected autopilot and hand flew aircraft back to departure airport.

Time / Day

Date : 202210
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.AGL.Single Value : 800

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : A321
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Mission : Passenger
Flight Phase : Initial Climb
Flight Phase : Climb
Airspace.Class B : ZZZ

Component

Aircraft Component : Aeroplane Flight Control
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 : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1948075

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1950171

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Departure Airport

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

I was the Pilot Flying (PF), First Officer's (FO) take-off. During the take-off phase on XXR out of ZZZ, we took off behind an aircraft. Once airborne, at approximately 800 ft. the aircraft began an uncommanded slow roll to the left. I responded by displacing the FO's flight control to the right with an amount that I believed was equal to counter the left roll. The aircraft did not respond to my flight control input and continued to roll left so I displaced more right stick to counter the left roll. The aircraft continued to roll left, at one point I ran out of right stick input by actually hitting the physical limit to displace the FO side stick. The aircraft began to slowly roll to the right, and I began to think that the aircraft was not responding in kind to my right side stick inputs. I began displacing my side stick to the left slowly moving to center my control stick thinking that the aircraft was responding now. The aircraft had not achieved wings level before the aircraft began another slow roll to the left. I countered with more right side stick and again the aircraft did not respond in kind to my right side stick input to counter the left roll. I hit the physical limit of travel on my control stick again, only briefly before the aircraft began a slow roll back to the right to wings level position. The whole time we were climbing out. By this time we were above 1000 ft. AGL, I was still hand flying. The aircraft seemed to be responding normally to my control inputs by this time. I activated autopilot 2 and the aircraft responded normally. We brought up the flight control page on the monitor to see if there were any unusual inputs on the page. But there was none. We climbed out on the ZZZZ departure with a normal climb out in managed mode. The aircraft made all the constraints in managed mode. Once we were not as task saturated, me and the Captain discussed what we should do. The decision was made by both of us to not continue the flight all the way to ZZZ1 if there was a possible flight control issue. We decided to coordinate with ATC for a precautionary landing back at ZZZ, we were not overweight, we made an uneventful landing, and taxied the aircraft back to the gate to hand the aircraft over to maintenance. Just a side note, there were no electronic warnings that would've let us know that there was a problem with the flight controls. Not sure what causal factors could've caused this. Again, I don't know what caused this so I don't know how to prevent it from occurring again.

Narrative: 2

During the take-off phase at ZZZ, passing approximately 800 ft. AGL, the aircraft began an un-commanded roll to the left. The First Officer (FO) who was Pilot Flying (PF) countered the roll with increasing side stick movement to the right until achieving full right side stick displacement. The left roll was arrested at approximately 15 degrees of bank

and began a slow roll back to the right at which time the PF began to move the side stick to the left to re-center and match the aircraft attitude. However, prior to achieving center stick, the aircraft again began rolling left causing the PF to again displace the side stick full right to arrest the un-commanded roll. The un-commanded roll to the left was again arrested and reversed to approximately straight and level, at which time the PF matched the side stick position to the aircraft attitude. The PF then explored all axis's of control input with the side stick, to which all seemed normal. The rest of the take-off phases of flight were normal. We then discussed the event in detail to ascertain an external cause; we could not. The wind was constant with no gusts and there were no other weather phenomenon in the area. We were following an aircraft on departure that could not have generated a wake to cause such an event. Considering also that the aircraft generated no system warnings or messages, we were unable to positively identify the cause of the event. We decided that with an unknown flight control issue the safest course of action would be to land. We then coordinated for, and accomplished an uneventful landing at ZZZ. Collect flight data, pilot reports and any other and all sources available from this type of aircraft to ascertain if there is a flight control issue.

Synopsis

A321 flight crew reported flight control malfunction during departure climb resulting in a return to the departure airport.

Time / Day

Date : 202210

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Elevator Trim System

Aircraft Reference : X

Problem : Failed

Person

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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1946791

Human Factors : Communication Breakdown

Human Factors : Distraction

Human Factors : Troubleshooting

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.ATC Issue : All Types

Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Human Factors
Primary Problem : Aircraft

Narrative: 1

I was PM (Pilot Monitoring) on Aircraft X to ZZZ while the FO (First Officer) was PF (Pilot Flying). During a continuous descent from higher altitude, passing around I believe FL200 down to FL190, when we felt three or four partial rolls, almost like wake. The AP was kicked off, right about the time we received a clearance to descend to 11000 and 250 at ZZZZ. We told ATC we would not be able to make the restriction, and would need some vectors and a delayed descent to work through the QRH procedures. The AP Fail and Pitch trim fail cautions were displayed, I opted to start with the pitch message; however, was interrupted several times with questions or requests to do a hold when we had asked for vectors so we could complete QRH procedures. After ATC eventually gave us discretion with doing a slow 360 back to the airport, We initiated the pitch trim malfunction procedure, finding that the message came back nearly immediately after the trim cut out switches were cycled, we concluded that checklist with the abnormal procedure which required us to cut off the pitch trim, [advise ATC] and land. We determined our best course was to continue to ZZZ as it was close, and would afford time to work through the trim malfunction descent and Landing checklists, as well as communication with Dispatch, FAs (Flight Attendants), and passengers. We [advised ATC], I followed with the AP fail checklist, and then moved to the descent checklist. Once the runway setup was completed, landing distance calculated, and landing speeds entered, I relieved the FO of flying as she had been flying without trim for some time now, and opted to have her finish the flight as PM (Pilot Monitoring) where she contacted Dispatch, kept the passengers informed, and worked the radios and checklists until landing. The remainder of the flight consisted of setting up for a long final, configuring to different speeds early to assess the controllability of the aircraft without pitch trim and landing at ZZZ without further issues. We taxied to the gate without further incident, contacted Dispatch, and then contacted Maintenance. Several interruptions by ATC initially when we told them we needed to stop descent and might need delay vectors to run QRH procedures delayed me several times, just trying to index the first procedure and was interrupting communication between the FO and myself. Additional problems were added to our list when rather than giving vectors as we asked, ATC gave us a present position hold, which initially I had selected in the FMS, and then as I was entering the direction of turn, the FMS suddenly cleared the hold and refused to allow present position holds to be placed in the flight plan. We spent several minutes trying to setup holds rather than dealing with the QRH before we ultimately told ATC we were unable. If ATC has been told that an aircraft needs time for procedures, there needs to be some awareness that asking a new question every 10-20 seconds only prolongs the problem.

Synopsis

Air carrier flight crew flying an ERJ-170 aircraft reported autopilot and pitch trim failure inflight.

Time / Day

Date : 202210
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : JFK.Airport
State Reference : NY
Altitude.MSL.Single Value : 1300

Aircraft : 1

Reference : X
ATC / Advisory.Tower : JFK
Aircraft Operator : Air Carrier
Make Model Name : Regional Jet 900 (CRJ900)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Airspace.Class B : JFK

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : JFK
Aircraft Operator : Air Carrier
Make Model Name : B757 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Airspace.Class B : JFK

Person

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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1943170
Analyst Callback : Completed

Events

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew

When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Ambiguous

Narrative: 1

We were departing Runway 22R at JFK. I was PM (Pilot Monitoring) and FO (First Officer) was PF (Pilot Flying). A 757 was the departure prior to us. After the 757 started its departure roll we were instructed to line up and wait. After a short wait, we were given a takeoff clearance for runway heading up to 5000. At 600 ft. AGL the FO called for the autopilot and it was turned on. On schedule the FO commanded an acceleration for clean up. As we were accelerating at roughly 1300 ft. AGL the aircraft entered an uncommanded roll to the right and reached approximately 20-25 degrees of bank. The autopilot kicked off and the FO promptly reestablished control via his yoke. We were about 170-180 KIAS and the FO held a full scale left deflection of his control wheel to stop the roll and return the aircraft to a 0 degree bank. The aircraft rolled notably slower than what I would expect for the amount of control input. I helped talk the FO into fixing the rest of the deviations caused by the sudden roll and we re-established a climb and turn to an ATC assigned heading. I felt that we were a normal distance behind the 757 from what I've experienced at JFK and other large hub airports for being in trail of 757 or heavy aircraft. We were fairly heavy with a somewhat forward CG, so it wouldn't surprise me if the 757 was outperforming us on the initial climb, especially if they were lightly loaded. The winds were also fairly sporadic in the NYC area. The surface winds were generally 10 kts. or so during our departure. But up at 4000 ft. they were closer to 40-50 kts. so it also wouldn't be surprising if the wake turbulence was dissipating at unequal rates based on the odd shifts in the winds during initial climb. We were perhaps too close and following the 757 for too long as indicated by the fact that we hit their wake. Perhaps a sooner turn from ATC after departure or us performing a full thrust takeoff to get off the ground quicker and above the wake sooner could have avoided the encounter.

Callback: 1

Reporter stated he was surprised by the intensity of the roll.

Synopsis

CRJ-900 Captain reported encountering wake turbulence departing JFK in trail of a B757, noting that the recovery required full aileron deflection.

Time / Day

Date : 202210

Local Time Of Day : 1801-2400

Place

Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Night

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

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

ASRS Report Number.Accession Number : 1942032

Human Factors : Time Pressure

Human Factors : Situational Awareness

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Physical Injury / Incapacitation

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Regained Aircraft Control

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

I was the Pilot in Command (PIC) and Pilot Flying (PF) of the flight ZZZ1 to ZZZ2. Metar for ZZZ2 was 10kt winds -RA Few036 BKN 050 and TAF called for 09005kt 6sm -shra sct025 ovc040. Multiple squall lines present associated with a cold front at departure time to the north, south and southeast of filed route effecting most of the southeast US and the gulf moving east. I briefed the Flight Attendants (FAs) and passengers prior to departure, and at cruise altitude in smooth air that we would be flying around weather in the near future in case someone wanted to use the facilities. Approximately 40-50 minutes left in flight time I turned the seat belt sign back on, slowed to turbulence penetration speed, and made the PA announcement for everyone to return to their seats as we were getting close to areas of known weather. The majority of the storms were in a mass about 50 miles north of our filed route with widely scattered storms to the south extending to the southern tip of the US. We requested deviations to the right of course (south) due to lightning along our filed route and up to 20 degrees was approved. Onboard weather radar showed a wide gap in the line of storms which we headed for and I could see over the top of the storms with city lights in the distance and stars above at level 350 on an easterly heading. Suddenly we encountered a rising dark wall of weather. The First Officer (FO) warned me immediately but it was too late and we were in the developing storm. The aircraft rolled and yawed violently kicking off the Autopilot (AP). I quickly regained control started hand flying and yelled I need lower now. The FO relayed severe turbulence and the need to descend immediately to ATC. We were cleared to FL 240 and the FO selected it with VS down. However due to the updraft intensity the aircraft climbed approximately 600 ft. before we began a slow descent. I was doing my best to keep the aircraft speed around the turbulence penetration speed so I did not force a pitch down to prevent overstressing the aircraft. Although I have been told the event may have lasted minutes it felt like 15-20 seconds at most. My FO immediately notified company via acars called the FAs. FA 1 reported FA 2 had hit their head on the door however did not need medical attention. FA 1 informed me the passengers were indeed seated and no injuries were reported at that time. I called FA 2 again and said they had a headache but medical assistance was not required. The remainder of the flight was uneventful and we landed safely at ZZZ2. Having access to real time weather radar via internet in this instance would have greatly supplemented onboard wx radar and enhanced situational awareness.

Synopsis

EMB-175 Captain reported encountering severe turbulence, resulting in a momentary loss of aircraft control and an altitude deviation of 600 ft. After exiting the turbulent conditions, the flight continued to the destination airport, with only a minor injury sustained by a Flight Attendant.

Time / Day

Date : 202210

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 8000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Climb

Component

Aircraft Component : Autoflight 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 : 144

Experience.Flight Crew.Type : 4798

ASRS Report Number.Accession Number : 1940581

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Diverted

Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

On climb out departing ZZZ while hand flying, the yoke became stiff. After a certain amount of roll was initiated the roll rate increased drastically. After assessment by both myself and the First Officer, we agreed that the best option was to return to ZZZ. I [advised ATC] and returned to ZZZ. On final approach with A/P engaged at approximately 2500 feet, we experienced a left and right uncommanded roll. I disengaged A/P,A/T and hand flew the approach to an over weight landing.

Synopsis

B737 Captain reported autoflight system malfunction. The Captain disengaged the autoflight system and returned to departure airport.

Time / Day

Date : 202210

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class A : ZZZ

Airspace.Class B : ZZZ

Airspace.Class E : ZZZ

Component

Aircraft Component : Aileron 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 : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Last 90 Days : 160

Experience.Flight Crew.Type : 349

ASRS Report Number.Accession Number : 1940427

Human Factors : Distraction

Human Factors : Time Pressure

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Climbing out we experienced 2 events of aileron roll resistance left/right followed by an excessive bank below 26,000 ft, confirmed by both pilots with positive exchanges of controls. The Captain requested the trucks to meet us on landing. The Captain then informed company, Flight Attendants (FAs) and passengers. On return to ZZZ, we prepared for an overweight landing of 135,000 lbs. On approach we experienced an uncommanded roll left/right at 2,500 ft. [with the] autopilot on. On touchdown the "Takeoff Config" light illuminated. After thorough inspection by Airport Rescue and Firefighting we got the green light ("All Safe") and continued taxing to the gate.

Synopsis

B737-700 First Officer reported "...2 events of aileron roll resistance left/right followed by an excessive bank...".

Time / Day

Date : 202210

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : CLT.Airport

State Reference : NC

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : CLT

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1939715

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1940021

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related
Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

While flying a visual approach to Runway 36L in Charlotte we encountered wake turbulence from the aircraft in front of us. Aircraft Y had started the approach at a higher altitude and further distance from our position and had been sequenced in front of us. Between LONIA and CUNUK our aircraft started an uncommanded roll to the right about 20 degrees. It then settled for a second and then started an extremely aggressive roll to the right exceeding 30 degrees. I immediately disconnected the autopilot and leveled the wings. We did not see the exact angle the aircraft rolled to but we estimate it might have exceeded 45 degrees before we recovered. After leveling the aircraft I established the aircraft on the localizer above glide slope. We then contacted ATC to let them know and request a slower speed. We continued the approach and made a successful landing. I also had the First Officer call the Flight Attendant to make sure they and the passengers were ok. Aircraft flying a higher profile need to be sequenced behind lower aircraft to prevent this issue. Also I could have flown upwind of course or above glideslope to prevent this. Disconnecting the autopilot at the first sign of it may have helped as well.

Callback: 1

Reporter stated he was surprised at the intensity of the roll.

Narrative: 2

We were flying a visual approach to [Runway] 36L in CLT and encountered wake turbulence from Aircraft Y ahead of us. Aircraft Y had been started their approach at a higher altitude and farther out than we were but were sequenced in front of us. Between LONIA and CUNUK our aircraft began a relatively gentle uncommanded roll to the right roughly 20 degrees, seemed to settle and then aggressively rolled further to the right. The Captain immediately disconnected the autopilot and I assisted in leveling the wings. We estimated the roll had exceeded 45 degrees and took some effort to counteract the roll forces to the right. The Captain asked that I report the wake turbulence encounter and ask for a slower approach speed to increase separation from the preceding aircraft. The

Captain further mitigated any possible additional wake turbulence activity by establishing the aircraft slightly above glide slope. The Captain requested I call the Flight Attendant to make sure all the passengers were ok and we made a safe and successful landing. Proper sequencing of lower aircraft in front of higher aircraft and better spacing might have helped. We could have asked to extend downwind slightly and flown a higher glide slope in anticipation of wake turbulence.

Synopsis

EMB-145 flight crew reported encountering wake turbulence on approach to CLT in trail of an A321 that resulted in an aggressive roll exceeding 45 degrees of bank angle.

Time / Day

Date : 202109

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 13000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Haze / Smoke

Light : Dusk

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Personal

Make Model Name : Citationjet (C525/C526) - CJ I / II / III / IV

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Descent

Airspace.Class E : ZZZ2

Component

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 4400

Experience.Flight Crew.Last 90 Days : 60

Experience.Flight Crew.Type : 150

ASRS Report Number.Accession Number : 1841823

Human Factors : Workload

Human Factors : Human-Machine Interface

Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

An uncommanded roll to the right caused a deviation from the lateral course. I disconnected the autopilot via the control yoke disconnect button. I still had to physically overcome the control pressure so I also pulled the trim circuit breaker in case it was a factor. This did not change the control pressure. I used physical force to level the wings and turned the aileron trim which was very stiff and this abruptly changed the control pressure. I was able to hand fly and coordinate the rest of the procedure with ATC. Once in visual conditions I tried to see if the autopilot would work and it started a turn to the right again. I disconnected without any issue and hand flew the rest of the flight. Once on the ground I called ZZZ1 [Tracon] to ensure they were aware of my conditions and make sure no further actions were needed with their involvement.

Synopsis

A CE 525 Pilot reported an autopilot malfunction caused the aircraft to roll to the right, resulting in a temporary loss of control.