

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 Number36

Date of UpdateMarch 29, 2022

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

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



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 blue ink, appearing to read "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: 1841823 *(1 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.

ACN: 1837579 *(2 of 50)*

Synopsis

B737-800 Captain reported the aircraft suddenly skidded to the left during takeoff roll due to gusty crosswinds requiring corrective input.

ACN: 1831728 *(3 of 50)*

Synopsis

Light Transport Corporate Pilot reported encountering wake turbulence departing OAK in trail of an A321.

ACN: 1829597 *(4 of 50)*

Synopsis

B777 Captain reported rejecting the takeoff and returning to the gate when the aircraft initiated a hard left turn early in the takeoff roll.

ACN: 1829214 *(5 of 50)*

Synopsis

MD-11 Captain reported flight control computer issues during approach resulted in loss of all autoflight capability. Pilot also reported the aircraft had been previously refused due to flight control computer malfunctions.

ACN: 1828935 *(6 of 50)*

Synopsis

CRJ-200 Captain reported encountering wake turbulence on arrival into ATL in trail of a large transport.

ACN: 1827225 *(7 of 50)*

Synopsis

B737-700 Flight Crew reported hearing a loud bang from the nose gear area during the takeoff roll. In flight the hydraulic system malfunctioned and the crew performed a manual gear extension prior to landing.

ACN: 1827224 *(8 of 50)*

Synopsis

B737-700 flight crew reported a flight control malfunction shortly after takeoff.

ACN: 1822078 *(9 of 50)*

Synopsis

CRJ-700 Captain reported a trim malfunction on descent and followed QRH procedures to land successfully.

ACN: 1821671 *(10 of 50)*

Synopsis

CRJ-900 Captain reported encountering wake turbulence on descent into ATL in trail of a B757, which was following of a Heavy B787.

ACN: 1821354 *(11 of 50)*

Synopsis

MD11 flight crew reported multiple systems failures that required attention and distracted them, resulting in exceeding an airspeed limitation.

ACN: 1820448 *(12 of 50)*

Synopsis

Captain reported an LSAS system failure caused control issues on descent and approach to landing resulting in a precautionary landing.

ACN: 1817242 *(13 of 50)*

Synopsis

B737 flight crew reported encountering jet blast from B777 on Taxiway TT while landing on ORD RWY 27C.

ACN: 1812451 *(14 of 50)*

Synopsis

EMB-145 flight crew reported an engine failure on takeoff resulting in an air turn back and a precautionary landing.

ACN: 1805782 *(15 of 50)*

Synopsis

CRJ-200 Captain reported a flap indication issue followed by an uncommanded pitch down movement. The crew contacted Dispatch and Maintenance Control and decided to return to the departure airport.

ACN: 1802901 *(16 of 50)*

Synopsis

EMB XRJ-145 Captain reported auto flight system malfunctioned during departure and arrival phase by uncommanded reversion to Roll-Go Around mode.

ACN: 1802277 *(17 of 50)*

Synopsis

EMB-175 flight crew reported encountering wake turbulence departing DFW in trail of a B747.

ACN: 1797877 *(18 of 50)*

Synopsis

EMB-175 flight crew reported an autopilot anomaly resulting in a momentary loss of aircraft control.

ACN: 1796669 *(19 of 50)*

Synopsis

Air Carrier flight crew reported severe turbulence on takeoff resulting in a speed deviation.

ACN: 1792632 *(20 of 50)*

Synopsis

BE-400 First Officer reported encountering wake turbulence climbing through FL300 25 miles in trail of a B777 that resulted in a loss of aircraft control.

ACN: 1791837 *(21 of 50)*

Synopsis

Pilot reported a runaway stabilizer trim system and elected to air turn back and make a precautionary emergency landing.

ACN: 1789931 *(22 of 50)*

Synopsis

B737 First Officer reported encountering wake turbulence on descent into LAX in trail of a B777.

ACN: 1788543 *(23 of 50)*

Synopsis

EMB 170/175 flight crew reported a momentary loss of control and altitude when the autothrottles (AT) went to idle thrust just after takeoff. The crew disconnected the AT, regained control, and continued the flight.

ACN: 1788331 *(24 of 50)*

Synopsis

G100 Captain reported on landing loss of brakes and steering resulted in runway excursion.

ACN: 1786540 *(25 of 50)*

Synopsis

Falcon 900 pilot reported that a fuel computer failed followed by an out of trim advisory message. They disengaged the autopilot to respond to the problems and encountered turbulence that caused an altitude excursion.

ACN: 1786039 *(26 of 50)*

Synopsis

EMB-145 F/irst Officer reported encountering wake turbulence on approach to CLT that caused a "hard roll" and disconnected the autopilot.

ACN: 1784677 *(27 of 50)*

Synopsis

GIV Captain reported encountering wake turbulence descending out of FL400 from preceding A320, resulting in 45 degree bank in both directions.

ACN: 1784352 *(28 of 50)*

Synopsis

Pilot flying Honda Jet reported trim problems during climb out.

ACN: 1781782 *(29 of 50)*

Synopsis

B777 flight crew reported uncommanded asymmetric spoiler deployment in flight.

ACN: 1779802 *(30 of 50)*

Synopsis

Global 5000 (Bombardier) Captain reported a malfunction of the Automatic Flight Control System, which resulted in uncontrollable Dutch Roll until arriving at a lower altitude.

ACN: 1779456 *(31 of 50)*

Synopsis

Air carrier flight crew reported the takeoff was rejected after the aircraft drifted to the right and was not responding to rudder inputs.

ACN: 1778751 *(32 of 50)*

Synopsis

B757 Captain reported a runaway stabilizer trim issue after maintenance.

ACN: 1778455 *(33 of 50)*

Synopsis

B737 flight crew reported uncommanded aircraft movement occurred following pushback without brakes set.

ACN: 1774832 *(34 of 50)*

Synopsis

Captain reported an uncontrollable Mach Trim condition that caused an Air Turn Back and precautionary emergency landing.

ACN: 1769582 *(35 of 50)*

Synopsis

Air carrier flight crew flying CRJ-700 aircraft reported flap malfunction on approach.

ACN: 1768695 *(36 of 50)*

Synopsis

EMB flight crew reported two wake turbulence encounters on successive approaches to IAD.

ACN: 1764880 *(37 of 50)*

Synopsis

Large Transport Captain reported a Widebody Transport crossed runway he was departing resulted in momentary loss of control due to the Widebody Transport's jet blast.

ACN: 1762475 *(38 of 50)*

Synopsis

B737 flight crew reported encountering wake turbulence on arrival into ORD in trail of a B777.

ACN: 1762408 *(39 of 50)*

Synopsis

CE-560 flight crew reported taking evasive action to avoid a collision with another aircraft.

ACN: 1761771 *(40 of 50)*

Synopsis

B787 flight crew reported high speed RTO.

ACN: 1754221 *(41 of 50)*

Synopsis

E175 Captain reported nosewheel steering failed on touchdown, resulting in Captain disconnecting nosewheel steering and using rudder pedals to regain aircraft control and exiting the active runway.

ACN: 1754179 *(42 of 50)*

Synopsis

CRJ-900 First Officer reported encountering wake turbulence on arrival into CLT 10 miles in trail of an A320 that resulted in an uncommanded 30-40 degree roll.

ACN: 1751202 *(43 of 50)*

Synopsis

Flight crew reported an uncommanded power rollback in the right engine, which resulted in an inflight shutdown and a subsequent landing.

ACN: 1748350 *(44 of 50)*

Synopsis

Pilots reported an uncommanded yaw at Vr.

ACN: 1747194 *(45 of 50)*

Synopsis

EMB-505 flight crew reported total loss of electrical power caused multiple systems failures resulting in a diversion and landing.

ACN: 1743208 *(46 of 50)*

Synopsis

B737 Captain reported encountering an uncommanded roll during takeoff climbout.

ACN: 1742865 *(47 of 50)*

Synopsis

B737NG First Officer reported encountering a dust devil shortly after takeoff that resulted in an uncommanded aggressive roll to the left.

ACN: 1739339 *(48 of 50)*

Synopsis

B747-400 flight crew reported continuing to use an autopilot after it had previously triggered an EICAS warning resulting in altitude and heading clearance deviations.

ACN: 1735588 *(49 of 50)*

Synopsis

B737 Captain reported an air return due to a runaway trim and speed trim failure.

ACN: 1735208 *(50 of 50)*

Synopsis

E170 flight crew reported that a possible wake turbulence encounter resulted in an unstabilized approach and a go around.

Report Narratives

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.

Time / Day

Date : 202109

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

ASRS Report Number.Accession Number : 1837579

Events

Anomaly.Ground Event / Encounter : Weather / Turbulence

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

On takeoff roll, Runway XX, with gusty left crosswinds, the aircraft suddenly and without warning, "skidded" left. Corrected the ground track and continued the takeoff without further incident. FAs (Flight Attendants) reported being aggressively shoved sideways in their seats.

Synopsis

B737-800 Captain reported the aircraft suddenly skidded to the left during takeoff roll due to gusty crosswinds requiring corrective input.

Time / Day

Date : 202108

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : OAK.Airport

State Reference : CA

Altitude.AGL.Single Value : 700

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 700

Aircraft : 1

Reference : X

ATC / Advisory.Tower : OAK

Aircraft Operator : Corporate

Make Model Name : Light Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use.SID : CNDEL FOUR

Airspace.Class C : OAK

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : OAK

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class C : OAK

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Other
Experience.Flight Crew.Total : 9000
Experience.Flight Crew.Last 90 Days : 50
Experience.Flight Crew.Type : 5500
ASRS Report Number.Accession Number : 1831728
Human Factors : Situational Awareness
Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
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 : Regained Aircraft Control
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

I was preparing to conduct a Part 91 IFR flight from OAK. My clearance was Runway 30, CNDEL4 Departure EBAYE AVE EHF and to climb via the SID. Upon reaching Runway 30, I was holding on Taxiway Whiskey behind an A321. After the A321 started its takeoff roll, I watched and noted the point at which it lifted off. At the same time I was instructed to "Line up and wait". After what I thought to be a very short time, less than a minute from lining up, I was cleared for takeoff with a caution warning for wake turbulence. Upon reaching Vr and prior to the A321's rotation point, I rotated and began my initial climb. I had 1900 ft set in my Altitude Select as I was to cross LECHE at or below 2,000 ft, on a heading of 296 degrees which I had set on my DG's bug. At approximately 600 ft I engaged the autopilot. Almost immediately after entering IMC conditions at approximately 700 ft, I entered very heavy turbulence. I disengaged the autopilot at which time the plane entered an un-commanded roll to the left. I tried to recover but the plane was shaking very violently and kept wanting to violently roll to the left between 35 to 40 degrees of bank angle. The plane was really not responding to my control inputs, at least not according to my flight director. I really had no idea what was happening at the time and was very startled. At first I thought I might have a control surface failure. Then I realized that I must have flown through and was now within the A321 wake vortices. I had a very hard time controlling the aircraft. I was worried if I could not keep the plane out of an upset condition, I was way too low for a successful recovery. I could also hear that my passengers were very uncomfortable. At this point, I just reverted to flying 101, aviate, navigate, communicate. I hit my Takeoff/Go-Around switch which also disengaged the yaw damper and put my command bars at a 10 degree nose up and wings level command. At that point I was just trying to concentrate on putting the airplane symbol into the command bars and just keep wings level. All the while keeping my eye on my TCAS for

any aircraft near or around me. (I never got one traffic warning or alert during this whole event). At some point a controller came on and began giving me vectors. I had not yet talked to the controllers or advised them of my situation as I had not gotten to the **"communicate"** part yet. I was also told to squawk my assigned transponder code. I had selected the code prior to taxi but failed to enter it. At approximately 1800 feet I began to try to level the airplane but was having a hard time doing so. I did not want to push down too hard and put the plane in an excessive negative G situation. I think I passed the max altitude by 150 ft but, immediately corrected to 1800 ft. When I was switched to the next frequency I was still attempting to regain my composure and just follow the controller's instructions. The turbulence completely disappeared out of about 2,500 feet. Out of 10,000 feet, I cancelled IFR and continued VFR with flight following. The rest of the flight was uneventful until I was advised by NorCal of a possible pilot deviation and was given a phone number to call upon landing. How the problem arose: Inadvertent flight into wake turbulence. Contributing Factors: Too early release behind a heavy aircraft. IMC Conditions. Failure to ask for a possible short delay to my takeoff clearance due to wake turbulence. How it was discovered: Difficulty in controlling the aircraft due to violent and uncommanded aircraft attitudes. Corrective Actions: Maintain wings level attitude. Follow ATC Instructions. Perceptions: Fear of possible loss of control in IMC conditions and very low altitude for recovery. Judgements: Just fly the plane. Aviate, Navigate, Communicate. Decisions: Do whatever it takes to keep wings level attitude. Factors affecting the quality of human performance: The startle effect. Actions or Inactions: Have hand written, "Enter Squawk Code", in my Pre-Taxi Checklist. Just did what I could to fly my plane out of an inadvertent but bad situation.

Synopsis

Light Transport Corporate Pilot reported encountering wake turbulence departing OAK in trail of an A321.

Time / Day

Date : 202108

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Other

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B777-200

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Takeoff / Launch

Component

Aircraft Component : Nosewheel Steering

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)

ASRS Report Number.Accession Number : 1829597

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

Result.Flight Crew : Rejected Takeoff

Result.Flight Crew : Returned To Gate

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

During initial takeoff roll, at takeoff thrust setting and less than 30 kts, aircraft began uncommanded hard left turn. Initiated slow speed reject, tried to counter with full right rudder and full right nose wheel steering. Tiller was binding, only 10 degrees of travel available as if fighting left tiller inputs. Continued manual braking to a full stop with the aircraft nose close to 45 degrees left of centerline with the aircraft fully blocking taxiway. We informed Tower of the rejected takeoff and that we required a tow back to the ramp. Suspected nose wheel steering malfunction

Synopsis

B777 Captain reported rejecting the takeoff and returning to the gate when the aircraft initiated a hard left turn early in the takeoff roll.

Time / Day

Date : 202108

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : MD-11

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class C : ZZZZ

Component : 1

Aircraft Component : FCC (Flight Control Computer)

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Flight Director

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 : 1829214

Human Factors : Troubleshooting

Human Factors : Time Pressure

Human Factors : Communication Breakdown

Human Factors : Situational Awareness
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

Descending through approx 12-13,000 feet for landing at ZZZZ, my FMS timed out as they occasionally do. Gave it a few moments to catch up and then selected the FMC1 prompt in the upper left hand corner of the FMC. Not only did it not reset, there was no standby option listed and I then noticed my First Officer's FMC had also lost all data. On a descent into ZZZZ at about 10,000 feet I decided it would be best if I assumed control of the airplane and we did a positive transfer of control. At about the same time I glanced over at the approach chart for ILS XXR went to the NAV page and manually entered the frequency and inbound course for ILS runway XXR. We had a Level 1 alert to set field altitude manually and I tasked that duty to my First Officer. I also said I had the radios at the time. I called ATC and informed them we had lost most of our normal navigation equipment, that we would be unable to proceed directly to any fix and that I would need vectors to join the runway XXR localizer. Passing 10,000 feet I would estimate we were approx 20-25 miles from the field. Several times the flight director was commanding directives that did not comply with our ATC directives so I was forced to turn it off as it was a distraction. The autothrottles also were not responding in an appropriate manner either and rather than trying to fight them I disconnected them as well. Conditions at the field were day VMC. On a vector and once cleared for the approach approach mode armed although I doubt it did any good I looked for the localizer to come alive and when it did I attempted to track it manually. There were a couple S turns as I was in real time having to adjust my scan away from looking for a flight director and towards just a localizer needle and a heading and trying to bracket it. Things became more stable as we continued down the localizer until we had the runway in sight still at many thousands of feet above the ground I transitioned to line up visually and then cross checking my localizer it showed right of course and I realized the piece of pavement many miles in front of me was the taxiway not the runway and shifted back to the left onto localizer at I would estimate

2,500-3,000 ft AGL. We probably should have asked for a visual approach at that time but we were too busy to even think of it. Now hand flying the airplane fully manually with no automation nor flight director assistance at around 2,000-2,500 feet I would estimate I leveled the airplane as the glide slope was approx 1 dot below us to join it. I did not even look at the approach plate to see where intercept altitude was as we were in visual conditions and I was too focused on maintaining manual aircraft control to be distracted looking away from the panel. ATC did ask us several times during the approach are you stabilized. We had the situation under control so I told me First Officer tell her yes. We were fully configured on glide slope and localizer with landing checklist complete by 1,000 feet AGL (actual more like 1,500-2,000 ft). There was a high speed foot on the airspeed indicator but no low speed foot. Based upon our landing weight and my prior experience in the airplane I flew the approach at 165 knots flaps 35. The approach and landing from 1000 feet AGL to touchdown was uneventful. This airplane had recent prior multiple flight control computer malfunctions that caused a prior crew to have a sudden pitch down moment according to the prior Captain. My goal was to get it on the ground as soon as it was safely possible and try to separate the automation from control of the aircraft to a reasonable extent. When we lost all our navigation data from both FMS so close to the airfield and with day VMC conditions at the field and my First Officer focusing on another checklist and given the recent history of this airplane, I decided the safest course was to revert back to old school flying and not waste time trying to manage the problem through running an extended Dual FMS Loss checklist and focus our efforts on getting the airplane on the ground. The prior day I witnessed two aircraft mechanics on this same jet in conflict over whether the airplane should be returned to service or not. One mechanic thought there was only 1 flight control computer having issues the other thought both computers were malfunctioning. One mechanic said the airplane was AOG to me 2 times. After that I went into the cockpit to observe their trouble shooting. One mechanic was simply trying to clear the fault in the CFDS (Centralized Fault Display System) the other wanted to know why and wanted more time to diagnose it. When one mechanic said to me the airplane is AOG a 3rd time I took the extraordinary step of calling the Duty Officer and telling him I was not crewing this airplane until the mechanics were given some time to troubleshoot and requested we be placed into rest. After minimum rest we came back to the jet and I spoke with the mechanic that was objecting to the return to service the previous night and he now seemed comfortable releasing the jet to fly. I personally witnessed one mechanic trying to pressure another to push the jet back on the line and I commend the mechanic who resisted. I don't know what happened after we left the airplane to then make him comfortable having it signed off, but I was told there would be 2 replacement flight control computers sent to this jet after I left it. Not sure if that actually occurred. I know we have a business to run but one of the mechanics told me at least one of the flight control computer issues was a repeat write up. Maybe we need to give more time and attention to issues that are repeatedly written up with a common problem source.

Synopsis

MD-11 Captain reported flight control computer issues during approach resulted in loss of all autoflight capability. Pilot also reported the aircraft had been previously refused due to flight control computer malfunctions.

Time / Day

Date : 202107

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ATL.Airport

State Reference : GA

Altitude.MSL.Single Value : 8000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : A80

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 Approach

Airspace.Class B : ATL

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : A80

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class B : ATL

Person

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 60

ASRS Report Number.Accession Number : 1828935

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

[We] encountered two wake turbulence events while on the downwind at 8,000 feet with Atlanta approach control. First Officer maintained control of the aircraft on both occurrences. After the second sudden right roll we observed the large aircraft we were in trail of and now was below our altitude. We realized the roll was likely not associated with a shear event from the cell nearby. We notified ATC. I would not classify either event as a severe wake turbulence event. There was no "bank angle" aural. Perhaps ATC separation issue.

Synopsis

CRJ-200 Captain reported encountering wake turbulence on arrival into ATL in trail of a large transport.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Light : Daylight

Aircraft

Reference : X

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 : Takeoff / Launch

Route In Use : Vectors

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Nose Gear Wheel

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Hydraulic Main 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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 182

ASRS Report Number.Accession Number : 1827225

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 : 60
Experience.Flight Crew.Type : 2435
ASRS Report Number.Accession Number : 1826293

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

[There was a] nose gear tire issue followed by a loss of System A Hydraulics. We were flying Flight XXXX from ZZZ to ZZZ1 on (date). As we were rolling down the runway, we heard a loud bang from the nose gear area. It went away as quickly as it arrived, engine parameters were normal as well as directional control. After the takeoff, we talked about what it could have been. During the climb to our cruising altitude, we decided to call ZZZ Tower back and ask them to inspect Runway XR for any clues to what had happened during our takeoff roll. It took a while before we got an update from ZZZ Tower. They had found a two feet by two piece of rubber. We immediately contacted Dispatch and Maintenance, and we discussed various options. We were now in cruise and still bound for ZZZ1, when all of sudden the Number 1 Eng Hyd A LOW PRESSURE light started to come on and off a few times. We got the QRH Checklist and ran the HYDRAULIC PUMP LOW PRESSURE. I looked down on the instrument panel and noticed the System A Hydraulics quantity was down in the low 20's percent. We could watch that number was dropping fast. We now went quickly over to another chapter in the QRH, to LOSS OF SYSTEM A. We also [requested priority landing] with Center, and they immediately gave us direct to ZZZ1 airport. We determined that it was likely that a possibly piece of rubber had hit some of the Hydraulic lines. We quickly updated Dispatch about our loss of Hydraulic A quantity, and that we had [requested priority landing]. Dispatch gave us the Landing Distance information data, and we compared it to our own. We were all in agreement to continue and land in ZZZ1. We informed our Flight Attendants about our situation and what they could expect from our landing. We flew overhead ZZZ1 airport, and manually extended our landing gear per QRH. After completing all the steps in the QRH, we lined up with Runway XXL and landed. I immediately noticed the tiller was «locked» and unusable upon

landing, and had to use rudder and differential braking to get back on center line. Both NORM and ALT nose wheel steering were both unavailable. We elected to stop the aircraft on the runway, and asked the Fire Trucks to visually inspect the aircraft from the outside. After getting the OK from them, we had Company Maintenance meet us on the runway with a tug, and to tow us clear of the runway. We had just cleared [Runway] XXL when the tow bar snapped, and they had to get another one. Once we got the second one, we were towed over to Gate X where our passengers were able to deplane.

Narrative: 2

Departed ZZZ Runway XR. On takeoff roll, prior to rotation, a noise was heard similar to a hand slap on the front of the aircraft. Takeoff was continued with no adverse indications. As we continued to climb, the Captain and I assessed the probable cause of the noise. ZZZ Tower was advised of possible FOD on the runway. Before we were out of range of ZZZ Tower, we inquired for any findings of the FOD. Tower advised a piece of tire rubber was found on the runway. Still unsure whether the rubber was from our aircraft or a piece we hit on takeoff roll, we continued the assessment. Dispatch was brought into the loop and we all agreed to continue. As we continued to discuss the current situation, the #1 HYD LOW PRESSURE light illuminated and we ran the HYDRAULIC PUMP LOW PRESSURE QRH Checklist. SYSTEM A HYDRAULIC quantity was noted to be around 20 percent. SYSTEM A HYDRAULIC quantity continued to drop. LOSS OF SYSTEM A QRH Checklist was started. [After] reassessment of the loss of HYDRAULIC SYSTEM A and the noise heard at takeoff, [they] led us to believe that we had blown a tire which had damaged the hydraulics. A [priority landing was requested] with Center and direct ZZZ1 was issued. We continued discussions with Dispatch, as well as informed the Flight Attendants of our current conditions, plans and what to expect on arrival in ZZZ1. All went as planned with the completion of the LOSS OF SYSTEM A Checklist and landing on Runway XXL in ZZZ1. The only unexpected item on landing was no nose wheel steering on landing. Both NORM and ALT nose wheel steering was inoperative upon landing so we were unable to exit runway. CFR (Crash Fire Rescue) met the aircraft on the runway to assist. Aircraft was towed to the gate from the runway.

Synopsis

B737-700 Flight Crew reported hearing a loud bang from the nose gear area during the takeoff roll. In flight the hydraulic system malfunctioned and the crew performed a manual gear extension prior to landing.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1500

Environment

Light : Dawn

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Airspace.Class B : ZZZ

Component

Aircraft Component : Wing Flight Control Surface

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

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 : 164

Experience.Flight Crew.Type : 17600

ASRS Report Number.Accession Number : 1827224

Human Factors : Human-Machine Interface

Human Factors : Troubleshooting

Human Factors : Confusion

Events

Anomaly.Aircraft Equipment Problem : Critical

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

Detector.Person : Flight Crew

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Departing Runway XXR at ZZZ over the shoreline at approximately 1,500 feet AGL, the Pilot Flying (PF) began a required turn to the left for heading of 210. The PF immediately verbalized a flight control abnormality stating that he is feeling resistance in the control wheel and that it couldn't be turned more than about half-scale deflection to the left, as if it was hitting the designed maximum stop. We continued the climb and the PF asked the Pilot Monitoring (PM) to take controls to see if the resistance was the same on both sides. The PM took the controls and agreed that the resistance was the same on both sides. Neither the PF nor the PM tried to force the control wheel beyond the point of resistance since the plane was still controllable in the normal range of operation up to 30 degrees angle of bank. The PM pulled out the QRH section 9.8 Jammed or Restricted Flight Controls. The PF continued to fly the SID as the PM ran the QRH and discussed the situation. The first thing we noticed about the QRH was that Step 4 required the use of Maximum Force to overpower a restricted system; however, this step did not seem to apply to us because the aircraft was controllable in the normal flight regime. This step introduced some doubt and confusion with the crew. We agreed that we didn't have a jam, but the maximum control deflection was restricted. Upon reaching Step 7, we had to decide whether the controls were normal or not normal. This step also introduced some confusion because we reasoned that since we both were able to make right and left turns under normal conditions up to 30 degrees angle of bank, the controls were for all intents and purposes normal. However, we still had the restriction, which gave us concern, and that full control wheel deflection was not normal. At this point, the crew decided to contact Maintenance and Dispatch on ARINC VHF radio and use all available resources to discuss the situation. The radios were very scratchy and there was a lot of feedback when the company keyed their microphones. All parties agreed that QRH 9.8 was the appropriate checklist for the situation, but the decision to continue or divert to the nearest suitable airport was still to be determined. As a crew, we felt that we were in a gray area between normal and not-normal flight controls but relayed to Maintenance that we felt comfortable continuing on to our destination. All parties agreed. En route, we continued to discuss the situation and it occurred to us that even though we could maneuver the plane normally, it was unknown whether an upset recovery might be diminished or not in the event of an encounter with wake turbulence, jet wash, or a rudder hard-over event. Such a condition might require Step 4 of the QRH to overpower the restriction with both Pilots. As a precaution, the crew asked ATC to keep the aircraft clear of potential wake turbulence due to restricted flight controls but that we were not declaring an emergency at this time. On final approach in full configuration, the PF experienced some ground convective turbulence and verbalized that he hit the resistance once during the approach as he was trying to counter the turbulence. This was unexpected, but the crew was able to land the aircraft safely.

Synopsis

B737-700 flight crew reported a flight control malfunction shortly after takeoff.

Time / Day

Date : 202107

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class B : ZZZ

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 : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1822078

Events

Anomaly.Aircraft Equipment Problem : Critical

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

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result.General : Flight Cancelled / Delayed

Result.General : Maintenance Action

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Upon receiving approach clearance for the ZZZZZ XX Approach, [the] FO (First Officer) disengaged autopilot and began [a] gradual descent on approach while configuring to Flaps 20 and slowing to 170 kt. As I read back approach clearance to ATC, we crossed ZZZZZ1 and I heard the trim clacker activate. I thought that this was [the] FO adjusting to nose down trim as we were descending and configuring. After a few seconds, I asked if he was commanding the abnormally long trim down and he replied that he wasn't. The trim then stopped and appeared to remain stable. It then started a nose-up motion uncommanded. I verified that [the] FO did not inadvertently have his finger on the trim switch, and I [was] certain that mine was not. I then realized that this appeared to be a stab trim malfunction and went through and verbalized the immediate action items. Upon successfully disconnecting the stab and Mach trim, I asked [the] FO if he needed assistance in adding extra pressure on the controls and he informed me that they felt fine, just marginally heavier than normal. I elected to continue the approach as the uncommanded action was no longer occurring and I determined that an approach to landing would have been the safer, more stable option over quickly changing configuration and executing a go-around in a nose-down trim. We continued and landed without further incident. I sent Dispatch a text informing them of the event, and contacted Maintenance Control following entering a discrepancy in the aircraft maintenance logbook.

Synopsis

CRJ-700 Captain reported a trim malfunction on descent and followed QRH procedures to land successfully.

Time / Day

Date : 202107

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZTL.ARTCC

State Reference : GA

Altitude.MSL.Single Value : 30000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZTL

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 A : ZTL

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZTL

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 : Descent

Airspace.Class A : ZTL

Aircraft : 3

Reference : Z

ATC / Advisory.Center : ZTL

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class A : ZTL

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 150
ASRS Report Number.Accession Number : 1821671
Analyst Callback : Completed

Events

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.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We experienced the wake turbulence encounter on the descent through FL300, initial uncommanded roll 15 to 20 deg left followed by 25 to 30 deg to the right, rolled out and escaped from the encounter. We asked Center what type of aircraft we were flying behind. The reply was a Boeing 757, which we had on screen TCAS at about 10 miles ahead of us. However there was another aircraft farther ahead of the 757 that we could also see on screen. The Center Controller allowed us to take a heading off course to remain clear of the threat. However we ran into the wake again in the vicinity of GLAVN, and was not as much of a problem during that encounter. and I thought it was strange I have never had a 757 wake encounter roll the aircraft like that. Shortly after we were on approach control into Atlanta airport we discovered that the 757 was what appeared to be slightly less than 10 miles in trail of a heavy B787. I find it unusual to be in that type of upset due to 757 wake turbulence. We followed them all the time. I think it could be possible that the 757 was so close to the preceding aircraft that the heavy aircraft's wake was not a problem for the 757, but became one for us. Given the current conditions the winds were pushing the wake in our direction [so] obviously more spacing would've helped. I don't mind a vector off course. I would greatly appreciate more spacing behind heavier aircraft.

Callback: 1

Reporter stated he was surprised at the intensity of the wake from the preceding B757.

Synopsis

CRJ-900 Captain reported encountering wake turbulence on descent into ATL in trail of a B757, which was following of a Heavy B787.

Time / Day

Date : 202107

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Environment

Flight Conditions : IMC

Light : Dawn

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : MD-11

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Climb

Flight Phase : Initial Climb

Route In Use : Vectors

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Leading Edge Slat

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 : 1821354

Human Factors : Troubleshooting

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

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

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Relief Pilot
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1821353
Human Factors : Troubleshooting
Human Factors : Communication Breakdown
Human Factors : Distraction
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Fuel Issue
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

During an 18-hour duty day with multiple discrepancies, write-ups, MEL's, a rejected takeoff, a turnback to the gate, and other issues, we departed Runway XXL at ZZZ for the ZZZZ RNAV departure. We had just finished 5 hours on the ground dealing with a hydraulic 3 elevator shutoff valve and inoperative 3-2 non-reversible motor pump, and had briefed the possibility of an associated flight control problem on departure. During the initial climb, we were instructed to maintain 250 kts and acknowledged. Our speed did not require a high-speed climb. Repeatedly during this event (prior to slat retraction, and intermittently all the way to final cruise altitude), we got an amber-boxed engine 1

compressor vibration indication, averaging 4.5 units of vibration. This required retarding power on engine 1 (up to one knob-width, and up to 7-10% N1 reduction), to bring the vibration out of the amber range. When reaching 3,000 feet and just beyond ZZZZ1 on the ZZZZ, we began the clean-up process on schedule, and upon slat retraction, the airplane rolled left. I countered with considerable right aileron. The strong rolling moment occurred coincident with slat retraction. Shortly after, we got a master caution and two level 1 EAD messages (SEL LSAS LOB OFF, SEL LSAS RIB OFF), for which I called for the [Relief Pilot] and FO (First Officer) to address and confirm before selecting off. As that occurred, we got a caution light with a lateral fuel imbalance (LAT FUEL UNBAL), which occurred three more times (four total), along with a 2,000 kg drop in fuel quantity (repeat write-up). While focused on the control issue, I allowed airspeed to increase briefly above the 250 kts limit, estimated to be 270 kts, before decreasing speed again to maintain 250 kts to 10,000 feet ATC did not mention the overspeed, but the [Relief Pilot] did call "airspeed." The ZZZZ departure includes a restriction to remain below 3,000 until ZZZZ1, then a climb to 15,000 or above, by ZZZZ. My priority was addressing the control issue, but adjusted pitch per the flight director to return to 250 kts. No further variations from the speed schedule occurred during the remainder of the climb, or flight. Additional distractions occurring in series (except the engine vibration indication, which occurred intermittently throughout the event), one after the other, did not cause the airspeed excursion, but certainly worked to divert attention, and increase cockpit workload. I became aware of the amber boxed vibration indication about the time we entered the 1100 ft. ceiling, departing ZZZ. I became aware of the rolling moment immediately upon slat retraction, and the airspeed excursion upon the "airspeed" call by the [Relief Pilot]. I did note the pitch attitude below that commanded by the flight director, and noted speed increasing, but the intent was to increase airspeed through slat retract speed to 250, and I focused on the immediate concern, the rolling moment. I did not notice the speed exceed 250 until the [Relief Pilot] brought it to the crew attention with the "airspeed" call. At that time, I observed approximately 270 on the airspeed indication, and increased pitch to the flight director pitch bar to reduce speed. The FO was occupied retracting slats, and performing the follow-up flow associated with my call, "slats retract, after takeoff checklist." Aside from being distracted by the rolling moment, the illumination of the amber compressor vibration indication on engine 1, subsequent LSAS failure, and fuel imbalance were contributing errors to detection, and detection was voiced by the [Relief Pilot]. I became aware of the LSAS issue, and the lateral fuel imbalance issues, with illumination of the master caution light. The LSAS issue caused loss of autopilot 2. I delayed autopilot engagement until the series of issues were addressed, given that they included flight control and subsequent autopilot engagement problems. Once those were addressed and we were outside the busier airspace, the enroute climb and remainder of the flight until descent, were largely uneventful, except for continued monitoring and adjusting of engine 1 throttle position to prevent high compressor vibration. The period of time between detection of the event and the filing of this report is accounted by the end of a long duty day, the necessity of filing another report on the previous leg rejected takeoff in ZZZ1, and then flying home. We had briefed the possibility of a flight control problem, given the return to the gate for the system 3 Hydraulic elevator shutoff valve, and associated 3-2 non-reversible motor pump. The fix on the ramp had been to add another two gallons of fluid to system three, with the explanation that "maybe the gauge is just reading high." I did not find that explanation satisfactory, but following an engine run in which the problem did not reoccur, maintenance was satisfied, the write-up was signed off, and we departed. About the time we entered the cloud layer, the amber-boxed engine 1 compressor vibration alert illuminated, and power was reduced on engine 1 slightly (up to one knob width) to reduce the vibration indication. This indication came and went, as we climbed, necessitating further slight reductions in power. The flight control problem which occurred after departure (strong left rolling moment, coincident with slat retraction)

did not match the potential problem (possible elevator shutoff valve actuation and NRMP malfunction), but did merit attention, during which time I let the airspeed slip. I focused on leveling the wings and reduced angle of attack. I should have maintained pitch with the flight director, but divided the task of roll and pitch to prioritize directional control, while addressing the uncommanded rolling moment. Additional subsequent illumination of the master caution with the LSAS failure, and the lateral fuel imbalance level 2 warning and master caution illumination, were peripheral distractions, as was the engine vibration issue. I was hand flying at the time, and believe it was better to be hand-flying with the potential to feel a problem, than have it masked by the autopilot. Had the autopilot been flying, the speed excursion would likely not have occurred, but we may not have seen or felt the rolling moment as much, if at all. I did feel a shift in the controls when the LSAS was selected off, but couldn't say afterward exactly what I'd felt. In retrospect, the best course would have been to focus on the flight director while addressing the roll. The natural tendency when experiencing that event (rolling moment), for me, was to decrease angle of attack slightly, which I did, which resulted in the excess speed as we accelerated while cleaning up. The rolling moment was caused, I am certain, by asymmetric slat retraction; the degree of asymmetry I couldn't say, but it was significant in feel and the amount of aileron deflection needed to counter the roll. There was no buffet. It was significant enough that on arrival in the ZZZ2 area, we briefed the possibility of the same event when extending slats, and I hand flew the descent and arrival, configuring slats early. A rolling moment did occur, but not to the same degree as departing ZZZ. (We also experienced a strong rolling motion that resulted in heading change, with autopilot engaged, when deploying speed brakes, and observed speed brake asymmetry on the configuration synoptic page, and determined not to use speed brakes further on the subsequent ZZZ2 arrival). These aircraft discrepancies, while important, should not have detracted from the basic task of flying the airplane, or maintaining the assigned/required 250 kts. on departure from ZZZ. Additionally, the subsequent illumination of the master caution light several times with LSAS failure and lateral fuel imbalance issues served as peripheral distractions. The tendency for engine 1 compressor vibration to show high with amber-boxed indication, repeatedly, and to require the engine power to be retarded repeatedly, was also a distraction. Retarding power on the no. 1 engine further caused a slight yawing motion, and subsequent potential rolling moment. Flying all night and then a five hours of trouble shooting on the ramp in a hot airplane didn't help, prior to this takeoff. My reaction to the high compressor vibration indication on engine 1 was to retard the No. 1 throttle slightly; the problem was known and a recurring one which had become a repeat write-up. My reaction to the "airspeed" call was to note the speed and increase pitch to the flight director pitch bar, after observing airspeed in excess of 250 kts. I followed the flight director command while re-acquiring and holding 250 kts, and flying the departure. My reaction to the subsequent master caution illumination was to direct the First Officer and [Relief Pilot] to work together, specifically on the LSAS issue, because with one FCC affected, I wanted confirmation on selecting the correct switches off. The lateral fuel level 2 warning was familiar, as it keeps happening and keeps being written up on this airplane. On arrival, I wrote it up again. The engine vibration was a repeat write-up that was squawked multiple times, and was subsequently written up again on arrival in ZZZ2. On arrival in ZZZ2, the [Relief Pilot] asked if I thought we should file an report, and I advised that yes, I thought it prudent. I advised the crew to file what they saw, individually. After that, I was occupied discussing multiple discrepancies and write-ups with Maintenance, and with the incoming crew as they arrived. It was a very long night and day, and a full duty day. We had a rejected takeoff, ATC directed, at ZZZ1 on the first leg, and I had to write a report for that, after arriving at the hotel. I made that report, and the next day flew home, where I slept for an extended period. This report is submitted outside the 24-hour window, when I had rested adequately to be awake to write it. I did write up the flight control issues, to be addressed by Company Maintenance Personnel. My

actions were my own, and my responsibility. I was the Pilot Flying, and the Captain, and I was hand flying, and regardless of distractions, should not have allowed the airspeed excursion to occur. That said, we should not be seeing so many discrepancies and issues, especially on one flight (let alone one phase of flight simultaneously or subsequently in close succession, and especially not items which have been written up multiple times). These issues ranged from multiple flight control issues to fuel system indications and issues, engine vibration, and even a TCAS fail during the initial climb. The subsequent issues that occurred on the flight including multiple items that were repeat write ups, including a level 2 fuel lateral fuel imbalance several times during the departure. The LSAS failure is also a repeat write-up. I do not include these as excuses for failing to maintain the airspeed at 250 kts, as that was my responsibility, but these are certainly things which do not need to be happening on every flight, as a regular part of flight operations, and this can be fixed. So far as preventing this specific event from occurring again, my counsel is to point my finger at myself and what I would say to anyone else: "fly the damn airplane." I need look no farther than myself as the reason for failing to maintain 250 kts as cleared, and as required by the regulation, and as the captain, the buck stops with me. We can prevent it, in my cockpit, by my not allowing it to occur again. The question will arise why the autopilot was not engaged earlier in the series of events. I had briefed a hand-flown departure. The engine vibration, while a distraction, did not rise to the level of needing automated intervention, and was familiar, having occurred previously and been a repeat write-up. The rolling moment was not something I wanted masked by engaging the autopilot, and the LSAS failure on the heels of the slat retraction impacted autopilot use. At that point we were above the marine layer and climbing in the clear, flight control was good, speed restored, and the problems in hand between the FO and [Relief Pilot]. None of the events warranted a return to land at ZZZ3, and we continued the climb away from busier airspace. We were light enough that the power reduction on engine 1 did not hinder our ability to eventually reach FL390, though with each step climb, reduced power on engine 1 was required, due to compressor vibration indications. I did not see secondary engine instrument indications suggesting a complication or a return, and the indications matched what has been seen on previously flights, written up, and signed off each time. Transitioning to automation was neither necessary, nor in my opinion, the right choice at the time of occurrence, and the airspeed overage was simply due to my momentary focus on the rolling moment. The issue of this report is the airspeed above 250, and the other events discussed are peripheral, to establish the setting.

Narrative: 2

After getting handed off to approach ATC instructed us to limit our speed to 250 kts. However because of multiple issues going on and the flight deck our speed had increased to 300 kts. Once I called airspeed the Captain and then proceeded to reduce the speed to 250. Use auto pilot in airspace in which is busy and cockpit work load is heavy. Have a proper scan and use auto pilot when workload is heavy.

Synopsis

MD11 flight crew reported multiple systems failures that required attention and distracted them, resulting in exceeding an airspeed limitation.

Time / Day

Date : 202107

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.MSL.Single Value : 2600

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Light : Night

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : MD-11

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Descent

Component

Aircraft Component : Stall Protection 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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1820448

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Weather / Turbulence
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 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

Requested priority for flight control malfunction on descent into ZZZZ. For approximately 5 minutes I was unable to comply with assigned altitude and course while regaining control of the aircraft. We received 3-4 **"STAB OUT OF TRIM Level 2"** alerts. Alert would be presented for 15-20 seconds, disappear, then return after a minute or two. Reviewed stab out of trim level 2 in QRH. Late in the descent, roughly simultaneously, AP1 (Autopilot 1) failed to capture final approach altitude of 2,600 feet, descending and FO (First Officer) **reported LSAS (Longitudinal Stability Augmentation System) "ALL FAIL"** alert, which I was unable to confirm as I was simultaneously manually arresting the uncommanded descent, close to ground, IFR, night in moderate turbulence and rain, slow, configure, determine what if any stab trim was available, and navigate the aircraft to final. Disconnected AP, slowed and configured the aircraft with FCP speed commands and the pedestal long trim handles. Flew the rest of the ILS XXL manually in approach/ land. Stopped on taxiway for inspection by fire personnel, nothing noted, taxi to gate.

Synopsis

Captain reported an LSAS system failure caused control issues on descent and approach to landing resulting in a precautionary landing.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

ATC / Advisory.Tower : ORD

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 : Landing

Airspace.Class B : ORD

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 : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1817242

Human Factors : Other / Unknown

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 : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1817212

Human Factors : Other / Unknown

Events

Anomaly.ATC Issue : All Types

Anomaly.Ground Event / Encounter : Jet Blast

Anomaly.Inflight Event / Encounter : Other / Unknown

Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control

Assessments

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

Narrative: 1

On approach into [Runway] [27C] in Chicago it was by all accounts a normal day. A storm had passed about 2 hours prior giving way to the benign conditions usually experienced after the passing of a storm. The wind was hardly noticeable I had nearly no crosswind correction in on the approach. As we approached the final approach fix Tower cleared a 777 to cross our landing runway. We continued, the aircraft was fully across the runway by the time we reached 1,000 feet AGL and parked on Taxiway TT. I assume he was waiting for a clearance from Ground to continue further. We continued on the approach and right as I was bringing the thrust levers back to idle a sudden jolt of firm left aileron and right rudder were needed to continue a safe ground track and land the aircraft. I am not sure exactly what bank angle was achieved but the proximity to the ground made it seem like quite a lot. My guess is around 10-12 degrees of bank at 10 feet off the ground. Some comments from passengers sounding the alarm that things where not correct when they got off the airplane make me think things where perhaps worse than I know due to the speed at which this all happened. The incident all happened approximately 10 ft AGL. Due to the suddenness and nature of the incident the best course of action was to land the aircraft. I had plenty of runway available to safely execute a full stop landing. Had the event happened at say 50 or 100 feet, a go-around would have certainly been necessary. The landing overall was completed without further incident. We taxied to gate, deplaned. And other than a few comments from Flight Attendants and passengers it was a normal operation. The cause of this sudden change and necessity for rudder and aileron was due to the 777 parked on Taxiway TT attempting to taxi right as I was landing. He was headed out for takeoff so I assume he was all loaded up and needed a lot of thrust to get moving. This is what caused such a dramatic necessity for correction very close to the ground. I hope out of this pilots and Controllers are made aware of the possibility of incidents like this in the future if we're not operationally prepared in some way. The cause of the event was the new taxi procedures and runway configuration due to the addition of 27C in Chicago. When cargo carriers taxi on TT they're putting anyone landing at risk of jet blast. At least a note could be added to our company pages alerting pilots about the possibility of this happening. But maybe even a change in how Chicago does taxi operations.

Narrative: 2

There is a significant safety threat to aircraft landing on Runway 27C in ORD, due to jet blast from aircraft crossing 27C on taxiway TT. This taxiway is approximately 1,100 - 1,200 feet from the departure end, so it is perfectly situated to impact aircraft in the landing flare. To make matters worse, aircraft that cross 27C are instructed to contact Ground on TT and are therefore not on frequency when given an instruction to continue their taxi. In this particular case, a 777 had crossed 27C, then stopped on TT, presumably awaiting further taxi instructions from Ground. They were not on our frequency. At under 10 feet we were hit with a really bad amount of jet blast from the 777. The First Officer did a fantastic job of getting the roll event back under control for a safe touchdown. We advised Tower of the event. Something with regard to the above needs to change. Either,

aircraft should cross somewhere else; Controllers should advise aircraft crossing 27C at TT to use minimal power when resuming taxi; Controllers advise pilots of the jet blast potential, or at the very least, there should be a note on a chart.

Synopsis

B737 flight crew reported encountering jet blast from B777 on Taxiway TT while landing on ORD RWY 27C.

Time / Day

Date : 202106

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory. TRACON : ZZZ

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 : Climb

Flight Phase : Initial Climb

Route In Use : Vectors

Airspace.Class E : ZZZ

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 Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1300

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 20

ASRS Report Number.Accession Number : 1812451

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 : Check Pilot
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 4750
Experience.Flight Crew.Last 90 Days : 121
Experience.Flight Crew.Type : 2246
ASRS Report Number.Accession Number : 1812455

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Inflight Shutdown
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Returned To Gate
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Aircraft Damaged

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During initial climbout, I was the pilot flying. We were flying runway heading off of [Runway] XX to 4,000 feet as assigned. We had not yet received our clearance to climb higher. I began to reduce power and pitch in order to level off at 4,000. At 3,500 feet, and speed 240 KIAS, we were instructed to climb and maintain 10,000 MSL. I then smoothly added thrust and adjusted pitch to continue climbing utilizing FLC. Once I increased thrust, there was a loud bang, followed by the engine indications and crew alerting system indicating engine # 1 was out. Additionally, a yawing tendency towards the INOP engine. Once identified by both pilots, controls were transferred to the Captain and I assumed PM duties. Normal checklists were complete, ATC and company was notified and the QRH procedure for engine out was accomplished. Engine fluid levels were normal, and the engine was shut down, which did not require the pulling of the #1 fire extinguishing handle. Once concluded a restart was not advised after discussion, due to the loud bang and sudden shutdown, we then were directed by the QRH to execute one engine inoperative approach and landing. The FA was notified and provided a [crew] brief, followed by the passenger announcement. We then coordinated with ATC for radar vectors for the visual, backed up by the RNAV XX in ZZZ. Once landed, we stopped on the runway, had the engine inspected by the ZZZ fire department. Verification was made that there was no fire, fluid leakage and we then taxied off the runway and parked at [the] gate for

deplaning. Loud bang, aircraft yaw and EICAS indications by both pilots leading to the engine out procedure. Cause is still to be determined, from the initial inspection, the mechanical issue caused small metal fragments found in the compressor blades. After identifying the issue, we transferred flight controls, had a brief discussion and executed the pertinent QRH procedures for engine failure and a single engine approach and landing. No suggestions to report at this time.

Narrative: 2

We were climbing out of ZZZ of Runway XX on runway heading and were just about to level off at 4,000 ft so the FO (PF) reduced thrust. Just before we leveled off we were given a continued climb up to 10,000 ft. While reintroducing thrust at 4,000 ft we heard a loud bang followed by aircraft yaw. I immediately looked at the EICAS and saw an abrupt stop in the #1 engine. I called for my Aircraft. The First Officer and I briefly discussed the situation then promptly ran the QRH for Engine OUT. The engine was shut down and our fluid levels (hydraulic/oil) looked normal so we decided against pulling the fire extinguishing handle. We discussed the possibility of restarting the engine but decided against it because of the loud bang we had heard followed by the abrupt shutdown of the engine. We were then led to [procedure] and proceeded to get set up for the Single engine approach. After finishing talking to the passengers, flight attendant and sending a message to dispatch we completed all other normal checklists. We then executed the visual approach backed up by RNAV RWY XX into ZZZ without any further event. We landed and had the fire department check out our engine for signs of smoke, fire, or fluid leak and then proceeded to the gate. The first indication of the Engine failure was a loud bang followed by aircraft yaw. We then looked at the EICAS and saw the indications of a #1 engine failure. We were not given a definitive cause for the failure. It seems to have been a mechanical issue inside the Engine. Upon inspection after landing chunks of metal were found inside the compressor blades. After noticing the event. We transferred flight controls then briefly discussed our situation and decided to run the checklist for Engine Failure in the QRH .

Synopsis

EMB-145 flight crew reported an engine failure on takeoff resulting in an air turn back and a precautionary landing.

Time / Day

Date : 202105

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 12000

Aircraft

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 E : ZZZ

Component

Aircraft Component : Flap/Slat Control System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 108

ASRS Report Number.Accession Number : 1805782

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action

Result.Flight Crew : Landed As Precaution

Result.Flight Crew : Returned To Departure Airport

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Enroute to ZZZ1 at 12,000 and 300 kts with AP on, I saw the flap indicator appear on ED1 and momentarily display flaps extended before returning to zero. Approx 1-2 seconds later, the aircraft pitched nose down slightly and descended about 200 feet before leveling off and returning to our assigned altitude. We notified Dispatch and Maintenance, and decided that the best course of action would be an air return to ZZZ. We flew back to ZZZ and landed without further incident. Cause - The FO and I initially both suspected a momentary uncommanded flap movement due to the indication and the pitch down moment we experienced. We discussed the situation with Operations and they requested we return to ZZZ, a decision that we agreed with. Later discussions with Maintenance brought up the possibility that an erroneous sensor indication may have caused the auto trim system to trim the aircraft nose down.

Synopsis

CRJ-200 Captain reported a flap indication issue followed by an uncommanded pitch down movement. The crew contacted Dispatch and Maintenance Control and decided to return to the departure airport.

Time / Day

Date : 202104

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 7600

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

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

Nav In Use : GPS

Nav In Use : FMS Or FMC

Flight Phase : Takeoff / Launch

Flight Phase : Initial Approach

Route In Use : Visual Approach

Airspace.Class E : 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 Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1802901

Human Factors : Troubleshooting

Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During departure and approach phases, FMS switched to ROLL-GA (Go Around) modes without pilot command. On takeoff from ZZZ, performing the ZZZZZ1 departure from runway XX in HDG (heading) mode, PF (Pilot Flying) called for and PM (Pilot Monitoring) confirmed PITCH mode at acceleration altitude. PM also selected and confirmed E CLB (climb), as had been briefed prior to takeoff. While in the turn to heading XXX to intercept ZZZ RXXX to ZZZZZ, the FMS spontaneously and uncommanded switched to ROLL-GA modes. PF was hand flying, recognized the mode switch, and was able to disregard the flight director's direction. PM re-sequenced FMS for ZZZ - ZZZZZ leg and selected CLB thrust and HDG, PITCH modes with LNAV selected for course interception. After course intercept, autopilot was engaged. FMS performed nominally until ZZZ1 terminal area. Cleared from base leg for descent to 7000', given vector to intercept localizer for ILS XXR, and cleared for visual approach, PF selected VS mode to begin descent and assigned heading in HDG mode with LNAV pre-selected for intercept. Autopilot was engaged. Again, spontaneously and uncommanded, FMS switched to ROLL-GA modes. Autopilot initiated climb. PF recognized the malfunction, switched off the autopilot, arrested climb, re-trimmed, and hand flew approach to landing. PM selected CRUISE thrust. (GA mode climbed aircraft from about 7400' MSL to about 7600' MSL before recovery and pilot resumption of descent.) PM attempted several times to re-sequence approach in FMS; FMS kept returning to ROLL-GA mode. Additionally, attempts to turn off distracting Flight Director and use raw green needle LOC/GS data for visual approach were unsuccessful. PF landed visually. After arrival at gate and aircraft shutdown, malfunction was entered into maintenance logbook and Maintenance control was contacted.

Synopsis

EMB XRJ-145 Captain reported auto flight system malfunctioned during departure and arrival phase by uncommanded reversion to Roll-Go Around mode.

Time / Day

Date : 202104

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : DFW.Airport

State Reference : TX

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : D10

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 : Climb

Airspace.Class B : DFW

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : D10

Aircraft Operator : Air Carrier

Make Model Name : B747 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Climb

Airspace.Class B : DFW

Person : 1

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 : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4814

ASRS Report Number.Accession Number : 1802277

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.Total : 2400
ASRS Report Number.Accession Number : 1802278

Events

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

Assessments

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

Narrative: 1

We departed Runway 18L in sequence behind a B747. During the climb ATC requested a right turn to 330, then direct BLECO fix. As I began the turn I experienced wake turbulence which caused an uncommanded roll and momentary "bank angle" aural warning. I corrected the bank and leveled the wings before continuing the turn to BLECO. No other incident occurred after that. Uncommanded roll due to B747 wake turbulence. [We suggest] additional spacing between aircraft would have prevented the roll.

Callback: 1

Reporter emphasized his concern that spacing from heavy aircraft be increased.

Narrative: 2

A 747 was given an intersection take off clearance on Runway 18L from Taxiway Y or Z, (can't recall). We were given a line up and wait followed by a takeoff clearance from WF (full length). Take off was uneventful. Turning to the north around the fixes BPARK or YAMEL we experienced strong turbulence and a momentary "bank angle" aural warning. The Captain (Pilot Flying) took immediate corrective action to stabilize the aircraft before continuing the turn to BLECO. We entered the wake turbulence of a Boeing 747 on departure. Increased spacing for Heavy/Jumbo departures and maybe consider alternate departure procedures.

Synopsis

EMB-175 flight crew reported encountering wake turbulence departing DFW in trail of a B747.

Time / Day

Date : 202103

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 14000

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

Nav In Use : FMS Or FMC

Flight Phase : Climb

Route In Use : Direct

Airspace.Class E : 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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1797877

Human Factors : Confusion

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1797887
Human Factors : Workload
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface
Human Factors : Confusion
Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Overrode Automation
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

I was PM (Pilot Monitoring) on our flight to ZZZ. We departed the runway and flew the ZZZZZ departure. All was well through 10,000 feet and shortly thereafter, the A/P was coupled. We were VMC and it was a normal, 270 knot climb. Approximately 8 miles before ZZZZZ, maybe climbing through 14,000 feet, the aircraft began an uncommanded, soft turn to the right of course. It then increased to a more abrupt banking turn to the right, accompanied with about 4-5 degrees of nose-down pitch attitude. The turn to the right was approximately 40-50 degrees total. The airspeed quickly increased and I saw airspeed tape up to, but not into, the barber pole. I don't recall any aural warning and the EICAS was clear. This evolution was quick. The CA (Captain) and I exchanged a few words as he detected the error, followed by an A/P disconnect and a manual recovery, which began with a pitch input and throttle adjustment. I was talking to Center as this began and was queried immediately. I replied that we experienced a perceived autopilot anomaly, but were correcting. We were instructed to rejoin the departure at ZZZZZ and continue from there. The CA and I discussed the event, and once back on profile, we re-engaged A/P and continued the flight in normal fashion. I'm still not sure what happened. The DP (Departure Procedure) was loaded directly from the FMS data base, with no modifications. We were climbing VIA, in magenta FLCH. When the aircraft began to stray, the A/P was following the flight director cue the whole time. The pitch down was concerning and both of us suspected a trim runaway at first, but as the yoke was pushing forward from the A/P, the CA quickly de-coupled the A/P and recovered back on course. Looking back, we

performed normally and programmed the FMS normally. I have no explanation for this event, but I am grateful we were VMC at the time and that we recovered in a timely manner. The CA did further consulting once we landed in ZZZ.

Narrative: 2

I was PF (Pilot Flying). We departed the runway and flew the ZZZZZ departure. All was well through 10,000 feet and shortly thereafter, the A/P was coupled. We were VMC and it was a normal climb. Approximately 8 miles before ZZZZZ, maybe climbing through 14,000 feet, the aircraft began an uncommanded, soft turn to the right off course. It then increased to a more abrupt banking turn to the right, the airspeed quickly increased and I saw airspeed tape up to, but not into, the barber pole. I don't recall any aural warning and the EICAS was clear. This evolution was quick. The FO (First Officer) and I exchanged a few words I disconnect the auto pilot and a manual recovery, which began with a pitch input and throttle adjustment. FO was talking to Center as this began and was queried immediately. He replied we experienced an anomaly, but were correcting. We were instructed to rejoin the departure at ZZZZZ and continue from there. Hand flew for a few minutes once back on course, we re-engaged A/P and continued the flight, which was uneventful.

Synopsis

EMB-175 flight crew reported an autopilot anomaly resulting in a momentary loss of aircraft control.

Time / Day

Date : 202103

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 13000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Daylight

Ceiling.Single Value : 4500

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 : Takeoff / Launch

Airspace.Class E : ZZZ

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 : 1796669

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Distraction

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation - Speed : All Types

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

Anomaly.Ground Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Result.Flight Crew : Regained Aircraft Control

Assessments

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

Narrative: 1

I completed a thorough walk around and told the Captain there was a lot of ice on the aircraft and we were going to need to deice. I also recommended we take off with full Anti-ice on and the Captain agreed after a minute. We did a full deice type 1 and 4 everything went as planned. I ran the cold weather cold soaked check list to prepare for deicing. Once Deicing was completed I received all the pertinent information from iceman and wrote it down on a TOLD card. I then completed the deicing check list and we called ground for taxi. I made sure all the deice check list was completed and we taxied out for departure. Myself and the Captain talked about leaving the flaps and slats up or down while taxiing and due to having such a long hold over time we chose to lower flaps to proper flap setting for takeoff knowing that our hold over time would be reduced by 50%. As we pulled onto the runway and did our final configuration check we had a no take off and the Captain adjusted the FMS info for takeoff and the neck check was good to go. We were cleared for takeoff and I did all my flows and the before takeoff check list. Power was set and we began to roll and immediately the Captain was going left and right on the runway due to the winds being so strong and at this point I put my feet on the pedals getting ready to help the Captain. We reached V1 and I called out V1 then rotate. As soon as we rotated next thing I know is we are going left of the runway due to the winds being so strong at this point I don't remember if I called out positive rate and this allowing the Captain to call gear up. The next thing I remember is calling out acceleration and the Captain calling out flight level change and auto pilot on. At this point we are getting bumped all around due to the severe weather. The Captain then says flaps and I raise them watching the airspeed as we are bumped around. I call out speed since we are getting close to the speed warning and the Captain does not have time to get the nose up higher to stop this warning from happening then we notice all of a sudden we have a packs off message and the Captain says the packs are off and I state they are on. He resets them but to no avail. They continue to show off. At this time the Captain says the gear is down and raises it while we are being thrown all around. I ask ATC if we can level off at 11,000 and they clear us to level off at 11,000. We are still getting pounded and unable to maintain 11,000. I reach for the QRH as the Captain calls for the QRH between 11,000 and 13,000 the packs off warning message goes away and due to already being at 13,000, ATC asks if we would like to continue to climb and I state yes after looking over at the Captain and he nodded his head to say yes. I then ask about the weather and they state the weather will calm down above 20,000. We are then cleared to climb to 23,000 and I say to the Captain when we are above 20,000 I'm sorry I don't recall if I called out positive rate allowing the Captain to call for gear up and the Captain responds that he did call for gear up and he always does. But I don't recall any call out for gear up. I would really like to hear the recording just to see what all was said while we were being battered around. Everything ended up normal from this point on. Once we landed our flight attendant stated the passengers were not happy with the take off and were screaming. Unfortunately, there is not much we could have done on this take off that we did not already do. We had already talked to ground to see if other aircraft had taken off and they said everything was fine with the first 3 departures. We checked the winds with ACARS

including gusts and ACARS showed the take off to all be within tolerances. I wish I remembered if I had called out positive rate and had heard gear up but I did not and don't remember.

Synopsis

Air Carrier flight crew reported severe turbulence on takeoff resulting in a speed deviation.

Time / Day

Date : 202103

Local Time Of Day : 0601-1200

Place

Altitude.MSL.Single Value : 30000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Other

Light : Daylight

Aircraft : 1

Reference : X

Aircraft Operator : Corporate

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.Airway : J42

Aircraft : 2

Reference : Y

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

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 : Corporate

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 1305

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 177

ASRS Report Number.Accession Number : 1792632

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 : 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 : Environment - Non Weather Related

Narrative: 1

The purpose of this report is to give awareness of the possibility of strong wake vortex and turbulence encounter over large distances at high altitude. This is especially applicable to light and very light jets. In VFR conditions, wake turbulence was encountered from a heavy B777 at a distance of about 25 miles at an altitude of about 30,000 ft. in a BE400XP of about 14,000 lbs. at the time of the encounter. The BE400XP was within 1,000 ft. of the altitude of the heavy B777 25 miles ahead and we were climbing to a higher cruise altitude above the B777. The encounter resulted in temporary turbulence between moderate and severe and the aircraft tried to roll beyond 45-50 degrees twice with uncommanded input from an initial attitude of a wings level climb of about 1,000 fpm. No autopilot was yet engaged. The aircraft was being flown by hand (the autopilot about to be engage as we just entered RVSM airspace) and the upset recovery was immediate but required very large roll corrections to keep the aircraft upright. At the time of the encounter, the heavy B777 was ahead and to the left at about 25 miles and winds were a quartering tailwind of about 78 kts. Given the distance of separation and the amount of wind movement at that altitude, the wake vortex encounter was not expected and a complete surprise. There was no visible contrail from the B777. We thought the vortex would have dissipated well ahead of our point of encounter. Instead, it appears the vortex was strong enough to still be very significant at that distance and was blown across our route with the prevailing winds. The entire event lasted about 5-10 seconds. ATC was then notified and concurred it was most likely the wake of the heavy aircraft 25 miles ahead. Initially, both aircraft had been on a similar flight route. They also initially had closer separation and both paths had crossed at an earlier point in flight with the BE400XP below the heavy B777 flight path with no issue. At the stage of closer separation and route intersection ATC had given us an advisory of the aircraft. I am the FO (First Officer) and I was the pilot flying from the left seat. The CA (Captain) was the pilot monitoring and both of us discussed the possibility of wake vortex encounter with closer separation. We both visually identified the aircraft when in sight distance, and we were careful to avoid known problem areas relative to the B777 where wake vortex would be an issue. As the flight progressed, we moved to a relative position in trail of the heavy B777 with the distance between us and them continually increasing. Eventually we were well beyond any close separation where a wake vortex encounter is normally thought to occur. However, at about 25 miles of separation and within 1,000 ft. of the altitude of the heavy B777, we encountered strong wake vortex as we climbed to a higher altitude. No significant naturally occurring turbulence had been forecast (a large high pressure system was over this area) and none was encountered prior to or after the wake turbulence event. In addition, no other traffic was within 50 miles, this and the B777 distance were re-verified after the vortex encounter. In retrospect, I am not sure there is anything different either the flight crew or ATC could have done to avoid the wake vortex encounter. However, if I had a choice in policy design, I would recommend that all flight

crews hand fly the aircraft to cruise altitude even in RVSM airspace. I realize an autopilot is an FAA requirement for operating in RVSM. In addition, many flight departments and large carriers require the autopilot to be engaged more or less right after takeoff. This policy can unintentionally degrade stick and rudder skills as a pilot needs to have a feel and understanding of actual aircraft performance. This is critical at high altitude as aircraft control is more sensitive. An autopilot is not a substitute for actual stick and rudder skills even at high altitude. (Autopilots can fail.) Upset recovery has happened in the real world at high altitude. This is an example of a well-trained, competent, and alert flight crew encountering an unusual attitude event in circumstances one would not expect the event to occur. I also question whether an autopilot would have impeded the recovery time as the "startle effect" could be more pronounced. In addition, I think that being in RVSM airspace can give a false sense of safety as heavy aircraft are routinely on route in very close proximity to light aircraft. I see this as not only an awareness issue for flight crews but system stakeholders in general (ATC, FAA policy teams, flight departments, etc).

Callback: 1

Reporter stated the risk of upset is great with a small jet in trail of a heavy.

Synopsis

BE-400 First Officer reported encountering wake turbulence climbing through FL300 25 miles in trail of a B777 that resulted in a loss of aircraft control.

Time / Day

Date : 202102

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Altitude.MSL.Single Value : 100

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

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 : Takeoff / Launch

Airspace.Class B : 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 : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 180

Experience.Flight Crew.Type : 3300

ASRS Report Number.Accession Number : 1791837

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 : 1790897

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

I was Pilot Flying. Just after liftoff, the nose trim ran high speed nose up on its own. I waited a quick moment and told the Captain that I was not doing that trim command, and then pushed forward on the yoke to stop the runaway. After retracting the flaps, I relaxed forward pressure and the trim continued nose up runaway at slow speed. I pressed the electric time nose down on the yoke, and the up trim stopped its uncommanded nose up runaway. Then we ran the Stabilizer Runaway Checklist and returned back to ZZZ uneventfully.

Narrative: 2

During takeoff from ZZZ, at approximately 300 ft. AGL, the aircraft trim began running continuously, high-speed, in the "Nose-Up" direction. The F/O (First Officer) stopped the trim by pushing forward on the yoke. This action stopped the trim movement. At 1,200 ft. AGL, after retracting the flaps, the trim began running again, continuously "Nose-Up" in the slow-speed mode. This time the F/O used the Electrical Trim switch in the opposite direction and this action stopped the movement. We ran the Runaway Stabilizer Checklist and returned to ZZZ for an uneventful approach and landing.

Synopsis

Pilot reported a runaway stabilizer trim system and elected to air turn back and make a precautionary emergency landing.

Time / Day

Date : 202102

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZLA.ARTCC

State Reference : CA

Altitude.MSL.Single Value : 31000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZLA

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 : Descent

Airspace.Class A : ZLA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class A : ZLA

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 : 1789931

Events

Anomaly.ATC Issue : All Types

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 at FL320 on the HLYWD arrival into LAX, and we had been given a vector off course for spacing. Upon rejoining the arrival we were given slower speeds until we actually saw an aircraft 5 nm in front of us. We were then assigned a speed of 250 kts indicated, then descend to FL240, followed by a clearance to descend via the arrival. I was concerned as we started our descent as we were clearly descending at a higher rate than the aircraft ahead of us and would be flying through their flight path at a close proximity plus winds at altitude were approximately 110kts. Suddenly our airplane began a roll to the right, I would estimate 20-25 degrees of bank, then it began rolling to the left at least 30 degrees of bank if not more and the autopilot disconnected itself. We were having an upset due to wake from the aircraft ahead of us so the Captain quickly recovered and I advised ATC what was happening and that we needed something different. They approved an offset to our course, and then advised the aircraft ahead was a B777. 5nm is inadequate spacing between a heavy aircraft and others. Fortunately we recovered well and landed safely. 99 percent of the time our folks in ATC do an absolutely outstanding job, and we couldn't do this without them! This event is unusual, but highlights an opportunity we can improve. I would also like to see better communication from ATC and a better understanding of the safety ramifications of wake turbulence - I frequently get the impression that they don't understand this risk adequately. I want to know if I'm in trail of a heavy aircraft! Sooner than later! It matters, it changes my expectations and I'm not consistently getting this information. I recommend more spacing, more and consistent communication about heavy aircraft ahead, and if I need to be vectored for spacing then let's address speed at the same time so I'm not constantly changing my configuration when I need to focus on flying.

Synopsis

B737 First Officer reported encountering wake turbulence on descent into LAX in trail of a B777.

Time / Day

Date : 202102

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 400

Environment

Flight Conditions : IMC

Light : Night

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

Airspace.Class B : ZZZ

Component : 1

Aircraft Component : Autothrottle/Speed Control

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Flight Director

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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1788543

Human Factors : Troubleshooting

Human Factors : Human-Machine Interface

Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1788685
Human Factors : Troubleshooting
Human Factors : Confusion
Human Factors : Human-Machine Interface

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
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.Automation : Aircraft Other Automation
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Overrode Automation

Assessments

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

Narrative: 1

On initial climbout of ZZZ off Runway XXC we experienced loss of power shortly after passing 400 feet and received the "Landing gear" aural warning. I double checked the gear handle and verified gear position, then verified N1 rollback, momentarily thinking we had dual engine failure. FO exclaimed startle, I replied "fly the plane". FO disconnected auto throttle, brought the thrust back up to takeoff position. We momentarily lost altitude and airspeed as Startle and surprise delayed our recognition slightly. Timing of the event was before flap retraction so we were near flap over speed during recognition and recovery, I said "watch the speed pitch up pitch up" until flaps were retracted. FO later indicated his flight director was not giving correct indications for phase of flight. FO was able to recognize and manually control the aircraft, resuming normal climb out. Once the aircraft was under control, auto pilot and auto throttle engaged normally and no further anomalies were experienced. Unknown, weather was stormy, with moderate turbulence and lightning flashes in vicinity, in full IMC. We teach hand on thrust levers at all times during arrival and landing phase, but not during takeoff...had the FO had physical contact with the thrust levers during the climb, the AT retarding would have been instantly detected. I recommend the same procedure is taught for takeoff as is for landing...one hand on the thrust levers.

Narrative: 2

After checking everything was normal we lined up on runway XXC in ZZZ. We verified our automation was in the correct mode including TO, ROLL, and FLCH were verified on our FMA as well as the crosshair flight director was up. As I advanced thrust the auto throttles took and the captain confirmed that ATTCS armed and we had normal TO thrust. at 80

knots while verifying the speed I saw the AT were in their normal HOLD mode. At this point everything was completely normal. When I went to rotate and was transitioning in the instruments I noticed that the FD had switched during the roll to the diamond mode which is supposed to happen at 1000'AGL. (Latter the captain confirmed that there's was normal). I had a normal rotation and pitched towards a normal takeoff attitude disregarding the flight director. At approximately 400 AGL the auto throttles commanded idle thrust suddenly. The startle and surprise nature of this took a second to process where we lost approximately 50 feet. At this point I disconnected the auto throttles and set climb power. The automation was still not working correctly including the flight director. Once we climbed through sterile we turned on the auto-throttles and they worked throughout the flight but we watched them very carefully and called Maintenance writing up the experience on the ground. The cause is unknown. before Takeoff we both verified we were in the correct automation modes. Once in cruise flight we verified all out take-off date and departure limits were set correctly and they were. Contributing factors to the loss of altitude was the thunderstorms in the vicinity, night, and moderate turbulence. More effective startle and surprise training in the sims. We are taught to keep both hands on the yoke throughout departure I think at 400 feet though 10,000 we should be guarding the thrust levers like we do on approach to landing.

Synopsis

EMB 170/175 flight crew reported a momentary loss of control and altitude when the autothrottles (AT) went to idle thrust just after takeoff. The crew disconnected the AT, regained control, and continued the flight.

Time / Day

Date : 202002

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Night

Ceiling.Single Value : 10000

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Gulfstream G100/G150 (IAI 1125 Astra)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Landing

Route In Use : Direct

Component : 1

Aircraft Component : Normal Brake System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Nosewheel Steering

Aircraft Reference : X

Problem : Failed

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 14500

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 2700
ASRS Report Number.Accession Number : 1788331

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Ground Excursion : Runway
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : Taxi
Result.General : Maintenance Action

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

We came to land at ZZZ airport, executed ILS Runway XX to approach to it even the weather conditions were completely Visual. Everything was normal, we touched down and begun our landing roll, lowered the nose of the aircraft to the ground, deployed reverse thrust and applied brakes, suddenly master warning illuminated indicating a failure, I was not able to determine the source of the failure at that very moment, I have increased progressively the pressure on the brakes and reverse thrust, aircraft began to decelerate rapidly and began to veer slightly to the left side, condition I counteracted with differential braking and thrust reverse power reduction, reached for the steering wheel to continue counteracting the veering tendency and steering wheel was stiff and locked unable to move it, I mention to my First Officer we have lost steering control, continued counteracting with rudder pedal and differential braking, but rudder aerodynamic capability diminish with speed reduction, I mention again to my First Officer that we had lost steering control and felt diminish braking action, airplane slowly overrun into the grass to the left side and lost braking action, I went to and transfer to emergency braking and recover partial control of the aircraft finally stopping on the grass. Executed passenger evacuation checklist to secure aircraft, passengers and crew evacuated through main door, no injury occurred to any one onboard, airplane is in good condition, we called FSS to advise of our incident during landing.

Synopsis

G100 Captain reported on landing loss of brakes and steering resulted in runway excursion.

Time / Day

Date : 202101

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 27000

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Turbulence

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

Make Model Name : Falcon 900

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Horizontal Stabilizer Trim

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 12200

Experience.Flight Crew.Last 90 Days : 15

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1786540

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

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

Narrative: 1

Flight originated in ZZZ with ZZZ1 as destination, original planned cruise was FL230. Upon reaching cruise level we were in IMC and light to moderate turbulence, a request was made for higher cruise level. After leveling off at FL270 we were on top of the layer and smoother air; a few minutes later we had an indication that #3 fuel computer had failed and proceeded to follow POH procedures to attempt a reset, that required bringing the affected engine to idle before cycling the fuel computer control switch. While we were in the process to reset the computer there was an advisory message on the FMS regarding an out of trim condition, before attempting to re-trim the aircraft I disengaged the auto pilot to ascertain the condition, while re-trimming we started to encounter that the tops of the clouds below were in fact rising to our current cruising fl and encountered a sudden but brief increase in turbulence from nil to moderate so the aircraft was pushed upwards about 500 feet before I could correct it without a violent maneuver as we had passengers; ATC requested a confirmation of our current flight level and we advised that we were returning to FL270. The flight proceeded to ZZZ1 without further complication or comment from Controller. As the turbulence encounter occurred while the autopilot was disengaged and the sudden change in flying conditions (from smooth to moderate turbulence) Except for the use of more aggressive maneuvering the altitude excursion was in my opinion almost unavoidable.

Synopsis

Falcon 900 pilot reported that a fuel computer failed followed by an out of trim advisory message. They disengaged the autopilot to respond to the problems and encountered turbulence that caused an altitude excursion.

Time / Day

Date : 202101

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : CLT.TRACON

State Reference : NC

Altitude.MSL.Single Value : 4000

Environment

Light : Daylight

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

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Flight Plan : IFR

Airspace.Class B : CLT

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Experience.Flight Crew.Total : 3288

Experience.Flight Crew.Last 90 Days : 82

Experience.Flight Crew.Type : 1927

ASRS Report Number.Accession Number : 1786039

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

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 : Ambiguous

Narrative: 1

We were on approach into CLT [Runway] 18C, level at 4,000 ft. We encountered wake turbulence which disconnected the auto pilot and caused us to take action to correct the aircraft from an upset state. Once corrected we contacted ATC and were able to continue the approach to landing with no other issues. Hard rolling action which disconnected auto pilot. Wake turbulence. Corrected the state of the aircraft and corrected back on course after deviation. As we did keep focused on the airplane and be ready for anything.

Callback: 1

Reporter stated the roll rate was sudden and aggressive.

Synopsis

EMB-145 F/irst Officer reported encountering wake turbulence on approach to CLT that caused a "hard roll" and disconnected the autopilot.

Time / Day

Date : 201806

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZLA.ARTCC

State Reference : CA

Environment

Flight Conditions : VMC

Light : Dusk

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZLA

Make Model Name : Gulfstream IV / G350 / G450

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class A : ZLA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZLA

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 Approach

Airspace.Class A : ZLA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

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 : 1784677

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
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.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
Primary Problem : Environment - Non Weather Related

Narrative: 1

Descending out of FL400 with a speed restriction of Mach .76, were directed to cross PURSE at FL340. We started to descend at 1,500 fpm. Around FL370, the aircraft suddenly banked to the left about 45 degrees and we experienced some negative G's. The autopilot switched off and we put power to idle and opposite control inputs. The aircraft then banked up to 45 degrees to the right. We leveled the wings, and noted an additional 3,500 fpm descent rate while passing through FL350. We gradually increased pitch angle to get back to a 1,500 fpm descent and leveled off at FL340. All three crew members were seated with seat belts fastened. No injuries reported. However, the interior was a mess from all the food, water, glasses, magazines, that got thrown around. Immediately after the event, we reported it to ATC and queried about preceding traffic. We were told that there was an Airbus A320 eight miles ahead that was in a descent. In order to avoid any further incidents, we requested to veer off the JANNY4 arrival, and paralleled the course.

Synopsis

GIV Captain reported encountering wake turbulence descending out of FL400 from preceding A320, resulting in 45 degree bank in both directions.

Time / Day

Date : 202101

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ1.TRACON

State Reference : US

Relative Position.Angle.Radial : 270

Relative Position.Distance.Nautical Miles : 10

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ1

Aircraft Operator : Corporate

Make Model Name : Honda Jet

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class B : ZZZ1

Component

Aircraft Component : Horizontal Stabilizer Trim Motor

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 4237

Experience.Flight Crew.Last 90 Days : 28

Experience.Flight Crew.Type : 135

ASRS Report Number.Accession Number : 1784352

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Landed in Emergency Condition

Assessments

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

Narrative: 1

The last time I flew this aircraft before today was [Date] a flight from ZZZ to ZZZ1. The airplane was flawless. Memory items leaving the runway, pitch trim 2.1 [units], speed brake retracted, flaps up all accomplished. The airplane remained in the hangar except for a Jeppesen update and insertion of new 32GIG SD cards pursuant to Honda Service Bulletin 420-42-015. The insertion of the SD cards are nowhere near the trim hat on either yoke and the standby trim was never activated. Today was my first flight since that date and when I pre-flighted the cockpit I noticed that instead of 2.1 the pitch trim was full nose up about 13 units at the bottom of its travel. I re-trimmed to 2.1 and to the best of my recollection the roll and yaw trim were where they should have been. There was no reason that I knew for any of the trims to have been moved and the aircraft was locked at all times. Takeoff was normal but as I climbed out and engaged the autopilot the airplane suddenly rolled right and the AP (Autopilot) disconnected. I counteracted the roll and trimmed left wing down. I was able to regain control but when queried by ATC (Air Traffic Control) I agreed to [request priority handling] and asked for an immediate return to the airport. ATC gave vectors to final and the landing was uneventful. I contacted Honda and was told that this had been reported twice before but they had ascribed it to a child in the right seat. I fly single pilot and I have no children in the right seat or anyone else usually. I explained the circumstances and Honda agreed to contact a Honda maintenance provider to have them check the trim system. I will also follow up with Honda engineering because there is not a chance in the world that I inadvertently put full nose up trim in my airplane or full right wing down roll trim. In fact the Honda Jet uses very little trim at all in all configurations. There is no pre-flight procedure or other that I am aware of where a pilot would roll trim full nose up or full right wing down. I have learned that if one trim is out of whack, make certain all the others haven't been reset out of limits by any problem in the airplane before takeoff. I also learned that electronic airplanes have glitches even the factory doesn't understand. That isn't comforting.

Synopsis

Pilot flying Honda Jet reported trim problems during climb out.

Time / Day

Date : 202101

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 30000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B777-200

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Climb

Route In Use : Vectors

Airspace.Class A : ZZZ

Maintenance Status.Maintenance Deferred : Y

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Inspection

Maintenance Status.Maintenance Items Involved : Testing

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

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 : 1781782

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 : Relief Pilot
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1781783

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Maintenance
Anomaly.Deviation / Discrepancy - Procedural : MEL / CDL
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Other / Unknown
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 : Requested ATC Assistance / Clarification
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

Flight crew noted a slight rumbling vibration on climb out. The vibration increased with airspeed and as we reach cruise at FL300 and increased speed we noted the increased vibration and that there was a control yoke displacement of approximately 2 units right in straight and level flight with all other trim neutral. After discussing the situation as a crew, we decided to contact [Operations and Maintenance] for further discussion and possible solutions. Due to a known history and MEL addition affecting spoilers, we selected the flight control schematic page and noted that the right flaperon indicated a near full upward deflection in level flight. Through our discussion with [a] tech pilot, it was suggested that we try utilizing rudder trim to determine how much was needed to neutralize the control yoke, and we determined that 4 units of rudder trim was required. Without being able to fully determine what was causing the vibration we decided that a 13 1/2 hour flight and oceanic crossing would not be prudent, and most likely would not be possible due to fuel over burn. We discussed possible alternate airports and [Operations] ultimately requested that we return to ZZZ. We were North West of ZZZ1 when we coordinated with ZZZ2 Center for our return to ZZZ. We coordinated with ZZZ1 Center to jettison fuel in order to be below max landing weight. The fuel jettison of 78,400 lbs. was accomplished just south east of ZZZ3 VOR at FL200. Arriving back into the ZZZ area, we coordinated for runway 36C. As we configured the aircraft for landing, we noted a drastic increase in vibration as

the flaps were extended from 20 to the planned setting of 30. We adjusted to flap 25 for landing and flap 25 speed. Although the vibrations and roll control were abnormal on final, the landing was uneventful. After landing we elected to leave the flaps at 25 until mechanics at the gate could verify that retraction would not cause further damage. After block in it was discovered that the number 6 spoiler was up. We could not see indications for the number 6 spoiler on the flight control page due to the MEL deactivation. Initial indications are that the number 6 spoiler which was deactivated under MEL was "floating" or extended when it should have been down.

Narrative: 2

On taxi out, during the control check a "spoilers" EICAS message displayed. PDM (Programmed Depot Maintenance) procedures were attempted, but we had to return to the gate for maintenance, as it was a "flagged" item. Spoilers were MELed. After takeoff, we felt airframe vibrations that got worse at higher altitudes and airspeeds. We found the right flaperon was indicating all the way up, the left flaperon was indicating slightly down. Additionally, the control wheel was right wing down about 2 degrees. After consulting Maintenance and [Operations], everyone decided that the best course of action was to RTB (Return to Base) ZZZ. Fuel jettison checklist was executed in order to land on 36C. Due to excessive airframe vibrations at flaps 30, a flaps 25 landing was made. Uncommanded asymmetric spoiler deployment.

Synopsis

B777 flight crew reported uncommanded asymmetric spoiler deployment in flight.

Time / Day

Date : 202012

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 41000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Corporate

Make Model Name : Global 5000 (Bombardier)

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Nav In Use : GPS

Nav In Use : FMS Or FMC

Flight Phase : Cruise

Route In Use : Direct

Component

Aircraft Component : Autoflight System

Aircraft Reference : X

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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.Total : 3650

Experience.Flight Crew.Last 90 Days : 25

Experience.Flight Crew.Type : 1200

ASRS Report Number.Accession Number : 1779802

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Detector.Person : Flight Crew

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

During cruise at FL410 there was an uncommanded disconnect of the Automatic Flight Control System (AFCS). Loss of Autopilot (AP), Yaw Dampener (YD), and Auto Throttles (AT). Dutch Roll developed becoming divergent. Attempts were made to reengage the YD. Switching AFCS channels initially unsuccessful. As the Dutch Roll was increasing in amplitude, continued manual flight was proving difficult. Crew elected to initiate immediate descent to FL370 and inform ATC. AFCS restored as aircraft descended out of FL410. Descent continued to FL370. Operations normal, QRH consulted - continued flight on one remaining AFCS channel.

Synopsis

Global 5000 (Bombardier) Captain reported a malfunction of the Automatic Flight Control System, which resulted in uncontrollable Dutch Roll until arriving at a lower altitude.

Time / Day

Date : 202012

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.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Operating Under FAR Part : Part 121

Mission : Passenger

Flight Phase : Takeoff / Launch

Component : 1

Aircraft Component : Wheels/Tires/Brakes

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

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

ASRS Report Number.Accession Number : 1779456

Human Factors : Troubleshooting

Human Factors : Confusion

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : 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 : 1779461
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 : Maintenance Action
Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Rejected Takeoff
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

After we were clear for takeoff on the Runway XX, at ZZZ airport. The Captain applied power; he waited for the engine to stabilize, then he pressed TOGA. As the plane started moving, it suddenly started veering to the right. He tried to correct it by pressing the left rudder, but the aircraft did not respond right away. After a few seconds, the plane veer back to the left, but it only went about 45 degrees to the left. After that, the Captain pressed the right rudder and was able to bring it back to control. Furthermore, we stopped at the runway; then, I called the tower to abort the takeoff. Finally, we were able to taxi off the runway and went back to the gate.

Narrative: 2

Cleared for takeoff Runway XX. Engines spooled up "taxiing" up to takeoff point on Runway XX. With engines at 40% N1 pushed TOGA button and throttles advanced. We observed the white arcs advancing but the plane didn't seem to be accelerating normally. As I glanced inside to ensure the auto throttles were engaged (they were) the aircraft started to drift right. I tried to correct back with the rudder as we always do but it had no effect. As the right drift continued I rejected the take off and had to use almost full nose wheel tiller to correct back to centerline. We smelled burning rubber, so we taxied clear of the runway and had ARFF (Airport Rescue Firefighting) come inspect the gear and wheels. No problems found by ARFF. Tower had the runway inspected. Nothing found. I had ARFF follow us to the gate where we made an AML entry and had a lengthy discussion with Maintenance. During the takeoff roll the throttles never made it to Takeoff Thrust and I was looking outside the whole time, but the speed achieved was well below 80 kts. Probably around 40-45 kts. In addition, on taxi out when brakes were applied to stop in line they often "chattered." **We suspected a brake problem or asymmetric thrust. I'm not sure why it happened.** I've seen asymmetric thrust before and it is easily corrected with rudder to steer back to centerline. This plane was very difficult to get turning back to the left.

Synopsis

Air carrier flight crew reported the takeoff was rejected after the aircraft drifted to the right and was not responding to rudder inputs.

Time / Day

Date : 202012

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B757-200

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Flight Phase : Initial Climb

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 : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1778751

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Inflight Event / Encounter : Other / Unknown

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

B757 Captain reported a runaway stabilizer trim issue after maintenance. Runaway / Uncommanded Stab trim. Could override with trim switch. [There was a] fault in the auto trim transducer. Ground check and test fly all aircraft coming out of heavy maintenance.

Synopsis

B757 Captain reported a runaway stabilizer trim issue after maintenance.

Time / Day

Date : 202012

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

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

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

Component

Aircraft Component : Parking Brake

Aircraft Reference : X

Problem : Improperly Operated

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)

Experience.Flight Crew.Total : 10000

Experience.Flight Crew.Last 90 Days : 56

Experience.Flight Crew.Type : 180

ASRS Report Number.Accession Number : 1778455

Human Factors : Situational Awareness

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

Experience.Flight Crew.Last 90 Days : 23

Experience.Flight Crew.Type : 162

ASRS Report Number.Accession Number : 1778673

Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe

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

Anomaly.Ground Event / Encounter : Other / Unknown

Detector.Person : Ground Personnel

When Detected : Taxi

Result.Flight Crew : Became Reoriented

Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

Before push checklist and Ramp tower clearance to push were completed / obtained per procedures. Following standard pushback verbiage from the ground crew, I released the brakes. Pushback and No 2 engine start proceeded without incident. Ground crew instructed to 'Set Brakes' - at this time I read back 'Parking brake set, pressure normal' while the FO (First Officer) and I visually checked the red parking brake indicator for illumination and Brake Press gauge for 2800 PSI. Ground crew then announced 'Aircraft disconnected by-pass pin removed' to which I replied 'Disconnect headset.' Shortly after this statement the aircraft appeared to move forward unexpectedly. The ramp agent came back on headset with 'Set brakes set brakes' to which I applied brakes. Apparently the parking brake was not set, as we had intended and thought, and an uncommanded aircraft movement had occurred. The ramp agent came on the interphone and indicated that all was fine on the ground, and standard signals were given for ramp departure. Upon crew debrief, one of the threats that we identified was the sun shining into the cockpit, making the red parking brake light less apparent to the crew. Another threat was the general distraction of normalcy and not blocking out the sunlight's glare to verify aircraft condition. We are glad no one on the ground was injured and will learn from this experience.

Narrative: 2

Before push checklist was completed. Received our push back clearance and the Captain communicated with the ground crew standard tow bar less pushback clearance and released the brakes appropriately. Pushback was completed uneventfully and during so we were cleared for engine start after which the Captain had me start the No. 2 engine. The ground crew instructed to 'Set Brakes.' I saw good brake pressure - 2800 psi, and what I believed to be the red Parking Brake light illuminated so I continued my duties of setting the packs appropriately. The ground crew announced "aircraft disconnected - bypass pin removed" and I heard the Captain respond with "Disconnect Headset." Shortly after this the aircraft began an uncommanded movement forward, ground crew came on headset Immediately saying "Set Brakes Set Brakes" to which brakes were applied and the aircraft stopped the slow roll and the Parking Brake was appropriately verified engaged at this time. The ramp crew came back on the inter phone and indicated all was fine on the ground, and standard signals were given for departure. Apparently our parking brake was not set after all when we initially thought, and upon debrief we both agreed the threats encountered were the glare of the sun on the parking brake light illuminating it more red than usual, as well as the general distraction associated with starting engines and push back tasks in general. We did not properly block the sun's glare and we should have been more vigilant to ensure it was set properly. We are both thankful nobody on the ground

was injured and we will learn from this experience in order to prevent it from happening again.

Synopsis

B737 flight crew reported uncommanded aircraft movement occurred following pushback without brakes set.

Time / Day

Date : 202012

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

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

Airspace.Class B : ZZZ

Component

Aircraft Component : Mach Trim

Aircraft Reference : X

Problem : Malfunctioning

Person

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 160

ASRS Report Number.Accession Number : 1774832

Events

Anomaly.Aircraft Equipment Problem : Less Severe

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

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 : Returned To Departure Airport

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Procedure

Primary Problem : Aircraft

Narrative: 1

On climb out, aircraft nose pitched up more than normal and I was pushing nose forward and trimming down. I noticed the trim was not moving on the trim tab indicator. I had the First Officer attempt to reset stab and Mach trim. I turned on autopilot to see if the autopilot could trim it out. That resulted in a autopilot Nose Up Trim Caution message and I turned off the autopilot and resumed manually flying the aircraft. The nose up trim condition did not improve. I transferred aircraft control to the First Officer while I referenced the QRH. I read through the stab trim and Mach trim runaway procedures even though we did not get a runaway trim message. Every time we tried to reset stab/Mach trim the trim increased by .4 and would not let us lower the trim value making the aircraft more nose up trimmed. I advised ZZZ Departure and ran the appropriate check lists and returned to the field landing on Runway 28L. I think the main problem was the Mach trim inputs from the aircraft computer system which caused the stab trim indicator to increase every time we disconnected and re engaged the stab/Mach trim system. The pilots went back to the hotel after the flight. I ran into the pilots who bought the aircraft in the night before at the hotel and they said that they had an autopilot nose up trim situation after take off from ZZZ1 and they reset it according to the QRH with no other problems.

Synopsis

Captain reported an uncontrollable Mach Trim condition that caused an Air Turn Back and precautionary emergency landing.

Time / Day

Date : 202011

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

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

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Component

Aircraft Component : Flap Control (Trailing & Leading Edge)

Aircraft Reference : X

Problem : Malfunctioning

Person

Reference : 1

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1769582

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While descending on the ZZZZZ3 RNAV Arrival into ZZZ, the First Officer deployed the flight spoilers in order to slow the aircraft between the ZZZZZ intersection and the ZZZZZ1 intersection so as to meet the 10,000 foot/250 knot airspeed restriction at ZZZZZ1. When she deployed the flight spoilers, the aircraft began an uncommanded roll to the right, approximately 10 degrees at maximum flight spoiler deployment. This behavior is not normal and as the First Officer retracted the spoilers I activated the flight control synoptic page. All spoilers were retracted in agreement with the flight spoiler handle. I then asked the First Officer to deploy the spoilers slowly so I could observe the synoptic page indications. The spoilers deployed normally according to the data provided but the aircraft still rolled to the right. The First Officer retracted the spoilers and we continued onward to ZZZ. On approach to Runway XXL and after being cleared for the visual approach, the First Officer requested "flaps 8" to configure the aircraft for landing and as I selected flaps 8, I received a "FLAPS FAIL" amber caution message along with a "Yaw Damper 2 Inop" white status message. I activated the flight control synoptic page and saw that both slats were deployed at 20 degrees with a green indication, the left flap was deployed at 1 with an amber indication, and the right flap was in an unknown position as indicated by "--" with an amber indication. I notified ATC and Dispatch as well as the flight attendants as to the nature of the emergency, an approximate landing time of 10 minutes, no signal to brace will be given and I asked if there were any abnormal events or conditions in the cabin. The Lead Flight Attendant said no abnormalities were present and I transferred the radio control to the First Officer while I executed the instructions set forth in the Quick Reference Handbook, page 9-8, "FLAPS FAIL msg" (amber caution). After determining the landing speed and landing distance required, I decided that a landing could be performed on Runway XXL, 12,000 ft. in length. I advised air traffic control that we were ready to land and I then took the flight controls from the First Officer and landed the aircraft. Upon arrival at the gate, I contacted the Dispatcher, Flight Coordinator, Maintenance Control, and shortly thereafter, the Chief Pilot's Office.

Flaps failure in the approach and landing phase. Uncommanded roll due to spoiler deployment and yaw damper 2 inoperative were possible contributing causes, but unable to determine with any degree of certainty as to whether or not any relation existed between them.

Synopsis

Air carrier flight crew flying CRJ-700 aircraft reported flap malfunction on approach.

Time / Day

Date : 202010

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : IAD.Airport

State Reference : DC

Altitude.AGL.Single Value : 100

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : PCT

Aircraft Operator : Air Carrier

Make Model Name : Embraer Jet Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Final Approach

Airspace.Class B : IAD

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : IAD

Aircraft Operator : Air Carrier

Make Model Name : A350

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Final Approach

Airspace.Class B : IAD

Aircraft : 3

Reference : Y

ATC / Advisory.Tower : IAD

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Final Approach

Airspace.Class B : IAD

Person : 1

Reference : 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 : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number.Accession Number : 1768695
Analyst Callback : Attempted

Person : 2

Reference : 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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1768873

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

While on final to RWY 1R we were following an A350 for 1R. We elected to remain 1/2 dot - 1 dot above glideslope as the winds aloft and at surface were relatively calm with slightly quartering tailwind. As we descended below 100 feet AGL we experienced the tell tale signs of wake turbulence. Luckily the aircraft did not experience any violent pitch or roll oscillations. A missed approach was executed and we immediately cleared the wake vortices. We were given vectors for another visual to RWY 1R. On the second approach we had momentary wake turbulence at 2000 feet MSL following an A320. As stated earlier the wind conditions being calm at all altitudes were prime for wake turbulence. The main purpose of this report is to draw attention to hazards of wake turbulence. While we all appreciate efficiency of the national airspace system, lots of separation I feel is the key to preventing these occurrences. We had noticed the aircraft ahead of us was left and right of centerline on approach and feel there may have been glideslope deviations as well. This very well may have caused staying high on the glideslope on our part to [be of] no benefit if they were high as well.

Narrative: 2

While receiving vectors for the visual approach to RWY 1R we were told to follow a heavy A350. The controller notified us we were 3 1/2 miles in trail and to caution for wake turbulence. The Captain (pilot flying) told me he would stay above the glideslope to avoid the wake turbulence. We remained 1/2 dot to 1 dot above the glideslope for the entire approach with no signs of turbulence. As we descended below 100 feet AGL we experienced two rolling moments to the left, both of which were corrected by the Captain. These oscillations were not extreme, but were clearly due to the wake turbulence. As these occurred the Captain called and executed a go around, immediately exiting the heavy aircraft's vortices. We were then vectored around for a second visual approach to RWY 1R, this time following an A320. During the approach a light quartering tailwind was reported. We once again remained slightly above glideslope and only experienced minor turbulence on the approach. This situation would have been avoided with increased separation from a heavy aircraft. The efficiency gained from using minimal separation on landing aircraft does not outweigh the risks of wake turbulence. Even by remaining high on the glideslope we experienced an uncommanded roll at a low altitude.

Synopsis

EMB flight crew reported two wake turbulence encounters on successive approaches to IAD.

Time / Day

Date : 202010

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.AGL.Single Value : 0

Aircraft : 1

Reference : X

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Takeoff / Launch

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

Make Model Name : Widebody Transport

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Flight Phase : Taxi

Person

Reference : 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 : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1764880

Human Factors : Situational Awareness

Events

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 : Regained Aircraft Control

Assessments

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

Narrative: 1

Momentary loss of control during takeoff. ORD ATIS indicated winds at 180/11 for our Runway 28R (full length) takeoff. Just prior to our takeoff ATC had cleared Aircraft Y to cross our runway and hold short of 28C, somewhere near mid-runway, if I recall correctly. While initial takeoff roll was uneventful, we had a sudden and aggressive yaw to the left which had me (as pilot flying) suspect we had an engine failure, but there was no loss of thrust. Aircraft responded well to corrective rudder inputs, but was destabilized by the event. Within second of the event we strongly suspected that the engine thrust of the freighter was causal to our sudden yaw to the left. Advised ATC upon being asked to switch to Departure frequency that we had concern over this event, but did not advise we would be submitting a report. However, given the possibility of far more negative consequences had the event occurred at a lower airspeed (such as if we had had an intersection departure), I now feel that a report is warranted to investigate the specific details of this event, and prevent a future loss of control on takeoff event which could lead to a hull loss and/or fatalities. Hold all heavy and larger aircraft facing runway so as to prevent engine thrust impact on landing and departing aircraft.

Synopsis

Large Transport Captain reported a Widebody Transport crossed runway he was departing resulted in momentary loss of control due to the Widebody Transport's jet blast.

Time / Day

Date : 202009

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Descent

Airspace.Class B : ORD

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class B : ORD

Person : 1

Reference : 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 : 76

Experience.Flight Crew.Type : 2284

ASRS Report Number.Accession Number : 1762475
Analyst Callback : Completed

Person : 2

Reference : 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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 5809
Experience.Flight Crew.Last 90 Days : 99
Experience.Flight Crew.Type : 4260
ASRS Report Number.Accession Number : 1762514

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

In descent from 9000 to 7000 with autopilot engaged hit by moderate jolt of wake turbulence. Continued descent and aircraft began to roll past 30 degrees angle of bank. Autopilot disengaged and aircraft rolled upright. Autopilot reengaged. Checked on flight attendants, all were ok. No passengers were up at the time. Enquired ATC about who we were following. Appeared to be a B777 ahead going to a different runway.

Narrative: 2

While descending from 9,000 to 7,000 we were given a turn to 170 for vectors to intercept the ILS 9R. In the turn, we experienced wake turbulence - with a bank angle approximately 30 to the right. The Captain disengaged the autopilot and hand flew the airplane back to level flight. I checked on the flight attendants to make sure they were all ok because it was so abrupt and sudden. All 4 of the flight attendants reported to me they were fine. Within a couple of minutes at 7,000', we encountered wake turbulence again. This time it was a 40 - 45 degree bank angle to the right. My Captain was still hand flying and recovered the airplane. I asked ATC what type of aircraft we were following, the controller responded we weren't following anyone but there was a 777 ahead of us but 2,000' below us. The 777 was being vectored ahead of us for [RWY] 10C. Perhaps more spacing was required even though we were being vectored for different but parallel runways.

Synopsis

B737 flight crew reported encountering wake turbulence on arrival into ORD in trail of a B777.

Time / Day

Date : 202009

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : NCT.TRACON

State Reference : CA

Altitude.MSL.Single Value : 15000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 100

Light : Daylight

Aircraft : 1

Reference : X

Aircraft Operator : Corporate

Make Model Name : Citation V/Ultra/Encore (C560)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Flight Phase : Initial Climb

Route In Use : Vectors

Airspace.Class E : ZZZ

Aircraft : 2

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Airspace.Class E : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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)

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 24000

Experience.Flight Crew.Last 90 Days : 75

Experience.Flight Crew.Type : 1900

ASRS Report Number.Accession Number : 1762408

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : NMAC
Anomaly.Deviation - Track / Heading : All Types
Detector.Automation : Aircraft RA
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Miss Distance.Horizontal : 6000
Miss Distance.Vertical : 500
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

I was the pilot not flying. We were on an IFR flight, very clear visual conditions and we were being vectored after departure by NorCal Approach.

We were in an ATC instructed turn to a heading of 180 degrees from an easterly heading. We were on a vector and turning right to a 180 degree heading at 15000' at full speed.

ATC asked us to "expedite" a climb to 17000' and turn 20 degrees left and he advised us of traffic at 12-1 O Clock position relative to us and apologized. I looked outside and saw an aircraft at 10-11 O Clock position, not 12-1 and it was slightly higher than us it appeared or maybe even at our altitude. A turn towards the aircraft would turn us directly into them. I saw the aircraft on our TCAS, it was showing 300 ft. above us.

It was peculiar and hard to accommodate a rushed expedited climb for only 2000 ft. but we complied with me setting the altitude alerter and the copilot selecting a heading change and selecting a climb from the autopilot which put us both heads down momentarily. Suddenly our TCAS advised "Traffic" and I looked back up and out the front of the aircraft and at the 11 O clock position I saw the aircraft still in the same position and moving closer towards 11:30 O clock position. I saw the aircraft clearly and it was at 11-11:30 O Clock position and it was not changing in the windscreen position. We had started to initiate a climb but the traffic was now moving steadily closer to in front of us still and a turn to the left and climb looked wrong visually and it was into the other aircrafts path.

The TCAS System now blurted out "Traffic" and the target turned yellow on the TCAS display. This was immediately followed by the TCAS system telling us to descend, we stayed wings level and a RA Descend Command was coming from our TCAS. I saw the aircraft the entire time visually and the copilot did not see the aircraft due to the center pillar blocking it from his view, this was because it was in the 11 O clock position. I took control of the aircraft and turned the autopilot off and stopped the climb which appeared

to put us directly in conflict with the other aircraft who visually was at or slightly above us. We followed the TCAS systems order to descend and passed under the other aircraft which was initiating its own descent, I did not have time to communicate to ATC as I was extremely busy avoiding the other aircraft, we could see it pitch down aggressively. We descended rapidly and the other aircraft passed overhead. After we passed the other aircraft we continued the climb to 19000 ft. as that was the new ATC instruction and to continue on the 180 heading. I was shocked we were turned into the path of another aircraft. My copilot who was initially the pilot flying was confused as to the rapidity/seriousness of the situation as I took control and told him I was maneuvering to avoid an oncoming aircraft.

Several moments afterwards ATC asked that we call them and discuss. They advised us they were not talking to the other aircraft and that the other aircraft was talking to another frequency and was climbing to our altitude of 15,000 ft. I feel that the delay in the radar at the ATC facility or the ATC specialists mistake and telling us traffic was at 12-1 O clock when in reality it was at our 10-11 O clock position led to the confusion. When I first saw the aircraft it was probably a mile or two away and a left turn he was suggesting and a climb would have turned us directly into the other aircrafts path and this was confirmed by a TCAS "Traffic" Alert and a Resolution Advisory (RA) that was advising us to descend.

Further complicating matters while we were descending was the controller then was telling us to turn to a "270 heading" which was 90 degrees to the right and to maintain visual contact I felt we would lose visual contact in a turn of any sort during this evasive maneuver. I instructed the ATC specialist that we were not turning or climbing, this was due to the imminent traffic threat. We continued to descend and the other aircraft passed overhead.

In hindsight I think we should have been informed of the traffic earlier and the fact that he was issuing what appeared to be a turn toward traffic confused us. The non-standard phraseology of an apology was further confusing.

I feel that the aircraft he was telling us about was not where he saw on his radar screen and it was visually different for us and this caused some momentary confusion.

In the end, I feel that this was an avoidable situation that was exasperated by the TCAS RA Command. The other aircraft was a drop zone aircraft that was known in the area but we should have been advised of their proximity to us earlier so we could have looked for the aircraft. This all happened very fast over a time period of 30 seconds.

Synopsis

CE-560 flight crew reported taking evasive action to avoid a collision with another aircraft.

Time / Day

Date : 202009

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

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 : Takeoff / Launch

Person : 1

Reference : 1

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

Experience.Flight Crew.Total : 2991

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 688

ASRS Report Number.Accession Number : 1761771

Human Factors : Confusion

Human Factors : Training / Qualification

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Relief Pilot

Function.Flight Crew : First Officer
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 2800
Experience.Flight Crew.Last 90 Days : 223
Experience.Flight Crew.Type : 997
ASRS Report Number.Accession Number : 1761770
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC
Communication Breakdown.Party2 : Flight Crew

Person : 3

Reference : 3
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)
Experience.Flight Crew.Total : 23721
Experience.Flight Crew.Last 90 Days : 199
Experience.Flight Crew.Type : 199
ASRS Report Number.Accession Number : 1761778
Human Factors : Situational Awareness
Human Factors : Confusion
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected.Other
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Rejected Takeoff
Result.Flight Crew : Returned To Gate

Assessments

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

Narrative: 1

All pilot crew members were present at scheduled report time, and pre-flight planning was accomplished as a crew. We arrived at the aircraft together approximately one hour before scheduled push time. Flight deck preparation duties were accomplished uneventfully in accordance with SOP. During flight deck preparation, I was designated by the Captain as the Pilot Monitoring for the first leg. The Captain accomplished the departure briefing, and I do not recall any deviations from the standard briefing. We pushed one minute early and proceeded uneventfully to Runway XXC. There were no aircraft anomalies during start and taxi. When cleared by ATC and after accomplishing runway verification, we initiated the takeoff roll. Another heavy aircraft had just departed on the same runway. The Captain made the "check thrust" callout, and I replied with the "thrust set" callout. After verifying all three airspeed indicators were matched and increasing, I focused my attention on the engine instruments while periodically cross-checking the airspeed indicator. All aircraft systems appeared to be performing normally, and I noticed normal aircraft acceleration. I glanced down the runway once prior to making the "100 knots" callout to verify that we were tracking centerline, then remained inside the cockpit until the Captain initiated the reject. I don't recall any significant yaw during the takeoff roll other than normal motion associated with the tracking of runway centerline. Approaching V1 (Takeoff Decision Speed), the Captain pulled the throttles to idle, initiating a rejected takeoff. I was surprised by this action, as I had not sensed a condition requiring a rejected takeoff. I did not hear a "reject" callout. I noticed the speedbrake handle deploy and felt the RTO (Rejected Takeoff) brakes engage, but I do not remember looking to verify that the thrust reversers were in reverse. I heard the "V1" callout shortly after the reject was initiated. I did not make the "80 knots" callout. When we were almost stopped, I made a "remain seated, remain seated" PA announcement. I reported to ATC that we had rejected on runway XXC and that we were stopped on the runway between the five and six boards. I was confused about why the Captain had rejected the takeoff. I assumed he had seen something that I hadn't, and I was searching the instrument panel for the reason. The Captain said he felt a pronounced right swerve that felt like an engine failure, which prompted him to reject the takeoff. The IRO suggested looking at the wheels synoptic to check for a blown tire, but there was no indication of one. At the IRO's recommendation, we completed the rejected takeoff non-normal checklist. We did not request emergency vehicle response. We taxied clear of the runway and held position for a few minutes with the parking brake released while monitoring brake temperatures. I recall the hottest brake being number 7 with a value of 7.7. With brake temperatures no longer increasing, we elected to taxi to the gate, and coordinated with ATC, Operations and [Maintenance Control] for a gate return. We accomplished the BRAKE TEMP non-normal during the taxi back to the gate. Upon blocking in, we debriefed Maintenance in the cockpit and then departed the aircraft with the parking brake released after accomplishing all post-flight duties and a flight crew debrief. I spoke with [Operations] and completed a human factors questionnaire with her. While accomplishing flight deck preparation after plane swap and re-release, I was released from the trip.

I recall V1 being 137 knots. I estimate the reject was initiated at approximately 130 knots, because I heard the automated "V1" callout occur just after the reject was initiated. The "V1" callout definitely occurred after the reject was initiated, because I remember being confused by sensing the deceleration at the same time as hearing the "V1" callout. I suspect there was some residual acceleration after the throttles were pulled to idle which triggered the "V1" callout, but by the time I heard the callout we were already decelerating.

Narrative: 2

I was in the Jumpseat. It was the Captains takeoff runway XXC. At 120 to 130 knots, the Captain rejected the takeoff without announcing the Reject.

The airplane came to a complete stop on the runway. A few seconds passed, I said, who's gonna say remain seated? The FO (First Officer) said, I will, and made the remain seated call over the PA.

I said, we need to tell ATC we rejected. The FO then let ATC know.

I realize that the ATC call comes before the remain seated call. My biggest concern at that moment was the possibility of an un-commanded passenger evacuation. And since no one in the cockpit was saying or doing anything yet, I strongly suggested that someone say, REMAIN SEATED.

A few seconds went by. I said, should we do the Rejected takeoff checklist? The CA (Captain) agreed and called for it.

The FO began to read the checklist, then the Cabin call message displayed. I asked the Captain, do you want me to get that? He said yes.

The FA (Flight Attendant) on the phone asked if things were ok, then asked if we were going to make an announcement. I asked the Captain if he wanted to make a PA, he directed me to make an announcement.

I said, ladies and gentlemen, we have rejected the takeoff due to an abnormality, we are running a checklist, please remain seated with your seatbelts fastened and follow your flight attendants instructions.

As I finished the announcement, the FO was on step 5 of the rejected takeoff checklist.

The CA announced that he wanted to taxi clear of the runway and he released the brakes. I said, should we make sure that the tires are ok first? The FO selected the gear synoptic page. All tire pressures were normal, but brake temperatures were 3.5 and rising. The FO then continued with the Rejected takeoff Checklist.

I began to smell hot brakes in the cockpit, a hot rubber smell. Just then the cabin call light illuminated, I answered and the FA said that there was a hot rubber smell near door 3. I told her it was the brakes and that we would make an announcement. The Captain then directed me to make another announcement.

I said, ladies and gentleman, what you are smelling is the elevated temperature of the brakes, the indications are within limits, please remain seated and follow the flight attendants instructions while we finish our checklists.

The FO asked if we should call the fire trucks. The Captain said no I think we're ok.

Tower then asked us what the reason was for the rejected takeoff. The Captain told the FO that the airplane had an un-commanded yaw to the right. The FO relayed that information to Tower.

As we taxied clear of the runway the Captain said that he felt a yaw and thought that an engine had failed, that's why he rejected.

The Captain said let's go back to the gate, and directed the FO to call [Operations]. I interjected and said do you think we should call maintenance first? He said yes.

I called maintenance, explained the situation, I gave them the brake temps and asked their opinion on returning to the gate. Local maintenance said it would be fine to go to the gate. In hind sight, I should have called [Maintenance Control], but at the time it was more efficient to call local maintenance on the radio.

As we taxied to the gate I asked the Captain not to pull into the gate until I reviewed the rejected takeoff, and performance sections of the FM (Flight Manual). Even though I just asked maintenance, I wanted to be sure there were no restrictions on bringing an airplane with hot brakes to the gate.

I pulled up and reviewed [the FM sections] with the CA and FO. A BRAKE TEMP advisory message was now displayed.

We parked the airplane at the gate and maintenance came to the cockpit. One of the mechanics had a laptop. He asked the Captain what happened and typed the Captains response into his laptop. The Captain said he felt a severe yaw to the right, he thought it was an engine failure and he rejected the takeoff. [Maintenance] asked the FO if he felt the yaw, the FO said, not really.

[Maintenance] asked me if I felt the yaw, I told him that I felt a yaw to the left after the CA began the rejected takeoff maneuver.

[Maintenance] then said that he downloaded the data from the airplane and that no anomalies were found. The Captain said then maybe it was a gust of wind that yawed the airplane to the right.

I told [Maintenance] that the Quick Turnaround Landing Weight Limit was not exceeded and I referenced the FM performance section with him. In hind sight, I should have advised the CA and FO to include the information outlined in FO in their rejected takeoff maintenance write up.

The mechanics left, the Captain then debriefed. He said that he felt a significant yaw to the right, he said that he did not announce "REJECT" and that he should have. He thanked us for backing him up.

We went to the new airplane. I did the exterior preflight. I got a call from the [Flight Ops Manager] who asked me a list of HF (Human Factors) questions to gauge my stress level. I answered her questions.

15 minutes later the Captain's phone rang, it was the chief pilot who advised us that a safety investigation is underway on the event and that we were being pulled off line with pay.

Narrative: 3

Up on takeoff roll from Runway XXC at ZZZ, everything seemed normal in VMC conditions, temp 19 C and I believe wind was 240 at 7. Around 130 knots just before V1, I experienced a sudden veer to the right, so pronounced that it felt like an engine failure. Although it was not announced, when I came to a stop I was surprised that we did not have an actual engine failure. In my 31 years of experience with [the company] and 24 as a Captain, I have never had to reject and never felt this way on a takeoff roll.

The closest event that I can [relate] it with is V1 cuts in the simulator. After coming to a full stop, First Officer informed the tower and instructed the cabin to remain seated. We completed the rejected take off check list and determined that tire temps were stable and

not in red zone so we proceeded to exit runway and eventually taxied back to the gate without any issues.

I debriefed with the crew and IRO told me he felt something, and [he] definitely felt making correction to the left back to the center line.

Synopsis

B787 flight crew reported high speed RTO.

Time / Day

Date : 202008

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 : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Route In Use : Vectors

Airspace.Class D : ZZZ

Component

Aircraft Component : Nosewheel Steering

Aircraft Reference : X

Problem : Malfunctioning

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Check Pilot

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1754221

Events

Anomaly.Aircraft Equipment Problem : Critical

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

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : Taxi
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

We had about a 20 kt crosswind from the right during landing. Once we touched down, I told the Pilot Flying to add more aileron to the right so the wing would not lift up on the upwind side. As the plane settled down on the nose, the plane started to veer to the right. As we were leaving the center line, I started to push the left rudder, but I did not feel any pressure because the Pilot Flying had full scale left rudder already applied. After continuing to the right and getting closer to the right edge of the runway, I realized something was not right and I pulled the steering disconnect button. Once the steering was disconnected, we had control of the plane and was able to get it back on centerline. We advised Tower that we were having steering issues and might not be able to taxi off the runway knowing Company was landing right behind us. The Tower called the go around. Once we were almost stopped, I told the Captain to reengage the tiller because I was not sure if it was really the issue. When the tiller was reengaged, the plane again began to turn to the right. We turned the tiller to the left and the plane started to go straight. Knowing that the issue was the steering, we pulled the trigger again. Knowing that Company had gone around and we were on the only runway with a major weather system moving through, I continued to let the plane roll and controlled the direction with braking to get the plane off of the runway as I was taught at a previous carrier. Once we were clear of the runway, we attempted to contact Ops in ZZZ to inform them that we needed to be towed in and no one answered the radio. The Tower also attempted to call Ops in ZZZ and they were not successful either. After 10 minutes of calling Ops on the frequency, they told me they were at the gate waiting for us to pull in. I had to inform them that they would have to come out and tow us in. Airport Ops and the ramp crew drove out to tow us to the gate.

I believe we need to teach uncommanded swerving during landings in the sims. Most of these events that I can remember for the EMB145 have occurred during landings and several of these planes exited the runway as the nose wheel touches down. In [year X], Company ran off the side of the runway in ZZZ1 as the plane touched down in the same type of event. We also need to stress to the outstations that radio communication is very important and someone should be monitoring the frequency.

Synopsis

E175 Captain reported nosewheel steering failed on touchdown, resulting in Captain disconnecting nosewheel steering and using rudder pedals to regain aircraft control and exiting the active runway.

Time / Day

Date : 202007

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : CLT.TRACON

State Reference : NC

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CLT

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 : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CLT

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 Approach

Airspace.Class B : CLT

Person

Reference : 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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1754179

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC
Analyst Callback : Completed

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
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 : Human Factors
Primary Problem : Human Factors

Narrative: 1

We were being vectored for the ILS 18L into CLT. We had been on the MLLET arrival landing south, then given a 290 heading and altitude of 4,000 ft. On that heading, approximately 4 miles east from approach centerline and outside CAVI, we encountered strong wake turbulence. We got two minor bumps, enough to realize it was wake, then suddenly the airplane rolled 30 to 40 degrees to the left. I recovered immediately by rolling back to the right, and the autopilot disconnected itself. There was no more wake after that. There was no altitude deviation, and I don't think heading deviated by more than 10 degrees. The turbulence was no more than moderate. We missed a radio call with vector to intercept during the event. We reported the event to Approach, and they gave us a 120 degree turn onto the localizer. Upon completing the turn, we reengaged the autopilot, and continued the approach and landing without incident. The flight attendants reported no injuries to themselves or passengers.

[There were] A few minor bumps then the airplane rolled left.

We were about 10 miles behind an Airbus A320. I don't know if the wake was from that aircraft, or if it blew over from Runway 18C, since winds were out of the southwest. There was a low overcast cloud layer, and stronger winds beneath the clouds, so conditions may have caused the wake to not dissipate as quickly as normal.

Synopsis

CRJ-900 First Officer reported encountering wake turbulence on arrival into CLT 10 miles in trail of an A320 that resulted in an uncommanded 30-40 degree roll.

Time / Day

Date : 202007

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 15000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : 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

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class B : ZZZ

Component

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Failed

Person : 1

Reference : 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 : 1751202

Person : 2

Reference : 2

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 : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1751204

Events

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

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

On arrival into ZZZ descending from 15,000' to 11,000', with power not at idle. I noticed that the #2 engine (Right) was unresponsive with notable power loss and associated yaw. We observed the fuel flow drop to Zero with a 300lb fuel imbalance between main tanks. We also observed the R engine oil pressure dropping as well. We ran the QRH for both the associated issues which instructed us to perform an in flight shut down and single engine landing. We accomplished the checklists and QRH safely. No further incidents observed.

Unknown cause. Engine had an uncommanded rollback of power with subsequent loss of engine. QRH procedures followed.

I don't believe anything could have been done differently. All normal operations were followed as well as QRH procedures followed.

Narrative: 2

On arrival into ZZZ descending from 15,000 to 11,000, with power not at idle. Our right engine became unresponsive, with notable power loss, and associated yaw. Watched fuel go to 0, with a 300 lbs. imbalance between main ranks. Ran low fuel press QRH and low oil press QRH. Instructed us to do an inflight shut down, and single engine landing. Which we accomplished safely.

Unknown at this time. Right engine had an uncommanded roll back. Single engine shut down and landing.

Nothing we already do single engine shut down and landing.

Synopsis

Flight crew reported an uncommanded power rollback in the right engine, which resulted in an inflight shutdown and a subsequent landing.

Time / Day

Date : 202006

Local Time Of Day : 0601-1200

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 : 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

Route In Use : Vectors

Airspace.Class B : ZZZ

Maintenance Status.Maintenance Deferred : N

Maintenance Status.Records Complete : Y

Maintenance Status.Released For Service : Y

Maintenance Status.Required / Correct Doc On Board : Y

Maintenance Status.Maintenance Type : Unscheduled Maintenance

Maintenance Status.Maintenance Items Involved : Testing

Maintenance Status.Maintenance Items Involved : Inspection

Component

Aircraft Component : FCC (Flight Control Computer)

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Reference : 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

Experience.Flight Crew.Last 90 Days : 49.17
ASRS Report Number.Accession Number : 1748350

Person : 2

Reference : 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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1749354

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight 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 : FLC Overrode Automation
Result.Flight Crew : Took Evasive Action
Result.Aircraft : Equipment Problem Dissipated

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

At Vr, approximately 137 knots, aircraft had a pronounced right yaw lasting briefly. There were no gusts at the time and no pilot input to the rudder. This pronounced yaw lasted about 2 seconds and then ended with the aircraft stable afterwards. rest of climb out, level off and descent into ZZZ was uneventful regarding this issue. Called maintenance enroute, plus submitted a report. In addition, mechanics met the aircraft in ZZZ to discuss.

Narrative: 2

On t/o roll we experienced "hard push" to right (approx. half distance to runway edge). winds were calm, engine indications normal, no pilot inputs. A/T was engaged with reduced pwr. Regained center line and continued flight with no further incidents

Synopsis

Pilots reported an uncommanded yaw at Vr.

Time / Day

Date : 202006

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 43000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

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 : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

Component

Aircraft Component : AC Generation

Aircraft Reference : X

Problem : Failed

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1747194

Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.ATC Issue : All Types

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

Detector.Person : Flight Crew

Result.General : Maintenance Action

Result.General : Flight Cancelled / Delayed
Result.Flight Crew : Diverted
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

We were cruising at FL430 in VMC conditions. We suddenly lost all electrical power and cabin pressurization. The memory item is to don oxygen masks and perform an immediate descent. We began accomplishing both of these. With a loss of electrical power, the Phenom starts Dutch Rolling right away. As the Pilot Flying, my attention was primarily focused on getting the aircraft down and controlling the roll. I had been unable to turn on my mask mic right away, and assumed the Non-Flying Pilot was communicating with ATC and squawking 7700. It turns out that he was unable to speak to ATC. I think we probably descended to about 25,000 feet before either of us talked to ATC. Once I made contact with Center, we requested priority handling and received excellent assistance.

Once I had the aircraft under control and we were at a lower altitude, the SIC informed me that he could not communicate. At that point I gave him the flight controls while I got my mask mic working and I contacted ATC.

The loss of electrical power prevented the non-flying pilot to communicate outside the aircraft. My focus was on controlling the dutch roll while descending at up to 8000 FPM. As my mask mic was not yet working, I was unaware that the SIC had not spoken to ATC.

ATC responded right away, gave us clearance to 10,000 feet and assisted us getting on the ground.

We (Company) should probably practice this event, or at least discuss it during recurrent. It was very confusing, and we were quite task saturated.

Synopsis

EMB-505 flight crew reported total loss of electrical power caused multiple systems failures resulting in a diversion and landing.

Time / Day

Date : 202005

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 150

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

Flight Plan : IFR

Flight Phase : Takeoff / Launch

Person

Reference : 1

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)

Experience.Flight Crew.Last 90 Days : 105

ASRS Report Number.Accession Number : 1743208

Human Factors : Situational Awareness

Human Factors : Training / Qualification

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

During takeoff roll past 100 knots, saw dust devil moving across end of the Runway (XL). With all the trash swirling in the dust devil I initially thought it was a flock of birds. The FO (First Officer) continued with a normal takeoff. At about 150 feet encountered a shake and

the aircraft rolled about 20 degrees to the left. FO corrected the roll and we continued the climb out and continued to destination. The predictive wind shear system never activated during the entire takeoff.

Synopsis

B737 Captain reported encountering an uncommanded roll during takeoff climbout.

Time / Day

Date : 202005

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.AGL.Single Value : 50

Environment

Flight Conditions : VMC

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Person

Reference : 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)

Experience.Flight Crew.Last 90 Days : 25

Experience.Flight Crew.Type : 2182

ASRS Report Number.Accession Number : 1742865

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 : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

On takeoff roll above 100 kts, I noticed what I thought was a flock of small white birds on the departure end of the runway. After VR and the "Rotate" call, I realized in the rotation

that it was not birds, but a dust devil, tornado type rotation of trash and papers. It was quite large, just left of centerline, but covering most of the runway width, and spanning well above our altitude. The winds seemed to be quite intense, judging by the speed of the trash whirling around.

As the airplane began to lift off, I noticed a vibration on the airplane, possibly a buffet, and the airplane did not seem to be climbing as expected. I began to reach for the thrust levers but was forced back to the yoke when we hit the dust devil and the airplane aggressively rolled to the left. The captain and I both applied aggressive roll input in the opposite direction. The aircraft was slow to respond, but eventually did and returned to level flight.

I did not have time to look at the instruments and notate the roll angle or airspeed loss, but there were no aural or tactile alerts from the aircraft. Once through the dust devil, the aircraft climbed normally, and the rest of the flight was uneventful.

Synopsis

B737NG First Officer reported encountering a dust devil shortly after takeoff that resulted in an uncommanded aggressive roll to the left.

Time / Day

Date : 202004

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.MSL.Single Value : 3000

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B747-400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Climb

Component

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Reference : 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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1739339

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Human-Machine Interface

Person : 2

Reference : 2

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 : 1739439

Human Factors : Time Pressure

Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation / Discrepancy - Procedural : Clearance

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

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Maintenance Action

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Primary Problem : Aircraft

Narrative: 1

During the climb out of ZZZZ we got a Master Caution ">Autopilot" on the EICAS. At the time the right autopilot was connected, and in LNAV and VNAV modes. There was no autopilot disconnect, and there were no FMA mode flags. We noted the issue, looked at what the QRH had to say, and continued. We decided that the best thing to do was monitor the situation.

We leveled at 8000 ft. and began getting "direct to" clearances that shorten the distance from ZZZZ to ZZZZ1. We had begun a descent that put us in a good position to land in ZZZZ1, but then our route was cut much shorter than anticipated. We were cleared to descend to 3000 ft. on a heading of 220. I had called for flaps 5, and had the speed brakes extended in FLCH mode to help get us down a little quicker. The speed bug was down between Vref for flaps 1 and 5 with the flaps extended (not in transit) to Flaps 5. Passing about 4500 ft. in the turn to heading 220 we were given further turn to 280, and cleared for the ILS approach. We do not have a chart for the ILS approach to that runway and were shooting a VFR approach, and the Captain was stating this to the controller to get a clearance for the visual approach - consistent with the limited information available for this airport in [software].

I was looking at the heading window, dialing heading 280 when the Captain called out that we were approaching a speed that would overspeed the flaps. I stopped, looked at the PFD (Primary Flight Display) to assess the situation that had suddenly developed, and my first impulse was to change the vertical mode to V/S to shallow the descent in order to slow the airplane, in the 1-2 seconds that I had moved my hand to carry out that change the Captain began saying "Pull up! Pull up! Disconnect the autopilot and pull up!" I looked back at the PFD, saw that we were at the high speed cue, and descending through 3000 ft. The Flight Director had captured the altitude. "ALT" was displayed on the FMA. There were no FMA mode flags. It appeared that the autopilot had stopped following the Flight Director guidance, and may have pitched down further. I disconnected the autopilot and recovered the aircraft to straight and level flight as quickly as I felt I could without over

stressing the wing. We had descended to roughly 2300 ft. Throughout the recovery the Flight Director showed guidance to maintain 3000 ft.

There was some discussion as to whether we should attempt to climb back to 3000, or continue the approach from our present position. At 2300 ft. we were just slightly low on the approach. We were established on our straight-in course to the runway, and I had heard cleared for the approach at some point in the preceding few seconds. We confirmed our approach clearance, and continued the approach to a landing at ZZZZ1.

Once we shut down the aircraft we wrote up the autopilot as not functioning correctly because it failed to follow the Flight Director guidance. We could find no reason why it would've stopped following the Flight Director guidance prior to the event, and believed that the autopilot malfunction was the cause of the event.

This event highlights how rapidly a situation can develop. The only times my eyes were off the PFD were when I had them on the Mode Control Panel to control the autopilot. What I saw on the PFD when I looked back had me believing I must have been distracted for a significant time for this to develop, but I know that is not true. It developed within just a couple of seconds, and this was confirmed by the other pilots who didn't believe that I had missed anything.

The situation got to the point that it did because of a turn clearance that came at the exact moment that the autopilot stopped following the Flight Director, and it occurred right around the time that we would call 1000 ft. to level off. We all know this 1000 ft. is a critical time, and our crew was paying attention. It highlights that even when we're doing everything right, something can quickly develop.

As the pilot flying my mind went into an upset recovery mode for a few moments. The aircraft attitude was not outside the normal pitch or roll limitations, but I saw and treated this as a recovery in which I temporarily ignored route and altitude clearances until I was confident the plane was recovered to straight and level. This mentality was not easy to leave as we continued to the landing. In the future I will probably ask that we discontinue the approach for a few moments to ensure everyone in the cockpit (including myself) is ready to continue to the landing. To be roughly on glide path at 2300 ft. meant that when we recovered and continued to landing we were at least nearing an 8 mile final, and because of the issue we had to continue to move with purpose to continue that approach from a Flaps 5 configuration to being stable and configured at 1000 ft. Taking a moment to slow the tempo down after that event would've been a better course to take.

Narrative: 2

On climb out just before level off at 8000 ft. (short flight, final cruise altitude) we received an "auto pilot" caution message. I was the Pilot Monitoring and we went over the QRH (advisory QRH, no action) The Pilot Flying was advised that per QRH the Autopilot was working at degraded mode. The autopilot seems to work properly tracking L nav and leveling off at 8000 ft. and holding altitude properly. I asked the Pilot Flying to pay extra attention to the autopilot. Shortly afterward, we were descending to 3000 (FLCh mode) and on a turn towards the airport for visual approach. At 3000 ft. I called altitude and airspeed. I noticed [the] airplane wasn't leveling and airspeed actually accelerating towards flaps 5 limits. I called the Pilot Flying to disconnect the autopilot and pitch up to return to altitude and to prevent flaps over speed. We recovered around 2600 ft. and climbed back to 3000 ft. without exceeding AFM limitation (G loads and flaps over speed). We continue to [our] destination for a visual approach followed by a normal approach and landing. At the gate we entered [the] discrepancy in [the] aircraft logbook. Maintenance

could not duplicate issues after test and diagnostic.

This was a short flight with [a] high workload and ATC barrier. Even though this was a high workload environment. As a crew, we should have disconnected the autopilot and hand flown the airplane or use another autopilot. Pilot flying should have paid more attention to the airplane and so should have I (Pilot Monitoring).

I hope we can add a note in the QRH to try and connect [the] other autopilot even if the current one looks like it's doing a good job.

Synopsis

B747-400 flight crew reported continuing to use an autopilot after it had previously triggered an EICAS warning resulting in altitude and heading clearance deviations.

Time / Day

Date : 202003

Place

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

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
Nav In Use : FMS Or FMC
Flight Phase : Cruise
Airspace.Class B : ZZZ

Component

Aircraft Component : Aeroplane Flight Control
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
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.Total : 217
Experience.Flight Crew.Last 90 Days : 49
Experience.Flight Crew.Type : 217
ASRS Report Number.Accession Number : 1735588

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Flight Cancelled / Delayed
Result.General : Maintenance Action
Result.Flight Crew : Diverted
Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

On climb out of ZZZ, FO (First Officer) was PF (Pilot Flying) and experienced a runaway trim and speed trim failure annunciation light. Ran the QRH for both checklists. Contacted dispatch and was told to continue to ZZZ1. Asked for Dispatch to include [Maintenance] in discussion. While waiting for them to get back to us, the FO and I determined the best course of action was to return to ZZZ due to weather and terrain . We advised ATC and started back towards ZZZ. I briefed the flight attendants without preparing the cabin for evacuation. On approach FO continued to fly while I assisted with manual trim. Normal landing and taxied to gate to debrief with Maintenance. After talking with ZZZ [Chief Pilot] elected to discontinue the rest of our flying for the day.

Synopsis

B737 Captain reported an air return due to a runaway trim and speed trim failure.

Time / Day

Date : 202003

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ORD.Tower

State Reference : IL

Aircraft

Reference : X

ATC / Advisory.Tower : ORD

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

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class B : ORD

Person : 1

Reference : 1

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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1735208

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Distraction

Person : 2

Reference : 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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1735209

Human Factors : Distraction

Human Factors : Workload
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

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

Narrative: 1

While on approach to Runway 27L at ORD, at approximately a 10 to 15 mile final, we encountered wake turbulence. We were on glide slope and slowing to 170 kts. until the final approach fix as instructed by ATC. The wake turbulence resulted in an uncommanded roll to the right between 30 and 40 degrees. Upon the encounter the Captain who was Pilot Flying disengaged the autopilot and leveled the wings and began to return to the desired flight path. Four EICAS caution messages were displayed: AT FAIL, WINDSHEAR FAIL, STALL PROT FAIL, and AOA LIMIT FAIL. We waited a brief period to see if the messages would clear. They did not. At the Captain's direction, I began to run the QRH for the displayed messages. While running the QRH checklist for STALL PROT FAIL which included entering new approach speeds, the Captain realized that we were below 1,000 ft. AGL and not configured. We executed a go around. Initially we were told to level at 2,500 ft., then instructed to turn toward the north and climb 5,000 ft. and expect ILS Runway 27R. During this time, QRH items were completed and we returned for an uneventful landing Runway 27R.

ATC stated the largest aircraft ahead of us was an E175. Given the nature of the wake turbulence, we believe it is possible that we may have encountered a wake from heavier traffic to a parallel runway although we do not know for sure.

As a recommendation, it may be prudent to execute a go around earlier in these circumstances. We allowed the aircraft to get below 1,000 ft. prior to realizing that we were unstable while I was running the QRH. Given the added tasks created by the QRH checklist, it was easy to get behind the aircraft.

Narrative: 2

While on the localizer for ILS Runway 27L in ORD, we were descending in PTH mode coincident with the glideslope. Around 4,000 ft., we began to experience wake turbulence with a slight roll to the left the autopilot compensated and returned to level flight then we got a hard roll to the right which resulted in a bank angle between 30 and 40 degrees. I took over the controls and recovered from the roll as well as initiated a slight climb to get above the wake. During the event, multiple EICAS messages were presented. These included AT FAIL, WINDSHEAR FAIL, STALL PROT FAIL, and AOA LIMIT FAIL. After recovering the aircraft and returning it to the desired flight path, I queried ATC as to what

aircraft we were following. They said it was an E170. When I said we got pretty rough wake he said he wasn't sure what from since the aircraft in front of that E170 was an E145. We continued the approach while the First Officer ran the checklist. With the distraction of the wake event leading to multiple unusual checklists, I got behind the airplane and noticed the approach was not going to be stable. At that point I commanded a go around. We executed the go around, completed the checklists and landed on Runway 27R. Once on the ground the EICAS caution messages disappeared and were replaced by ADS PROBE 3 FAIL and ADS PROBE 1 FAIL messages.

During the event ATC did not mention what traffic was on ILS for 28C, but I did notice on TCAS there was one approximately 2 to 3 miles ahead on that approach. I did not ask what type it was and being in IMC I didn't get a visual, however I suspect the turbulence may have been from that aircraft since the winds were coming from the southwest.

In the future, I think it would be a good idea to go around earlier. We were hoping to get the checklists done but due to the number of them it wasn't possible and lead to a go around at a lower altitude than was necessary. Also, although my primary attention was still flying the aircraft, I allowed myself to get distracted watching the Pilot Monitoring make the changes associated with the abnormal checklists and this is how I got behind the airplane. In the future I'll do a better job as pilot flying to ensure the aircraft does not enter the undesired aircraft state.

Synopsis

E170 flight crew reported that a possible wake turbulence encounter resulted in an unstabilized approach and a go around.