

ASRS Database Report Set

Commuter and Corporate Flight Crew Fatigue Reports

Report Set Description.....A sampling of reports referencing Commuter and Corporate flight crew fatigue issues and duty periods.

Update Number.....35

Date of UpdateMarch 22, 2022

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

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

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

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

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

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

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

A handwritten signature in cursive script, 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: 1816732 *(1 of 50)*

Synopsis

The crew of a King Air 300 reported loss of control during landing but were able to regain control. The crew cited weather, including wet runway and cross winds; also sighting fatigue and a long duty day as contributing factors.

ACN: 1798524 *(2 of 50)*

Synopsis

Pilot reported a runway excursion during landing at BOI due to ambiguous lead-off runway and taxiway edge lighting configuration.

ACN: 1795514 *(3 of 50)*

Synopsis

Air taxi First Officer reported an altitude deviation during arrival and cited short staffing, fatigue and stress due to the COVID-19 pandemic as contributing factors.

ACN: 1780049 *(4 of 50)*

Synopsis

Air Taxi Captain reported flying an RNAV Approach which was not authorized at night.

ACN: 1758140 *(5 of 50)*

Synopsis

CE525B Captain reported improper procedure resulting in brake overheating and main tire fire.

ACN: 1756081 *(6 of 50)*

Synopsis

C172 pilot reported entering Class B airspace without a clearance.

ACN: 1739630 *(7 of 50)*

Synopsis

Flight crew reported executing an evasive maneuver in compliance of GPWS Terrain Alert during approach due to altitude excursion.

ACN: 1717647 *(8 of 50)*

Synopsis

Citation pilot reported the stepdown fix inside the Final Approach Fix was not entered in the FMS, which resulted in missing the stepdown altitude restriction and ATC issuing a low altitude alert.

ACN: 1704480 *(9 of 50)*

Synopsis

A Fractional jet pilot reported cancelling their trip due to fatigue due to the scheduling practices of their company.

ACN: 1697805 *(10 of 50)*

Synopsis

C206 pilot reported entering IMC while on a VFR flight plan.

ACN: 1696323 *(11 of 50)*

Synopsis

Phenom First Officer reported miscommunication with Ground Control resulted in a taxiway deviation.

ACN: 1693388 *(12 of 50)*

Synopsis

Medium Transport flight crew reported fatigue and distraction on final approach resulted in a landing on the wrong parallel runway.

ACN: 1675005 *(13 of 50)*

Synopsis

First Officer reported altitude deviation following loss of cabin pressure.

ACN: 1672818 *(14 of 50)*

Synopsis

C-208 Captain reported an NMAC after takeoff while in the airport traffic area.

ACN: 1631678 *(15 of 50)*

Synopsis

EMB190 Captain reported uncommanded rudder deflection in cruise flight resulting in a diversion.

ACN: 1630244 *(16 of 50)*

Synopsis

Citation 560XL Captain reported a GPWS event at the end of a long duty day.

ACN: 1629282 *(17 of 50)*

Synopsis

B767-300 flight crew reported various anomalies with the FMS.

ACN: 1626109 *(18 of 50)*

Synopsis

CRJ-200 flight crew reported encountering turbulence on approach into MSP that was possibly related to the Medium Transport they were following.

ACN: 1620197 *(19 of 50)*

Synopsis

A300 flight crew reported losing 500 feet in altitude and experienced large airspeed fluctuations during an encounter with severe turbulence at FL370.

ACN: 1619356 *(20 of 50)*

Synopsis

Embraer regional jet flight crew reported experiencing a "violent" roll to the right on approach to CYUL 7 miles in trail of a B777.

ACN: 1618084 *(21 of 50)*

Synopsis

Citation Captain reported a hydraulic problem during initial climb forcing them to return to the departure airport.

ACN: 1615821 *(22 of 50)*

Synopsis

E145 Captain reported a runaway stabilizer trim issue resulted in a return to the departure airport.

ACN: 1614873 *(23 of 50)*

Synopsis

B737 flight crew reported rejecting the takeoff at approximately 120 kts when the aircraft began to pitch up. It was later determined the stab trim was incorrectly set to an excessive nose up setting.

ACN: 1613267 *(24 of 50)*

Synopsis

EMB-145 flight crew reported an altitude deviation occurred after encountering wake turbulence on arrival into ORD in trail of a heavy aircraft.

ACN: 1609145 *(25 of 50)*

Synopsis

Falcon 20 First Officer reported an autopilot issue resulted in an altitude excursion and TCAS Traffic Advisory.

ACN: 1605188 *(26 of 50)*

Synopsis

C500 First Officer reported an engine loss at cruise led to flight crew communication and navigation issues.

ACN: 1605019 *(27 of 50)*

Synopsis

B737-800 flight crew reported the aircraft was unable to meet the published crossing restrictions.

ACN: 1604490 *(28 of 50)*

Synopsis

Corporate Captain reported using incorrect altimeter setting due to fatigue, resulting in erroneous altitude reporting.

ACN: 1603173 *(29 of 50)*

Synopsis

LJ35 flight crew reported an unstabilized approach and missed approach, along with severe turbulence, culminated with a hard landing in microburst, windshear conditions.

ACN: 1602782 *(30 of 50)*

Synopsis

B737NG flight crew reported a trim problem during climbout resulting in a return to field.

ACN: 1602134 *(31 of 50)*

Synopsis

A321 Captain reported QRH shortcomings and communication breakdown between flight crew and cabin attendants while troubleshooting uncommanded stabilizer trim malfunction.

ACN: 1601731 *(32 of 50)*

Synopsis

B737 Flight crew reported uncommanded 25-30 degree roll while retracting speedbrake. Uncommanded roll previously reported.

ACN: 1600787 *(33 of 50)*

Synopsis

Maintenance Technician reported being forced to work overtime, describes a high stress environment due to low staffing resulting in fatigue and an unsafe situation.

ACN: 1596965 *(34 of 50)*

Synopsis

A320 flight crew reported numerous system malfunctions during climb and returned to departure airport.

ACN: 1596615 *(35 of 50)*

Synopsis

Air carrier flight crew reported poor CRM when they entered an area of severe turbulence.

ACN: 1594888 *(36 of 50)*

Synopsis

B737 flight crew reported an overspeed situation while on descent to ORD.

ACN: 1594726 *(37 of 50)*

Synopsis

B737NG flight crew reported encountering wake turbulence on approach to IAH.

ACN: 1593828 *(38 of 50)*

Synopsis

ERJ flight crew reported receiving a terrain warning while on radar vectors for a visual approach to CHO, likely due to a nearby tower.

ACN: 1591953 *(39 of 50)*

Synopsis

CL600 flight crew reported a rejected takeoff due to the main entry door opening.

ACN: 1590852 *(40 of 50)*

Synopsis

CRJ-200 Captain reported an encounter with severe turbulence resulted in momentary loss of control on arrival into IAD.

ACN: 1590688 *(41 of 50)*

Synopsis

EMB-175 Captain reported system anomalies were annunciated after encountering wake turbulence 5 nm in trail of an A321 on approach to LAX.

ACN: 1590385 *(42 of 50)*

Synopsis

E145 Captain reported encountering severe turbulence which caused the auto pilot to fail.

ACN: 1590117 *(43 of 50)*

Synopsis

CRJ-900 flight crew reported encountering severe wake turbulence 10 nm in trail of a wide body transport aircraft climbing through FL175 departing CLT. Reporter recommended increased separation.

ACN: 1586140 *(44 of 50)*

Synopsis

A321 Captain reported uncommanded rotation prior to V1 that could not be overcome by the side stick.

ACN: 1585754 *(45 of 50)*

Synopsis

B787 flight crew reported a hydraulic system malfunction that led to a zero flap approach and alternate gear extension landing.

ACN: 1585089 *(46 of 50)*

Synopsis

B737NG flight crew reported uncommanded roll with autopilot engaged during descent when spoilers/speedbrakes were extended and retracted.

ACN: 1584964 *(47 of 50)*

Synopsis

B757 Captain reported the ailerons consistently rolled right after releasing the yoke during the off-gate flight control checks.

ACN: 1584377 *(48 of 50)*

Synopsis

Light Transport Captain reported a heading deviation on departure due to the First Officer entering the wrong route into the FMS.

ACN: 1583873 *(49 of 50)*

Synopsis

Air taxi Dispatcher reported company Part 135 dispatchers are allowed to work very long hours and that fatigue has compromised safety.

ACN: 1583652 *(50 of 50)*

Synopsis

Small Transport flight crew reported an autopilot malfunction as they were capturing the localizer causing them to leave their assigned altitude.

Report Narratives

Time / Day

Date : 202106

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1165

Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 5

Ceiling.Single Value : 500

Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Super King Air 300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Route In Use : Vectors

Airspace.Class G : ZZZ

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 8600

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 500

ASRS Report Number.Accession Number : 1816732

Human Factors : Physiological - Other

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Fatigue

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 2293
Experience.Flight Crew.Last 90 Days : 119
Experience.Flight Crew.Type : 315
ASRS Report Number.Accession Number : 1816728
Human Factors : Time Pressure
Human Factors : Situational Awareness
Human Factors : Physiological - Other
Human Factors : Fatigue
Human Factors : Workload

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Excursion : Runway
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control
Anomaly.Ground Event / Encounter : Weather / Turbulence
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
Contributing Factors / Situations : Weather
Primary Problem : Environment - Non Weather Related

Narrative: 1

Shortly after touchdown on Runway XX the plane began drifting to the left, controllability was deteriorating rapidly. The SIC was attempting to correct the drifting, I (the PIC/PM) stated we're drifting left and applied Full, Authoritative, Firm pressure to the right rudder. The plane began to straighten out and correct right. The left tires were on the edge of the runway next to the grass and water runoff, causing hydroplaning. As the plane decelerated I was able to regain control and corrected back to the center of the runway. The SIC further assisted in maintaining control of the aircraft as we could feel the tires slipping and hydroplaning. With team work and crew coordination, we regained full control of the Aircraft again and we're able to stop and clear the runway onto a taxiway. Contributing factors include, but not limited to: Weather, rain, winds/crosswinds, darkness/night, unfamiliar airport, wet runway, uncontrolled airport, fresh grass clippings and water pooling along edge of runway, long duty day greater than 12 hours, consecutive long duty days, multiple flights in a duty day (4th), human factors, pilot/crew exhaustion, crew dehydration due to extreme heat and humidity throughout the day, high stress loads throughout the day, get there itis, external pressure from passengers, crews desire to succeed and make everyone happy by completing the mission.

Narrative: 2

After touchdown the aircraft began to drift to the left. Control correction was applied as the aircraft was drifting but with very little effect. As we neared the left edge of the runway the Pilot Monitoring (PM) assisted the Pilot Flying (PF) and applied full right rudder. Due to the water collecting on the runway the aircraft did not respond very well to the rudder input until we decelerated. At that point we had drifted slightly off the runway edge onto the grass. With crew coordination we were able to recover the aircraft back to the runway center line. We exited the runway without further incident. Contributing factors: Weather, fatigue, hot temperatures and humidity throughout the day, dehydration, lack of nutrition, end of a long duty day (arrived at ZZZ on hour 13) preceded by multiple long duty days. This event has opened my eyes a little wider to the complexity of risk assessment. In the future more emphasis will be placed on assessing external pressure, fatigue, and physiological needs. Also more assertiveness towards these areas of risk assessment. ADM is a very complex system of checks and balances and awareness to even the slightest deviation can prevent future contributing factors to this and other events. A lot could be benefited from a personal assessment matrix to pair with a flight risk assessment matrix to help with mitigating a go/no go decision.

Synopsis

The crew of a King Air 300 reported loss of control during landing but were able to regain control. The crew cited weather, including wet runway and cross winds; also sighting fatigue and a long duty day as contributing factors.

Time / Day

Date : 202104
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : BOI.Airport
State Reference : ID
Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC
Weather Elements / Visibility.Visibility : 10
Light : Dawn
Ceiling.Single Value : 12000

Aircraft

Reference : X
ATC / Advisory.Tower : BOI
Aircraft Operator : Air Taxi
Make Model Name : Single Engine Turboprop Undifferentiated
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Flight Phase : Taxi
Route In Use : Visual Approach
Airspace.Class C : BOI

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : Single Pilot
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 : 6200
ASRS Report Number.Accession Number : 1798524
Human Factors : Fatigue
Human Factors : Distraction

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Excursion : Runway
Detector.Person : Flight Crew
When Detected : Taxi

Result.General : Maintenance Action
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance
Result.Aircraft : Equipment Problem Dissipated

Assessments

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

Narrative: 1

I was cleared to land on 10R and planned to exit at the first available taxiway (H) which was within the landing performance data but required accurate, prompt control to do so. I successfully landed and slowed to normal exit speed, acquired what I thought was the lead-off line for H, and the taxiway edge lights on the far side of the lead-off line. What I didn't perceive was that the lead-off line had been blacked out recently as H had been moved during construction. Given the poor ambient lighting (even accounting for the excellent forward lighting from the landing lights), there was no immediate visual difference between the runway surface and the transition to the gravel surface and as the airplane departed the runway, the extra drag of the gravel and ~4" of underlying mud brought the airplane to a stop. After realizing what had happened and that I wasn't going to be able to taxi further, I coordinated with Tower, was instructed to switch to Ground and asked for a tow and passenger transport, then shut down the engine. Everything but the runway exit went as planned. I followed aircraft procedures, but departed from my usual night time post-landing technique of acquiring the lead-off line, then verifying the taxiway signage and seeing the lead-off goes between the edge lights. The erroneous lead-off line combined with the adjacent line of taxiway edge lights and the still-night-but-approaching-daylight contributed to my disregard of my usual next exit criterion that the lead-off lights guide between the taxiway lights, resulting in exiting the runway surface next to the intended taxiway exactly on the blacked out lead-off line that led to the previous location of Taxiway H. The bottom line contributors were fatigue after an earlier transport, planning an aggressive landing while fatigued, and visual cues that combined with my disregard of solid techniques in the process of achieving the required performance to meet the plan. In the future I will accept and use the available runway rather than plan for an expedited profile that approaches the limits of my current capabilities.

Synopsis

Pilot reported a runway excursion during landing at BOI due to ambiguous lead-off runway and taxiway edge lighting configuration.

Time / Day

Date : 202103

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 27000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 1300

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Medium Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Nav In Use : GPS

Flight Phase : Descent

Route In Use : Direct

Route In Use.STAR : ZZZZZ5

Airspace.Class A : ZZZ

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Flight Engineer / Second Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 10100

Experience.Flight Crew.Last 90 Days : 104

Experience.Flight Crew.Type : 2045

ASRS Report Number.Accession Number : 1795514

Human Factors : Fatigue

Human Factors : Distraction

Human Factors : Physiological - Other

Human Factors : Situational Awareness
Human Factors : Workload

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

I was the Pilot Monitoring (PM) on the flight to ZZZ. Descending on the ZZZZZ FIVE arrival heading to the ZZZZZ1 fix. Approximately 20 miles from the ZZZZZ1 fix ATC called and revised the fixes after ZZZZZ1 but told us to comply with all the restrictions. The ZZZZZ1 fix includes a crossing restriction of 27000 feet. I read back the new clearance and confirm it with the Captain/PF. Done, then I went heads down to re-program the FMS including changing the landing runway. As I transfer my eyes back to the PFD to continue with the PM duties, I noticed the altitude at approximately 25,000 feet. I pointed the deviation to the Captain who stopped the descent. No traffic conflict was issued by ATC and we continued with the arrival using the depicted profile. While I have the primary duty of PM there are additional duties such as the checklist, FMS Programing, radio calls etc., that can distract us at important times. Compounding the situation was long days with five legs and 10 plus hours of duty. On top of that, due to the COVID crisis, we are operating with reduced staff and salary freeze creating additional stress and fatigue. I think prioritizing the duties is important and an art. Yet sometimes we reach limits and we don't recognize it.

Synopsis

Air taxi First Officer reported an altitude deviation during arrival and cited short staffing, fatigue and stress due to the COVID-19 pandemic as contributing factors.

Time / Day

Date : 202012

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 320

Relative Position.Distance.Nautical Miles : 10

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Visibility : 10

Light : Night

Ceiling.Single Value : 1300

Aircraft

Reference : X

Aircraft Operator : Air Taxi

Make Model Name : Light Transport

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use.Other

Airspace.Class E : ZZZ

Airspace.Class G : ZZZ

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

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

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 6700

Experience.Flight Crew.Last 90 Days : 5

Experience.Flight Crew.Type : 2500

ASRS Report Number.Accession Number : 1780049

Human Factors : Other / Unknown

Human Factors : Fatigue

Human Factors : Situational Awareness

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
When Detected.Other
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

This was a second flight of the night shift, and was unusually busy, because the hospital we are associated with is understaffed because of COVID. We got the call to go to ZZZ, and the weather was marginal, but good enough to get in. We accepted the trip, and flew the RNAV approach to Runway XX. Later, I looked at the approach chart, and it said that the approach was not authorized at night. I think that being busy after a long period of hardly flying contributed to the error, and also that it was XA:00 in the morning. Also, due to COVID-induced rules, we had to wear masks flying, and it fogs up my glasses, making it harder to see. I need to make sure that I check all the notes on an approach before accepting a trip.

Synopsis

Air Taxi Captain reported flying an RNAV Approach which was not authorized at night.

Time / Day

Date : 202008

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZZ.Airport

State Reference : FO

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Ground : ZZZZ

Aircraft Operator : Air Taxi

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Taxi

Component : 1

Aircraft Component : Air Conditioning Compressor

Aircraft Reference : X

Problem : Malfunctioning

Component : 2

Aircraft Component : Brake System

Aircraft Reference : X

Problem : Improperly Operated

Component : 3

Aircraft Component : Fuel System

Aircraft Reference : X

Problem : Improperly Operated

Component : 4

Aircraft Component : Cockpit/Cabin Communication

Aircraft Reference : X

Problem : Failed

Component : 5

Aircraft Component : Main Gear Tire

Aircraft Reference : X

Problem : Failed

Person

Reference : 1
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)
Experience.Flight Crew.Total : 7558
Experience.Flight Crew.Last 90 Days : 50
Experience.Flight Crew.Type : 1586
ASRS Report Number.Accession Number : 1758140
Human Factors : Training / Qualification
Human Factors : Fatigue

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Ground Event / Encounter : Other / Unknown
Detector.Person : Flight Crew
When Detected : Taxi
Result.General : Evacuated
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

[The] air conditioner seemed to be not working but [the] compressor kicks in momentarily. [While] in flight, [the] air conditioner starts working. I calculated on how much fuel we'll buy at ZZZZ. [At] ZZZZ, [the] air conditioner was still working upon arrival. I ordered to fuel 600 liters - however, [the FBO] tried to put 600 gallons resulting [in a] top off. They refused to de-fuel [and] passengers were already at the terminal. I made [the] decision to burn some fuel at the Ramp with passengers on board.

[As we were] departing ZZZZ, we loaded passengers and started engines. The air conditioner started [to] not work. Also, [the] intercom became inoperative and [the] cabin was getting really hot. We had already burned most of [the] excess fuel, so [I] figured [to] burn some on taxiing and [a] little more at the end of [the] taxiway. I occasionally put [a] little more power and brakes to burn more fuel [and] occasionally released to cool the brakes. Apparently that effort wasn't enough, [as it] caused excessive heat and fire on the wheels.

We started feeling bumps which I thought was [due to] flat tires. [I] stopped the aircraft and asked Tower if they could see [whether] the main tires were still inflated. Tower said [they] looked just fine. [I] tried to start [the] taxi again [and] figured it may have been bumps on the taxiway. Then, the First Officer saw fire from [the] right main tires. I called Tower for assistance and evacuated passengers.

No one was hurt. The aircraft sustained major damage on the main gear and wheels. [The chain of events started with the] air conditioner issue, misunderstanding of gallons and liters at the FBO, not watching [the] fueling, misjudging about brake heating, fatigue from waking up [early] and days of moving in the summer. [Correct actions would be to] watch fueling every time, not be in a hurry and deal with the situations one by one. [I] should have de-boarded [the] passengers and went to the run-up area and burned fuel.

Synopsis

CE525B Captain reported improper procedure resulting in brake overheating and main tire fire.

Time / Day

Date : 202008

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 9100

Environment

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 10

Light : Dawn

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Corporate

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission.Other

Flight Phase : Initial Climb

Route In Use : Direct

Airspace.Class B : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 540

Experience.Flight Crew.Last 90 Days : 175

Experience.Flight Crew.Type : 365

ASRS Report Number.Accession Number : 1756081

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Distraction

Events

Anomaly.Airspace Violation : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : FAR

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

Narrative: 1

I was flying on an aerial survey mission. I climbed above 9,000 ft. for a brief moment in the Class B 9000 ft. shelf. I was on flight following with TRACON during this time as well. I should have just requested my cruising altitude of 10,500 ft. and picked up a clearance. It was early in the morning and fatigue played a role in this I believe. Working as an instructor and an aerial survey pilot, I was a bit run down and probably not functioning to my top caliber. I was within legal work and resting requirements, however, this incident taught me fatigue is a real thing and affects human performance. Having ADSB in the aircraft I was flying, I made sure I was clear of traffic, and there was no traffic alert given by TRACON or by the ADSB inside the aircraft. I descended immediately once I realized I went above 9,000 ft. MSL for a brief moment. During this time I was also inputting a way point into my GPS. Being on a solo mission, this taught me a lot about single pilot resource management and how a pilot like myself can easily become distracted. I now know to never multi task while navigating complex airspace. If I need to multi task, I will pick up a clearance so I do not have to worry about multiple tasks. ATC did not mention anything to me, however, I quickly descended. This was a learning experience for me and taught me how it can happen to anybody. I will use this as a learning experience for myself and my students to make sure it does not happen ever again.

Synopsis

C172 pilot reported entering Class B airspace without a clearance.

Time / Day

Date : 202004

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : SAA.Airport

State Reference : WY

Altitude.MSL.Single Value : 11700

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

Make Model Name : Embraer Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Ferry / Re-Positioning

Flight Phase : Descent

Airspace.Class E : ZDV

Person : 1

Reference : 1

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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1739630

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Fatigue

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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 : 1739723

Human Factors : Human-Machine Interface
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

Flight plan was "MRSHH1.DDRTH.TELCU Pretty early, we got cleared direct SAA. We got the weather at the field and decided to do the RNAV 05. We got cleared direct ZUBUB(IF) and shortly after that we got cleared to descend and maintain 13000 ft. until established for the approach then cleared for the approach. I was the Pilot Flying, upon reaching 13000 ft. I decided to set the next altitude 10100 ft. (after receiving the clearance for the approach). For some unknown reason I began to descend to the set altitude 10100 ft. Around 11700 feet we received a "Caution terrain" I disconnected the autopilot and began to climb to 13000 ft. As soon as we received the warning I understood immediately my mistake. We climbed back to 13000 ft. and completed the approach and landing without any further issues.

I have no idea why I decided to descend lower than 13000 feet even though its very clear on the approach plate and from the clearance. Was it because I had woken [early morning, two hours prior to] show time, that perhaps might have been a contributing factor since neither of us reacted when we saw the terrain color change. What ever the reason was have no excuse, this will never happen again. After landing my partner talked about it, it really bothered me because this event could have been so much worse and the fact that I made such a beginner's mistake. I am so thankful we had the alert system on the airplane.

Narrative: 2

We were assigned the RNAV 5 for SAA. ATC cleared us direct to ZUBUB and we were told to maintain 13000 feet until established. We were heading approximately northwest. As we neared the smart turn towards YIDUR the Captain selected 10100 ft. for the next altitude and commenced the descent at around 2000 fpm. I was asked to activate vectors to final. This removed the smart turn and put us in heading mode. We had the MFD set to relative terrain. This mode started to display green terrain on our flight path. Which was unexpected for this portion of the approach. Then I saw the first yellow and that is when we received the GPWS Caution Terrain. The Captain immediately started a climb back to 13000 ft. and we continued the approach.

Synopsis

Flight crew reported executing an evasive maneuver in compliance of GPWS Terrain Alert during approach due to altitude excursion.

Time / Day

Date : 202001

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1240

Environment

Flight Conditions : VMC

Light : Night

Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Fractional

Make Model Name : Citation X (C750)

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

ASRS Report Number.Accession Number : 1717647

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Events

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Air Traffic Control

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

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

Narrative: 1

Second leg of day. Flying from ZZZ to ZZZ1. Pilot Flying was FO (First Officer), I was the Pilot Monitoring although the Captain. Weather was VMC. ZZZ1 was landing RWY XXL utilizing RNAV XX Z.

We flew the approach utilizing RNAV procedures, Vertical Speed, with altitude settings set for each altitude restriction. All altitude restrictions and procedures were briefed according to standard briefing card.

Prior reaching the final approach fix at 2,400 ft., we set the LNAV MDA for the approach which was 1,020. Upon reaching the FAF, we began our descent to the MDA looking toward ZZZZZ as the MAP. Upon arriving at MDA, the runway was clear in visual sight approximately 4 NM, the flying pilot concentrated on maintaining the final approach course which is offset by 11 degrees. Ride was light to moderate turbulence. We never went below MDA. At this point, we were given a low altitude alert by Tower, we acknowledged this radio call and climbed higher above MDA. We were then given our landing clearance behind a B737, and landed with no further issues.

Upon review on ground of our FMS waypoints, we only saw loaded ZZZZZ1, ZZZZZ2, ZZZZZ. Upon review of the approach plate, we then noted ZZZZZ3 (a fix inside the FAF) which had a altitude restriction of 1,240 which is 1.6 NM from MAP and 2.9 NM from Runway XX. Although we briefed that restriction at cruise altitude, during the business of the ZZZ airspace arrival, traffic, and busy, gusty approach, we both mistakenly utilized the loaded FMS waypoints. Not having ZZZZZ3 in our FMS provided us a false assumption we could come down directly to the MDA. This is what drew the low altitude alert from Tower I believe. Again, we were also VMC with my eyes outside ensuring we could also line up with runway.

In my opinion, we simply missed this altitude restriction at ZZZZZ3. Despite our best efforts to brief and understand the GPS approach, we failed to remember this during the actual approach. We also failed to back ourselves up by perhaps placing this additional fix into the FMS. I could have also chose to use VNAV knowing the weather. This was the second flight of the day, at end of a day at night - rolling fatigue was a probable issue as well.

Synopsis

Citation pilot reported the stepdown fix inside the Final Approach Fix was not entered in the FMS, which resulted in missing the stepdown altitude restriction and ATC issuing a low altitude alert.

Time / Day

Date : 201911

Place

Locale Reference.Airport : MIA.Airport

State Reference : FL

Altitude.AGL.Single Value : 0

Environment

Light : Night

Aircraft

Reference : X

Aircraft Operator : Fractional

Make Model Name : Citation Latitude (C680A)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

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

ASRS Report Number.Accession Number : 1704480

Human Factors : Physiological - Other

Human Factors : Situational Awareness

Human Factors : Fatigue

Events

Anomaly.No Specific Anomaly Occurred : All Types

Detector.Person : Flight Crew

When Detected : Pre-flight

Result.General : Work Refused

Assessments

Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Human Factors

Primary Problem : Company Policy

Narrative: 1

We have been on the night shift all week, including an all-night transcontinental flight on Day 2 landing at about XA00. We were showing for the day at about XL00 every day. I don't think either of us have gone to bed prior to about XV00 any day this week. Yesterday, at the end of day 5, we landed at about XP30, had to clear customs, and were restocking the airplane, when we received a brief for a XC45 show the next morning, for a flight. This would have been a 10 hour turn, and a 7 hour 15 minute shift from the start time the day before. We fatigued due to the body clock flip.

There needs to be a limit on circadian shifts, especially when they are shifts to the left. A 10 hour turn, and a seven hour shift with the first flight the next day though technically a legal brief, is NOT smart, or safe scheduling. We used the fatigue policy, but there are crews out there that would have felt compelled to accept this brief. The crew should not be the last link in the chain, this situation is easily prevented with scheduling limits. This next destination is one of the higher risk airports we fly to, even with the recent improvements, and the risk control measures in place. Being scheduled to go in there after a 10 hour turn, and a 7 hour circadian shift, with a First Officer on IOE added even more to the risk. It should not have been scheduled. I would like to see the fatigue model for this event (as scheduled). I would also like to share this event with scheduling. I would like to know if this flagged anybody's attention during the scheduling process. We have to get better at eliminating these circadian shifts, before we have a mishap.

Synopsis

A Fractional jet pilot reported cancelling their trip due to fatigue due to the scheduling practices of their company.

Time / Day

Date : 201911

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 180

Relative Position.Distance.Nautical Miles : 13

Altitude.AGL.Single Value : 500

Environment

Weather Elements / Visibility : Fog

Weather Elements / Visibility : Rain

Weather Elements / Visibility.Visibility : 8

Light : Dusk

Ceiling.Single Value : 3500

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Cessna Stationair/Turbo Stationair 6

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : VFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class G : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 2600

Experience.Flight Crew.Last 90 Days : 180

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1697805

Human Factors : Time Pressure

Human Factors : Fatigue

Human Factors : Distraction

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : VFR In IMC
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Weather had been VFR at ZZZ all day, with a ceiling about 3,500 and 8 miles of visibility, in rain. A low stratus layer at about 600 feet was S and SW of ZZZ, across the bay. My company is single engine Part 135, and must maintain glide to the shoreline. We have company routes and procedures in place to do this. I had gone to ZZZ1, on the far side of the bay from ZZZ. The far shoreline near ZZZ1 had a thin, scattered fog layer from 600 feet (MSL and AGL) to approximately 700 feet. It had been there all day, and had not really moved. It was a stable system. ZZZ1 is in class G airspace, and we had a company operational control release to operate in and out of ZZZ1. I was able to get under the fog layer before it started, and maintain glide distance to shore, stayed above minimum legal altitudes from terrain, and maintained legal cloud clearance and distance requirements. I spent approximately 15 minutes in ZZZ1 unloading freight, and I picked up one passenger to return to ZZZ. After takeoff, I stayed at the minimum legal altitude above terrain to make sure I had good cloud clearance. I had to stay right next to the shoreline to maintain glide distance to shore. There is one short over-water hop to make from the shoreline near ZZZ1 to an island at about 800 feet to maintain glide distance to shore. That area had been free of fog when I had gone to ZZZ1. However, now there was a fog layer at 500 feet. in that area. As I approached it, I thought I could see the layer breaking up and ending, because I could see far mountains through the fog. I decided that I could continue. When I thought the layer was ending, about half way to the island, I pulled up to maintain glide distance to shore. However, with the grey fog and the overcast sky above, I misjudged , and ended up on instruments, going through the layer. The layer was about 100 feet thick, and I was in it for a few seconds. I was not in the vicinity of immediate rising terrain during the IMC encounter.

Ultimately, I should have turned back around to ZZZ1. However, it was the last flight of the day, I was fatigued, daylight was about to fade quickly, and I did not want to get stuck in ZZZ1 overnight. In the future I will be on guard, especially near the end of the duty day, to not accept flights where there is a good chance I may not be able to return under good VFR conditions.

Additionally, I recommend all VFR operators utilize tools such as synthetic vision for inadvertent IMC encounters. Our Foreflight subscription gives us moving map, synthetic vision, with an attitude heading reference system (AHRS) overlay. These tools offer incredible situational awareness during an IMC encounter.

Synopsis

C206 pilot reported entering IMC while on a VFR flight plan.

Time / Day

Date : 201910
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : TEB.Airport
State Reference : NJ
Altitude.AGL.Single Value : 0

Environment

Flight Conditions : IMC
Weather Elements / Visibility : Rain
Light : Night

Aircraft

Reference : X
ATC / Advisory.Ground : TEB
Aircraft Operator : Fractional
Make Model Name : EMB-505 / Phenom 300
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Nav In Use : FMS Or FMC
Flight Phase : Taxi
Airspace.Class B : TEB

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Fractional
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 : 1696323
Human Factors : Situational Awareness
Human Factors : Fatigue
Human Factors : Time Pressure
Human Factors : Workload
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Ground Incursion : Taxiway
Detector.Person : Flight Crew
Were Passengers Involved In Event : Y
When Detected : Taxi
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

Prior to landing Runway 19, briefed expected Taxiway Lima to ramp. After landing as Pilot Flying, I heard taxi Lima hold short Runway 24 and restated clearance. We passed Golf and ATC then said we were supposed to take a Golf high speed off of Runway 24. I never heard it and Pilot Monitoring may or may not have verbalized it after acknowledgment. It was dark and I was over focused on taxiing the jet. No conflict occurred. We received new instruction to continue on Taxiway Lima to Charlie then hold short of Runway 24, then cleared to cross to ramp. After crossing runway, I had to stop the jet to determine which way to turn to go to [FBO]. Both pilots were tired after long day of IMC in heavy rain and crosswinds. ATC didn't hear our call sign on read back and then admonished us to state our flight ID which we did at every radio call.

Synopsis

Phenom First Officer reported miscommunication with Ground Control resulted in a taxiway deviation.

Time / Day

Date : 201910

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : BTL.Tower

State Reference : MI

Altitude.AGL.Single Value : 500

Environment

Flight Conditions : VMC

Aircraft

Reference : X

Aircraft Operator : Fractional

Make Model Name : Medium Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Landing

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1693388

Human Factors : Confusion

Human Factors : Fatigue

Human Factors : Situational Awareness

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 : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1693389

Human Factors : Situational Awareness

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

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Incursion : Runway
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

On a flight into BTL we had briefed a visual approach to Runway 23R back up with the ILS. Upon arrival to BTL the Tower cleared us to land Runway 23R, after landing and taxiing off the runway the Tower cleared us to parking with him. It was at this point I realized we had landed on Runway 23L. No indication of the error was given by the Tower. Taxied into the ramp uneventful and shut down.

Both of us had a duty day over twelve hours with connecting airline flight and an hour long car ride to reach the airplane followed by a flight to BTL. Fatigue was without a doubt a factor.

Narrative: 2

Flying in to BTL we were cleared to land on Runway 23R. ATIS was telling us Runway 31 was in use and we briefed enroute we would ask for Runway 23R and we did. We approached the airport from the southeast. Tower cleared us to land and the Pilot Flying began to turn directly to the airport like he was setting up for final on Runway 31. I corrected him and told him he needs a base for Runway 23R. Pilot Flying then asked if the REILS that were flashing was the intended runway and I said yes (it matched my centerline direction) and he then turned for a base leg for Runway 23L. We landed on Runway 23L without the Tower correcting us at all. I was distracted from our approach which was short and lower than I like. We were turning on Final at 500 feet AGL and realized we were landing on Runway 23L just before touchdown. I knew it was long enough from the briefing but my centerline was for Runway 23R. I can only contribute not matching the two due to fatigue. We both had the ILS Runway 23R set in and did not catch it. I always have a centerline which has helped a handful of times over the years. After landing we asked the Tower if we should go to ground for taxi (we were clear of runway) and he said to stay with him. We did not get any taxi instructions and proceeded to [FBO]. The Tower never asked about the landing and we were not given a phone number to call anyone.

I can only attribute to us both being fatigued a little bit the reason we landed on the wrong runway. We should have gone around when Pilot Flying was confused about the approach

to Runway 31. If we had gone around we would've realized the error. The Tower didn't correct us but we should've landed on the right runway.

Synopsis

Medium Transport flight crew reported fatigue and distraction on final approach resulted in a landing on the wrong parallel runway.

Time / Day

Date : 201908

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Weather Elements / Visibility : Cloudy

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 2000

Aircraft

Reference : X

Aircraft Operator : Corporate

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class B : TEB

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

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 : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4200

Experience.Flight Crew.Last 90 Days : 35

Experience.Flight Crew.Type : 15

ASRS Report Number.Accession Number : 1675005

Human Factors : Fatigue

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Approximately 25 minutes before the altitude deviation occurred, the aircraft suffered loss of cabin altitude from FL330. After completing all checklist and memory items the trip continues normally. Upon reaching TEB airspace the crew was still a bit overwhelmed from the events that had previously occurred. Approach gave us a heading and a descent down to 2,000 ft. The aircraft was turned to the proper heading yet the altitude did not properly capture allowing the aircraft to continue decent down to 1500 ft. before it was fought by the crew. Whilst this decent was occurring the cure was making final adjustments for the aircraft to be set up to cross DANDY intersection at 1,500 ft. and it was made apparent that the Co-Pilot's side HSI had become inoperative. When the altitude deviation was caught by the crew, immediate corrective actions were taken yet approach issued an altitude warning.

Contributing factors included crew fatigue from just completing a rapid decent due to loss of cabin pressure. During the course of this action judgment was affected because the crew was still excited from the previous events that transpired.

Synopsis

First Officer reported altitude deviation following loss of cabin pressure.

Time / Day

Date : 201908
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZMP.ARTCC
State Reference : MN
Altitude.MSL.Single Value : 5500

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft : 1

Reference : X
ATC / Advisory.Center : ZMP
Aircraft Operator : Air Taxi
Make Model Name : Caravan Undifferentiated
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Cargo / Freight / Delivery
Flight Phase : Climb
Route In Use : Direct
Airspace.Class E : ZMP

Aircraft : 2

Reference : Y
ATC / Advisory.Center : ZMP
Make Model Name : Cessna Aircraft Undifferentiated or Other Model
Airspace.Class E : ZMP

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Function.Flight Crew : Single Pilot
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 7150
Experience.Flight Crew.Last 90 Days : 70
Experience.Flight Crew.Type : 3500
ASRS Report Number.Accession Number : 1672818
Human Factors : Fatigue

Human Factors : Physiological - Other
Human Factors : Situational Awareness
Human Factors : Time Pressure
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury
Anomaly.Conflict : NMAC
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Automation : Air Traffic Control
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
Miss Distance.Horizontal : 500
Miss Distance.Vertical : 100
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Aircraft
Contributing Factors / Situations : Airspace Structure
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Environment - Non Weather Related
Primary Problem : Human Factors

Narrative: 1

Departing a Class D airport behind another IFR aircraft, which resulted in a rare runway heading departure. Given the somewhat remote location I'm usually given an "on course" take off clearance which normally results in an immediate turn to the south when departing the northbound runway. Instead I'm climbing out runway heading.

While climbing around Vx airspeed to avoid flying too far out of the way I was handed off to Center. After radar contact I was given a climb to 10,000 ft. MSL and my choice of turn for on course. The Controller then began speaking with other flights.

I began accelerating to cruise climb while heading back south over the airport and then was notified by Center about traffic over the airport. My first thought was it's the King Air that departed after me flying in the pattern. Instead he said it's a Cessna orbiting the airport at 5500 ft. MSL. At this point I was climbing out of 5000 ft. MSL.

That got my attention, but due to factors I'll explain later I was slow to take action...I began pushing the nose over but did not completely stop my climb. Instead I replied "looking for traffic".

The other aircraft was also on Center, and he was given the same traffic advisory and replied with the same vague answer.

At this point all three of us in this conversation have been vague about direction of flight,

location and intentions. A few seconds later the Supervisor took over and said we are heading right at each other, less than half a mile and both of you turn right.

Before his sentence was even finished I had begun a diving right turn as my altitude by this point was approximately 5500 ft. MSL. I had stopped monitoring the altimeter with my eyes outside.

It was only at this point that both of us gained sight of each other with wings up in the turn. I believe I was descending out of 5200-5300 ft. MSL after a quick glance inside. The other aircraft responded "traffic in sight".

Contributing factors - I was flying tired and somewhat sick. I had been up most of the night with on and off stomach cramps, and by [early morning] I was on the toilet. While I had dozed throughout the night I never remember actually waking up from sleep. My spouse was also tossing and turning, and attempting to sleep on the couch downstairs proved futile due to a noisy pet. My show time this morning was [one hour later than normal].

I began trying to talk myself into flying - it's a later show time than normal, I've (unfortunately) flown after lousy sleep before, the weather has been nice all week. After arriving at the airport I decided to sit in the plane and doze while waiting for freight. Then I began to feel somewhat nauseous and clammy. Now I'm considering getting back in my car and heading home, which with staffing issues and short term notice will definitely result in a canceled flight.

After eating a banana the nausea went away and I was left with contending with fatigue. The weather was clear and a million, and attempting to feel like a responsible pilot I said if the weather was bad I would definitely cancel, but given the nice day I'll "tough it out".

And yet, most mid-air collisions happen in day VFR. Should that have actually been a warning sign? Yes the weather is good, which means more aircraft will be out flying. A nice "easy" day with an 800 ft. ceiling would probably be a safer situation.

Given this same situation while healthy I probably would have taken charge and leveled off at 5000 ft. MSL. But my reactions were slow. How would an in flight emergency have played out on this day? Flying for a living there's the unspoken pressure to get the job done. Most of us have pushed it with personal health and weather - if we canceled every time there was forecast moderate icing we would spend half the winter on the ground.

We all have our personal limits, and today I was very borderline. Yes, the flight would have been canceled. Yes, the office would be stressed out. But the company would survive, and so would I.

Synopsis

C-208 Captain reported an NMAC after takeoff while in the airport traffic area.

Time / Day

Date : 201903

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 30000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 190/195 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 : Cruise

Airspace.Class A : ZZZ

Component

Aircraft Component : Rudder

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 Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 10000

ASRS Report Number.Accession Number : 1631678

Human Factors : Troubleshooting

Human Factors : Confusion

Human Factors : Training / Qualification

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Landed in Emergency Condition
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While at FL300 we experienced multiple uncommanded rudder deflections. The first occurred over a waypoint and was very subtle. We were fortunate because due to the first event I maintained positive contact with the flight controls. The second event was more violent and resulted in an undesired aircraft state. By referencing the turn and slip coordinator and our own senses, we knew the aircraft was "cross controlled". I pressed and held the quick disconnect button and took control of the aircraft. We immediately [requested priority handling] and requested a diversion to ZZZ. Unfortunately there was no EICAS [Engine Indicating and Crew Alerting System] messages to provide an appropriate course of action. We realized it was a rudder issue so I felt it was wise to slow the aircraft to 250 knots and minimize bank angles to 10 degrees or less while turning the aircraft. There was no apparent incorrect rudder trim and realized that the problem was due to uncommanded rudder deflections. While being vectored for the approach, I transferred controls to the First Officer and referenced the QRC and QRH for any guidance. We found that there was no action to be taken and we elected to land with flaps full. A successful approach and landing was made resulting in no damage to the aircraft or injuries. Upon landing we received a Flight Control No Dispatch EICAS message.

Synopsis

EMB190 Captain reported uncommanded rudder deflection in cruise flight resulting in a diversion.

Time / Day

Date : 201903

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1500

Environment

Flight Conditions : Marginal

Weather Elements / Visibility.Visibility : 5

Light : Daylight

Ceiling.Single Value : 2000

Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Citation Excel (C560XL)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Ferry / Re-Positioning

Flight Phase : Cruise

Route In Use : Visual Approach

Route In Use : Direct

Airspace.Class E : ZZZ

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 2000

Experience.Flight Crew.Last 90 Days : 90

Experience.Flight Crew.Type : 900

ASRS Report Number.Accession Number : 1630244

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Events

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Automation : Aircraft Terrain Warning

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : FLC complied w / Automation / Advisory

Result.Flight Crew : Became Reoriented

Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Human Factors

Narrative: 1

After a long duty day, we were repositioning the aircraft from one uncontrolled airfield to another uncontrolled airfield located 12 miles apart. At the time of departure, the ASOS was reporting marginal VFR conditions. Once we were airborne, the weather appeared to have deteriorated from what was reported. The departure was normal, but after reaching our intended altitude we began configuring for the landing. The aircraft descended and we received a terrain alert at which point we realized we were low. The pilot flying initiated a short climb, before completing the landing checklist. The landing was made without incident.

Synopsis

Citation 560XL Captain reported a GPWS event at the end of a long duty day.

Time / Day

Date : 201903

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 17000

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B767-300 and 300 ER

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Cruise

Airspace.Class A : ZZZ

Component

Aircraft Component : FCU (Flight Control Unit)

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 : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1629282

Human Factors : Troubleshooting

Human Factors : Distraction

Person : 2

Reference : 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 : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1629287
Human Factors : Distraction
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Other / Unknown
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

So we had multiple strange events on cruise and descent. During cruise we noticed an execute light on the FMS. Neither of us was sure what the execute light was for and the Captain scrolled through the FMS pages to try to figure out what wasn't executed. We were in normal cruise as I recall and had recently stepped to FL 370. Somewhere through the scrolling of pages the plane went into continuous thrust mode and started slowing down to drift down speed. Neither of us executed the drift-down. Neither of us even attempted to get drift down speed and altitude during the short flight to ZZZ. So I was not the designated Flying Pilot for the flight but I had control at the time and overrode the auto-throttles to keep us at cruise speed while the Captain attempted to fix the FMS and get us back to Econ cruise speed. Nothing happened but we were told by maintenance after the flight that the aircraft had done something similar on a previous flight. Secondly, on the descent while on the VNAV path the Captain extended the speed brakes and we got an "Unscheduled stab trim caution and an autopilot caution." No one touched the electric or alternate trim and the autopilot stayed engaged. We did not notice any changes in the aircraft. When I was about to run the QRH the message went away and we continued and mentioned the situation to maintenance.

And on the ATC side, not to be whining, but we did get the tight visual approach inside the final approach fix. The Captain went off automation as the glideslope would not have been able to be tracked on the AP. We started out high and then ended up low on the glideslope with a correction. We were able to make the 1000 foot stable gate on the glideslope just barely. However I am noting these things because it is my opinion that ATC needs to stop treating heavy Boeing 767s carrying cargo like we are CRJs capable of making aggressive last second maneuvers in the landing pattern. I realize that some of us more aggressive pilots can use skill to make things happen, but we should not have to. ATC needs to treat us like every other heavy, low maneuvering jet. This sort of situation could lead a less experienced pilot to make a mistake.

For the drift-down situation, I felt we did a good job preventing the situation. No one freaked out or did anything radical and we corrected the problem. The unscheduled stab trim was handled without any major issues. However we are occasionally getting these strange cautions on the auto-flight system that pop up and then disappear. We shouldn't be getting them at all if the plane is not having any problems. It makes you have to decide whether you run a QRH or not and whether you need to write it up or not. It also creates a

distraction and a feeling of distrust on the aircraft. This is not a good feeling, especially considering recent events. As to the visual approach, the Captain probably could have said "no" to the tight vector to final. We were in a left downwind to base and I could not see the runway but our vector was inside the FAF. We probably should have said no to the super tight vector. Once again, we made it work but should not have had to fly a heavy cargo plane that aggressively.

Narrative: 2

TWO EVENTS:

Ev. 1 - at cruise, 370. I had brought up the VNAV Crz (Vertical Navigation Cruise) page to look at the Econ speed. For some unexplained reason, VNAV commanded the thrust to CON (Continuous), and the speed to the EO (Engine Out) speed. The MCP altitude was set at 370, neither of us had made any change to the CDU. The thrust levers had to be prevented from retarding. Pushing the CRZ (Cruise) button on the TMSP (Thrust Mode Select Panel) did not work. Eventually, I had to delete the speed in the VNAV CRZ page, at which point the FMC caught up and VNAV went back to CRZ. AP and AT (Auto Throttle) were engaged all this time. No altitude or lateral deviations were observed.

Ev. 2 - On the arrival into ZZZ, we descending 13,000, just coming up to [the next fix], when ATC cleared us to descend 11000. I selected 11,000, hit the button on the MCP and to help the descent, started to deploy the speedbrakes. We were at 280 KIAS. The 'AutoPilot' and 'Unscheduled STAB TRIM' came on the EICAS for 1-2 seconds before disappearing. The AP did not disengage. No further incidents, no lateral nor vertical deviations were noted. We landed without further incident.

This flight seemed to have a couple of glitches in the software in the FMC. It was really inexplicable that the thrust went to CON without either of us selecting any other mode, either from the TMSP or in the VNAV CRZ page. While it may be possible that one of us could have hit the EO prompt, we were pretty sure that did not happen. And in any case, the EXEC (Execute) light would have been high-lighted. Neither of us saw that. As for the Uncommanded STAB TRIM, it appears that the AP was trying to compensate for a pitch movement, but the aircraft was not pitching down at all, we were leveling at 13,000, on speed at 280 KIAS, 11,000 was selected and the MCP button depressed once. Only when I started to deploy the speedbrakes (gently I might add), then the messages appeared on the EICAS. I had my hands and feet on the flight controls already, so was ready to respond to any deviations. Fortunately, the messages extinguished, the AP and AT remained engaged, and nothing untoward occurred. These two events appeared to be aberrations, from what we noted. Perhaps the software need to be updated, fine-tuned.

Synopsis

B767-300 flight crew reported various anomalies with the FMS.

Time / Day

Date : 201903

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : MSP.Airport

State Reference : MN

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : IMC

Light : Dusk

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : M98

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 : MSP

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : M98

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : MSP

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 : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1626109

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 : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1626103

Events

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

Assessments

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

Narrative: 1

We were on final approach for Runway 12L in MSP. We were assigned 4000' and 170 kts. We were configured with flaps 20. Just prior to glideslope intercept at HAMML (10.9 DME), we experienced a sudden and momentary pocket of turbulence, possibly from the preceding Aircraft Y's wake. Our aircraft instantly rolled to a 45 degree right bank, and a momentary pitch up attitude of approximately 5 degrees and brief stick shaker and the autopilot disconnected. I reacted immediately pushing the nose over, rolling the wings level and adding max thrust, all simultaneously. The encounter was very sudden and we were able to return to stable flight fairly quickly. Once stable we were still at assigned altitude but fast and were able to slow to assigned speed and engage the autopilot. We then captured the glideslope and finished configuring the aircraft prior to the FAF and made a safe and uneventful landing. I believe it was an encounter of wake turbulence from the Aircraft ahead of us. Even though our aircraft experienced the stick shaker, we were at a safe airspeed and we believe it was triggered by the sudden increased load factor associated with the turbulence. Once at the gate we confirmed that there were no injuries and we contacted Maintenance to report our encounter with severe turbulence. We encountered a pocket of severe turbulence on approach. I strongly believe it was due to the preceding aircraft's wake.

Narrative: 2

On final approach into MSP at approximately 4000' MSL prior to glide slope intercept with flaps at 20 we encountered severe turbulence that led to a significant roll upset of about 45 degrees or more to the right, and about a 5 degree pitch up. The roll upset caused the autopilot to disengage and the stick shaker was immediately activated. The FO (First Officer) was PF (Pilot Flying) and was able to promptly recover the aircraft once normal

control was regained. At the time of the incident we were assigned and flying 170 kts IAS as assigned by ATC. I believe the stick shaker activation was caused by the sudden pitch up and increase in load factor, as the airspeed did not decrease significantly. The airspeed increased normally with the application of max power and once control was regained we reduced power to prevent a flap overspeed having confirmed that normal control and flight was regained. The recovery was prompt and the aircraft did not deviate any more than 100' from the altitude that we were at for the segment of the approach. We were able to re-engage the autopilot and intercept the glide slope shortly after and complete the approach without further incident. I queried ATC about our preceding traffic and they said that it was an Aircraft Y, which shouldn't create significant wake. I am not sure if it was wake turbulence or a pocket of turbulence in the cloud. We landed without incident and taxied to the gate. We ensured that all passengers and crew were okay, and contacted Maintenance to have them inspect the aircraft following the severe turbulence encounter. I believe the cause was either wake turbulence or an area of turbulence embedded in the cloud.

Synopsis

CRJ-200 flight crew reported encountering turbulence on approach into MSP that was possibly related to the Medium Transport they were following.

Time / Day

Date : 201902

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZME.ARTCC

State Reference : TN

Altitude.MSL.Single Value : 37000

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZME

Aircraft Operator : Air Carrier

Make Model Name : A300

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Nav In Use : FMS Or FMC

Flight Phase : Cruise

Airspace.Class A : ZME

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

ASRS Report Number.Accession Number : 1620197

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1620199

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

In cruise at FL370, [we] began to encounter moderate turbulence. Then encountered an area of severe turbulence and wind shear. Airspeed rapidly increased (not reaching zipper) then rapidly decreased approximately 15 knots into the hook. Full power was applied as the aircraft began to buffet. Aircraft entered an uncommanded descent as well. Autopilot was disconnected and full power applied. Nose down pitch was initiated in order to recover from the buffet condition. Aircraft was recovered normally with an altitude loss of approximately 500 feet.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

A300 flight crew reported losing 500 feet in altitude and experienced large airspeed fluctuations during an encounter with severe turbulence at FL370.

Time / Day

Date : 201902

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : CYUL.Airport

State Reference : PQ

Environment

Flight Conditions : VMC

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CYUL

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

Flight Phase : Initial Approach

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CYUL

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Flight Plan : IFR

Flight Phase : Initial Approach

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 : 1619356

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
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

Assessments

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

Narrative: 1

On final approach, aircraft started a violent uncommanded right roll. The autopilot disengaged and we got an "autopilot fail" caution message. Captain and First Officer both grabbed the controls before the Captain called "My aircraft". Captain reestablished control and hit the auto pilot disconnect to silence the alarm. With the aircraft under control and well above 1,000 feet, Captain continued the approach by hand, staying above glide path on approach. [We] asked ATC if were following a heavy. ATC confirmed we were 7 miles in trail of a B777.

Sudden right roll detective by outside reference and instrument scan. Autopilot disconnecting by master warning and autopilot aural warning. Wake turbulence from a B777 7 miles ahead. Regained manual control and stayed high of glide slope to avoided further wake encounters.

ATC should have warned us we were following a heavy. Also ATC and the other aircraft were conversing in French so we were not even aware of a heavy on freq. All aircraft and ATC conversing in one language would have reduced the possibility of this happening.

Synopsis

Embraer regional jet flight crew reported experiencing a "violent" roll to the right on approach to CYUL 7 miles in trail of a B777.

Time / Day

Date : 201902

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

Make Model Name : Cessna Citation Sovereign (C680)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Climb

Airspace.Class A : ZZZ

Component

Aircraft Component : Hydraulic System

Aircraft Reference : X

Problem : Malfunctioning

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1618084

Human Factors : Troubleshooting

Human Factors : Time Pressure

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew
Were Passengers Involved In Event : Y
When Detected : In-flight
Result.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

XA10 LT (Local Time) - First indication of hydraulic problem occurred between waypoints ZZZZ and ZZZ3 at FL290. "Hydraulic Pressure Low R" amber CAS (Crew Alerting System) message posted. Quick Reaction Handbook (QRH) checklist was called for and completed. Fault did not clear. Condition was announced with Center but no emergency was declared.

XA15 LT - "Hydraulic Volume Low" then "Hydraulic Pressure Low L and R" amber CAS messages posted. Autopilot became disengaged and airplane rolled slightly to the right. Altitude loss occurred and [requested priority handling] with Center and descent to FL240 was assigned. Unfamiliar with surrounding airports, we requested clearance to an airport with the longest runway. ATC cleared us to ZZZ. Passengers were informed of the emergency and briefed to remain seated and secured with seat belt and shoulder harness.

XA25 LT - After working through the QRH checklist procedures for "Hydraulic Volume Low" and "Hydraulic Pressure Low L and R", I instructed the FO (First Officer) to send an AFIS (Automatic Flight Inspection System) message to "[Fleet Y Dispatch]" by my mistake instead of "[Fleet X Dispatch]". That was due to memory fallback from coming from the [another] fleet.

XA30 LT - Since we were closer to ZZZ1, ATC offered clearance to ZZZ1. We accepted and proceeded to ZZZ1, and descended to 10,000 MSL

XA35 LT - After completing the FMS (Flight Management System) landing initialization data for ZZZ and applying the emergency checklist Flaps 35 landing distance 1.63 multiplier, we decided that runway X, with the displacement and landing distance available (LDA) of 7280 feet was unacceptable. We informed Center and requested clearance to ZZZ2. Also requested they inform [the FBO] for towing after landing. During this time we reviewed the QRH checklist again and discussed the failed components as well as the possibility of a fire upon landing. The Evacuation checklist was reviewed as well as individual actions should it become necessary. The box pattern towards ZZZ to ZZZ1 to ZZZ2 gave us time to burn off fuel and reduce the airplane gross weight from takeoff at 30,240 lbs. to approximately 28,000 lbs. upon landing.

XA45 LT - Radar vectored for the ILS XXL at 3,600 MSL. Weather at ZZZ2 was VMC, dry runway. Approach checklist completed and emergency checklist actions reviewed again. Airplane was configured early on final due to manual gear extension. When I called for flaps 35, FO selected flaps 35, and the airplane rapidly rolled uncommanded to the right approximately 45-60 degrees and pitched down. FO immediately returned flaps to 15 and I was able to regain aircraft control. Loss of aircraft control and recovery was announced

to ATC and flight path for ILS XXL was reestablished. Since there was no published landing multiplier for Flaps 15 in emergency checklist for loss of hydraulics, I doubled the landing distance for wet runway and rounded up to determine that 10,000 ft. would be required with 11,095 LDA. Approached continued with Flaps set to 15. At approximately 1000 ft. AGL, I had FO control the power levers throughout to touchdown and I focused on maintaining aircraft control and runway centerline.

XA49 LT - Crew coordinated landing at 15 Flaps Vref and rollout was performed. After touchdown FO maintained forward pressure on the Yoke and I controlled the nosewheel steering with tiller while applying emergency braking. Rollout and complete stop occurred with 1,000 ft. of runway remaining.

XA51 LT - Engines off. Crash rescue gave an all clear and FBO personnel hooked up and towed airplane to FBO and parking without incident.

XB00 LT - Passengers deplaned. Notification to company about emergency landing.

XB05 LT - Post flight revealed hydraulic fluid dripping from right engine drain mast and right wing spoiler panels #7 and #9 extended. No visible damage to main landing gears or airplane was found.

XB20 LT - Debriefed passengers on details of hydraulic fluid loss and crew emergency corrective actions. They were somewhat shaken but relieved.

XB30 LT - Follow-up telephone conversations with company personnel and maintenance report write-ups.

Given the successful outcome of this emergency, it is apparent to me that the flight training [the company] provides contributed to this success. Two pilots that have never met, much less, flown together just one day prior for the first time, was able to coordinate and apply CRM (Crew Resource Management), threat analysis, and emergency procedure execution. FO deserves special recognition on retracting the flaps at a critical moment and his professional duties throughout this event.

I feel the "Hydraulic Pressure Low" and "Hydraulic Volume Low" QRH checklist needs to be revised. There must to be a "warning" or "caution" that states - If uncommanded roll occurs during flap extension, flap handle return to previous position. This may be due to spoiler panels not fully stowed. The spoiler EICAS (Engine Indicating and Crew Alerting System) speedbrake/spoiler display never indicated that the spoiler panels on the right wing were extended. Flight control system description (Flight Safety International Initial Pilot Training Manual) states that "Loss of hydraulic pressure results in a loss of spoiler control, and the spoiler panels ratchet to a stowed position." I found nothing that made that statement in the Cessna AFM (Aircraft Flight Manual). Also, there needs to be a landing distance multiplier for less than 35 flaps. Final approach is no place to swag a landing distance requirement when flaps 35 are not available. The only location for landing distance multiplier that would be applicable is in the Cessna AFM for Dual Engine Flameout - "For flaps 15, multiply flaps 35 landing distance by 1.90." Luckily we guessed correctly.

Synopsis

Citation Captain reported a hydraulic problem during initial climb forcing them to return to the departure airport.

Time / Day

Date : 201803

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZDC.ARTCC

State Reference : VA

Aircraft

Reference : X

ATC / Advisory.Center : ZDC

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 : Ferry / Re-Positioning

Flight Phase : Climb

Component

Aircraft Component : Horizontal Stabilizer Trim

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 : 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 : 1615821

Events

Anomaly.Aircraft Equipment Problem : Less Severe

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Flight Cancelled / Delayed

Result.Flight Crew : Returned To Departure Airport

Result.Flight Crew : Landed in Emergency Condition

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Aircraft suffered a stab trim runaway followed by failure of main and standby trim as indicated by EICAS messages. Crew completed stab trim runaway and stab trim failure QRC (Quick Reference Checklist) procedures. Returned to airport and [advised ATC]. Landed without incident.

Synopsis

E145 Captain reported a runaway stabilizer trim issue resulted in a return to the departure airport.

Time / Day

Date : 201902

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 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 : Takeoff / Launch

Airspace.Class B : ZZZ

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

Experience.Flight Crew.Last 90 Days : 179

Experience.Flight Crew.Type : 1540

ASRS Report Number.Accession Number : 1614873

Human Factors : Situational Awareness

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
Experience.Flight Crew.Last 90 Days : 214
ASRS Report Number.Accession Number : 1615330
Human Factors : Situational Awareness

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected.Other
Result.General : Maintenance Action
Result.Flight Crew : Became Reoriented
Result.Flight Crew : Returned To Gate
Result.Flight Crew : Rejected Takeoff

Assessments

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

Narrative: 1

We rejected our takeoff at approximately 120 knots after an uncommanded nose up pitch at 115 knots. Our bugged Vr speed was approximately 143 knots. I was the pilot flying and when the nose started to pitch up uncommanded, I felt the aircraft was not in a normal flight configuration, being approximately 30 knots below Vr and initiated the reject. The Captain took control of the aircraft as we rejected straight ahead. At a safe taxi speed, we exited the runway while I made the "Remain seated" call.

Once we came to a stop on the parallel taxiway, we ran the Rejected Takeoff checklist. We then referenced the Rejected T/O (Take-off) Brake Cooling chart in the QRH and determined we had a brake cooling time of approximately 57 minutes with the taxi in. We elected to return to the gate and coordinated as such with Operations and Maintenance. It was during this time that we noticed the T/O trim setting was in a nose up trim configuration that was near the limit of the green band. We had run the Before Take-Off checklist and had not caught that incorrect setting, and since it was still within the takeoff band did not get a takeoff configuration warning when tested as part of the Before Take-Off checklist.

Upon return to the gate, we wrote up the rejected takeoff and discussed the event with maintenance personnel. The Captain kept the passengers informed of the situation and also contacted the [Chief Pilot].

One side note, when we began our take off roll we did get a Speed Brake Lever Do Not Arm light. However, it went out and we deemed it spurious. All other operations up to that point had been normal.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

B737 flight crew reported rejecting the takeoff at approximately 120 kts when the aircraft began to pitch up. It was later determined the stab trim was incorrectly set to an excessive nose up setting.

Time / Day

Date : 201901
Local Time Of Day : 1801-2400

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 : 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 : FMS Or FMC
Flight Phase : Descent
Route In Use.STAR : MADII FOUR
Airspace.Class B : ORD

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : C90
Aircraft Operator : Air Carrier
Make Model Name : Heavy Transport
Operating Under FAR Part : Part 121
Flight Plan : IFR
Nav In Use : FMS Or FMC
Flight Phase : Initial Approach
Route In Use.STAR : MADII
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 Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 5830

ASRS Report Number.Accession Number : 1613267
Analyst Callback : Attempted

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 Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1613146
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
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 : Issued New Clearance

Assessments

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

Narrative: 1

On flight to ORD air traffic control advised First Officer and I of a heavy aircraft ahead and 1,000 ft above our assigned altitude. I reported aircraft in sight. As the other aircraft appeared closer and closer on TCAS I had the flight attendant sit down for possible wake turbulence. While on the MADII 4 Arrival somewhere after SOOLU ATC told us to descend [to] 7,000 ft. While slowing in order to descend we encountered a wake, losing about 100 ft than gaining 150 ft but no more than 200 feet. After the encounter I asked ATC for a heading to aid in reestablish on the arrival. He gave us a heading of 090 and we descended to 7,000 ft and complied with new assigned heading. At no point did the aircraft [TCAS] give any type of proximity caution / warning. Would like more distance between heavy aircraft.

Narrative: 2

On [our] flight to ORD, on the MADII 4 Arrival, between SOOLU and KURKK we were instructed to descend from 10,000 to 7,000. While we were slowing to descend our aircraft encountered uncommanded pitch and attitude inputs that resulted in altitude changes of +/- 100/150 ft. We quickly realized that we had entered the wake turbulence from a Heavy Aircraft in close proximity. The Captain asked for a heading from ATC, while I maintained aircraft control. Once in the clear, I began the descent to 7000. We proceeded to fly the ILS to 27R. Upon landing we were told to give TRACON a call. We explained the

situation, fortunately, no one was hurt. We were a little frazzled by the event. I feel as a crew, we could have done a better job of communicating with ATC.

Synopsis

EMB-145 flight crew reported an altitude deviation occurred after encountering wake turbulence on arrival into ORD in trail of a heavy aircraft.

Time / Day

Date : 201901
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Relative Position.Angle.Radial : 150
Relative Position.Distance.Nautical Miles : 50
Altitude.MSL.Single Value : 36000

Environment

Flight Conditions : VMC
Light : Daylight

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Personal
Make Model Name : Falcon 20FJF/20C/20D/20E/20F
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Descent
Route In Use : Vectors
Airspace.Class A : ZZZ

Component

Aircraft Component : Autoflight System
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 17500
Experience.Flight Crew.Last 90 Days : 25
Experience.Flight Crew.Type : 80
ASRS Report Number.Accession Number : 1609145
Human Factors : Distraction
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Automation : Aircraft TA
Detector.Person : Flight Crew
Miss Distance.Horizontal : 26000
Miss Distance.Vertical : 1100
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

While cruising at FL360, we were told by ATC Center to descend in less than 2 minutes to FL340, and turn to heading 220. I am not sure what order those instructions were given. I was the Pilot Flying. I decided to initially start my descent around 2,000 feet a minute, to guarantee compliance. I uncoupled altitude hold on the APS-80 autopilot, and engaged altitude select, I started the airplane descending by rolling the autopilot vertical trim wheel down. The only way to know how much trim has been imputed is by watching the airplane react. I also selected the heading mode and turned the airplane to [heading] 220, I am not sure about the sequence. The airplane was descending at 2,000 feet per minute plus, at approximately 35,000 feet, I used the autopilot trim wheel to slow the descent. After slowing the descent and at approximately 34,400 feet, both pilots called out that the altitude select mode was engaged, because we know that it is imperative to check that the altitude select mode is engaged, as it sometimes disengages without warning. We both saw the airplane leveling at FL340.

ATC Center gave us a direct to ZZZZZ intersection and a frequency change. I [entered] Direct to ZZZZZ in the left FMS, while the other pilot changed frequencies and updated his FMS. I looked at the altimeter and noticed that the airplane was climbing through approximately 35,000 feet at a high rate of climb. I did not hear an altitude alert. I shouted a couple of expletives getting the other pilots attention, disengaged the autopilot and rapidly descended back to FL340. During that time, I heard our TCAS I report a traffic alert. I looked out the window, but did not see any traffic. We were also given instructions by ATC Center again to descend to FL340 during the time we were recovering from the uncommanded climb. The most reasonable answer for this situation is a late and over-correcting with the autopilot trim wheel, but to the best of my knowledge I did not do that. I also fly a Falcon 10 with a similar autopilot. The little experience I have had with these airplanes has taught me not to over correct or correct the rate of ascent or descent close to the programmed altitude. It is possible that we had a trim malfunction or runaway. I have experienced autopilot runaway on older airplanes with similar autopilots.

Although we were not excessively busy, the need for an immediate descent, a heading

change, a Direct to, and a frequency change in less than two minutes was probably a contributing factor, taking our full attention from noting a total completion of the level off.

Synopsis

Falcon 20 First Officer reported an autopilot issue resulted in an altitude excursion and TCAS Traffic Advisory.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : IMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Citation I (C500)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

Component : 1

Aircraft Component : Engine

Aircraft Reference : X

Problem : Failed

Component : 2

Aircraft Component : Rudder Trim System

Aircraft Reference : X

Problem : Improperly Operated

Component : 3

Aircraft Component : Microphone

Aircraft Reference : X

Problem : Malfunctioning

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1605188
Human Factors : Troubleshooting
Human Factors : Time Pressure
Human Factors : Workload
Human Factors : Communication Breakdown
Human Factors : Human-Machine Interface
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

While in cruise at FL340 the right engine suddenly shutdown. Concerned about losing pressurization, the Captain had me [notify ATC] and request lower. The Captain disconnected the Autopilot and descended for lower. I donned my O2 mask. I then took the controls while he attempted to put on his mask. While I was hand flying, the Captain was having trouble getting his mask on. Simultaneously, ATC was attempting to obtain information from us regarding the [situation] but despite the mic switch in the mask position, ATC was unable to hear my radio transmissions. After the Captain got his mask on he made several attempts to speak with ATC with no success as well. Seeing the Captain was unable to reach ATC, I proceeded to adjust my headset mic just below my mask, switched the mic switch back to headset and pulled my mask off to make radio transmissions then place the mask back on. With all the distractions we managed to get slightly right of course as the aircraft tended to yaw into the dead engine. About the time I noticed and started correcting, ATC alerted us we were off course. I responded that we were aware and already started correcting. Due to the mask/mic issue, ATC repeated their transmission and heard my reply the second time and we got back on course. By this time the Captain was situated and took the controls back. We then coordinated with ATC to choose a proper/nearest airport to land. ATC set us up for vectors for the RNAV and we landed without incident.

The primary cause for the deviation was the yaw out of trim. Contributing factors were the distraction caused by inability to communicate with ATC through the mask mic with the Captain's struggle to don his mask and failed attempt to communicate with ATC through his mask as a secondary contributing factor.

Going forward, when a control handoff occurs during an engine out I will confirm proper rudder trim has been set. Prior to flight in an aircraft I have not been in before and/or as part of a periodic check in an aircraft I fly regularly, I will conduct a radio check with the mask mic to insure the ability to communicate during an emergency requiring the O2 mask.

Synopsis

C500 First Officer reported an engine loss at cruise led to flight crew communication and navigation issues.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZTL.ARTCC

State Reference : GA

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZTL

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

Route In Use.STAR : BNKR2

Airspace.Class A : ZTL

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 : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 3750

ASRS Report Number.Accession Number : 1605019

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 Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1605029

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

We were filed for the CHPTR2 arrival and just prior to its first point ATC asked if we were able to fly the BNKR2 arrival. We reviewed and discussed the arrival as published, conducted a route check, checked NOTAMS and concluded that we would be able to conduct that arrival. Upon acceptance, we updated the FMC with the BNKR2 and updated the altitude and airspeed constraints as well as the forecast winds for the descent. We made the first point of PONZE a hard altitude to enable geopath descent, and were given a speed of 270 knots by ATC prior to BANKR. At around CONTR prior to OPALS I ascertained that the autopilot VNAV would not be able to meet its restriction at OPALS and elected to utilize speed brakes and idle descent to increase descent rate. The autopilot upon passing OPALS then increased its downward pitch to meet the restriction by BLNCE and increased airspeed to 290 Knots. Shortly afterwards, we received a vector from ATC to aid in slowing to the published airspeed. After slowing below 270 knots I elected to utilize the gear to further increase our drag and descent rate to get on profile for the ILS 36L approach. During the approach the Controller asked us to contact their Supervisor upon landing to discuss this arrival as there were other instances of 737NG's not being able to meet the restrictions. The Captain discussed the scenario on the phone after landing via the number provided.

After review of the arrival between the points DEBBT and BLNCE there is a large amount of altitude to lose in relatively short distance that the VNAV descent could not accomplish or calculate correctly. That in conjunction with a large tail wind further complicates the arrival. The VNAV function in the 737NG has difficulty commanding the aircraft for descent while conducting this arrival which is most evident at points CONT to OPALS. Altering CONT or OPALS to hard altitudes may aid the VNAV in calculating proper descent profiles.

Narrative: 2

Initially we were filed for the CHPTR2 arrival. Approaching IRQ the Controller asked if we could fly the BANKR2. We checked the NAV database in the FMC and the arrival was listed. I checked the company pages and comments and saw no restrictions for this arrival. The First Officer reconfigured the FMC and we completed a new route check to include published altitudes and airspeeds. In addition, the predicted winds were entered on the descent page for VNAV accuracy. We were recleared to PONZE and given a crossing restriction to cross PONZE at 27,000 feet and the VNAV descent switched to a geopath descent after crossing PONZE. The controller assigned a descent speed of 270 knots and

the First Officer entered the new airspeed on the descent page. The VNAV profile was on speed and altitude from PONZE until CONTR when it suddenly indicated the aircraft was over 3000 feet high. The First Officer asked for the landing gear to be extended to help with the speed reduction and descent. The Controller noted our altitude just as I was going to ask for relief and gave us a vector to extend our base. We descended to the profile and descended to the assigned altitude. The Controller asked us to call their Supervisor upon landing. I called the Supervisor and he stated multiple 737-800 were having problems with this arrival similar to what we experienced. I noted that there were specific notes on the CHESLY arrival in our company pages, but nothing on the BANKR2. He indicated that it was his understanding there were company notes on this arrival. I checked our pages and flight paperwork and didn't find anything.

After reviewing the arrival post landing it doesn't appear that the aircraft can handle the descent profile from CONTR above 11000 feet to the subsequent points and associated altitudes for OPALS and BLANCE. It is worth noting that we had a 90 knot tailwind in the descent making the restrictive crossing restrictions harder to reach. The altitudes on the STAR need to be adjusted to be less demanding during the final segment of the arrival or lower altitudes need to be published further back on the approach to ensure the arrival doesn't require a steep descent and deceleration at the same time

Synopsis

B737-800 flight crew reported the aircraft was unable to meet the published crossing restrictions.

Time / Day

Date : 201812
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 10000

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
Aircraft Operator : Fractional
Make Model Name : Light Transport
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Descent

Component

Aircraft Component : Altimeter
Aircraft Reference : X
Problem : Improperly Operated

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Fractional
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 : 1604490
Human Factors : Troubleshooting
Human Factors : Fatigue

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Air Traffic Control
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

During descent into ZZZ, we were assigned a crossing restriction of 10,000 feet at ZZZZZ intersection and given an altimeter setting of what we believed and read back as 30.27. We made the crossing restriction and about the same time we were handed off from center to approach. Approach immediately called and asked if we were on frequency. I said "Aircraft X with you 10,000" He asked me to verify assigned altitude. I told him we were level at assigned altitude of 10,000 feet. He said we were showing 9,100 feet. I checked all 3 altimeters and they all showed 10,000 [feet]. He gave us a descent to 7,000 [feet]. I switched from transponder 1 to transponder 2. During the descent, he asked us to verify altitude. I don't recall where we were at but I told him and asked if it matched and he said we still showed 800 feet low and gave us the altimeter setting of 29.27. We set the correct altimeter setting and leveled at 7,000 feet (we were at 6,800 [feet] after correcting the altimeter and climbed back to 7,000 feet). I admitted that we had the incorrect altimeter setting and we corrected it. We now showed the correct altitude. There were no traffic conflicts during this time. We were prepared for landing at ZZZ in advance of this situation and had pre-selected the altimeter setting for ZZZ prior to our descent. Somehow, we even had that incorrect as it was showing 29.29 and we both had 30.29 in our preselect. So, when we were given the altimeter setting, I did not comprehend the difference from 30 to 29 as it made sense to me the numbers after the decimal were very close. In addition to this, I was very tired and becoming fatigued. I had been on afternoon starts for days and last night was a 10 hour turn to an XX:30 show time. That may not seem that early, but we had been prepared for a late night when our trip cancelled due to the lengthy delays caused by ZZZ1 weather. After that, they shut us right down with a 10 hour turn. I laid in bed for quite some time before sleeping. I felt ok at the beginning of the day and the flight to ZZZZ and back to ZZZ1 seemed fine. But after arriving ZZZZ, we found we now had a long ferry to ZZZ. That was followed by holding on the way into ZZZZ and delays leaving. At the time of leaving ZZZZ, I felt ok but about 2 hours into the flight I faded fast. I believe this fatigue was directly related to this error.

Synopsis

Corporate Captain reported using incorrect altimeter setting due to fatigue, resulting in erroneous altitude reporting.

Time / Day

Date : 201812
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport
State Reference : US
Altitude.MSL.Single Value : 1700

Environment

Flight Conditions : Mixed
Weather Elements / Visibility : Thunderstorm
Weather Elements / Visibility : Rain
Weather Elements / Visibility : Turbulence
Weather Elements / Visibility : Windshear
Weather Elements / Visibility.Visibility : 7
Ceiling.Single Value : 1100

Aircraft

Reference : X
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Taxi
Make Model Name : Learjet 35
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Landing
Airspace.Class D : ZZZ

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 1930
Experience.Flight Crew.Last 90 Days : 40
Experience.Flight Crew.Type : 1150
ASRS Report Number.Accession Number : 1603173
Human Factors : Situational Awareness

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Taxi
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Flight Instructor
Experience.Flight Crew.Total : 1620
Experience.Flight Crew.Last 90 Days : 127
Experience.Flight Crew.Type : 320
ASRS Report Number.Accession Number : 1603460
Human Factors : Workload

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Detector.Person : Flight Crew
When Detected : In-flight
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

As we were approaching ZZZ, we were keeping an eye on the weather with at the destination using the stratus. We briefly talked to approach about the weather and what was painting on his radar and he informed us of some light to moderate precipitation. Shortly thereafter we began our first approach into the airport. My First Officer was flying at this time. He performed the approach, however, we were unable to visually identify the runway prior to having to go missed. Approach had given us some revised missed approach instructions, which included a turn to heading 180 and a climb to 1500 feet.

As I was cleaning up the airplane from going missed, I noticed that my First Officer had busted our altitude by 200 feet. I called out the error and he began correcting. As we continued flying, I noticed he continued having trouble maintaining the assigned altitude and decided to ask for a block altitude for him and to switch our roles to where I became the pilot flying and he would perform the duties of pilot monitoring. While being vectored around for the missed approach, we were vectored into an area where we received a brief moment of severe to extreme turbulence. At this point I told my FO (First Officer) to request a vector to the north where the weather was better and to inform ATC that we would like to hold to the north.

As we were about to cross the approach path, ATC informed us that another aircraft had made it in on the approach and asked if we'd like to give it another look. We accepted the

offer and he gave us a vector and approach clearance. Before we reached the final approach fix, we were informed that the winds had shifted and were now favoring the other runway and we'd be landing with a tailwind on our current runway. We elected to not shoot the current approach and get vectors for the approach into the other runway. ATC vectored us and we began to shoot the approach into the other runway.

The approach was flown as published and we flew at the MDA for a little while before spotting the runway and beginning our descent to land. The descent to landing appeared normal with only minor airspeed fluctuations, which at the time I attributed to the winds that were now gusty at the airport. When we got down over the threshold and began our flare to arrest the descent rate, I began to notice that something was not right. As I pulled the yoke back, the nose rose as expected, however, the aircraft's descent rate was not arresting or slowing down. Before I could add power we had landed hard on the runway. We completed the landing roll and turned off the runway. We informed tower that we believed we may have blown a tire and pulled off into a ramp to check the airplane. Upon inspection, we noticed some damage and reported the damage to our company/the operator, along with a report of what happened.

In reflection, the altitude issues my copilot suffered, stemmed from up/down drafts in the showers we were flying through, with my task saturation of cleaning the airplane up from the missed approach contributing, as I was unable to keep my typical close eye on him. As for the hard landing, I believe it can be attributed to a microburst/windshear event on short final. I had never experienced anything like it before. I think it would be beneficial for windshear avoidance on final to be added to the curriculum for pilots in both the ATP/CTP (Captain), as well as training for type ratings. I also believe that is important to point out at how much more insidious a microburst/windshear event can be when shooting a non-precision approach, and the microburst/windshear is entered at the same time as the descent to the runway. This masks typical cue to microbursts/windshear by creating the expectation of changes in performance due to commanding a descent.

Narrative: 2

We were set up for the RNAV/GPS XX. We had been cleared for the approach. As I was flying the approach, we descended to the MDA of about 600 feet. Maintaining 600 feet, we reached the MAP, and I saw the runway directly below us. We went missed, and followed our alternate missed approach instructions of heading 180, climb to 1600 feet. We were then given a heading of 270. We also had one or two instances of severe to extreme turbulence, along with continuous moderate turbulence.

After being told another aircraft behind us was able to land, we were setting up for a second RNAV/GPS XX approach. Prior to the FAF, we were told the runway winds had switched (approximately 40 degrees). We maintained 1600, and continued outbound to set up for the RNAV/GPS XY. We were getting additional turbulence in the vectors to the approach.

We began the approach to runway XY. After crossing the FAF, we descended to MDA, about 500 feet. We saw the runway environment, and began a descent to the runway. The descent did not feel unusual. As we approached the runway, we began to flare as normal. While the nose pitched up, the descent rate did not slow. We landed hard.

After landing, I informed the tower I thought we had blown a tire. We pulled off onto the ramp. I opened the main door, and noticed fuel leaking from the left wing. I told the rest of the crew that there was a fuel leak, and we evacuated the plane. I flagged down an emergency vehicle and told them we had a fuel leak.

There were no factors, even looking back on it, that I can point to that say "you shouldn't have tried this." During the final descent to landing, there did not appear to be any speed fluctuations indicating a windshear or microburst event. The descent rate did not appear to be outside a normal descent profile.

I think the cause of the hard landing was a sudden downdraft or windshear during the flare, even though there didn't appear to be any indication of those conditions during the descent.

Synopsis

LJ35 flight crew reported an unstabilized approach and missed approach, along with severe turbulence, culminated with a hard landing in microburst, windshear conditions.

Time / Day

Date : 201812

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 15

Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use : Direct

Maintenance Status.Maintenance Deferred : N

Component

Aircraft Component : Horizontal Stabilizer Trim

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 Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Flight Engineer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 22000

Experience.Flight Crew.Last 90 Days : 180

Experience.Flight Crew.Type : 700

ASRS Report Number.Accession Number : 1602782

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Departure Airport
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Equipment / Tooling
Primary Problem : Equipment / Tooling

Narrative: 1

Noted on preflight, a write up, for a cycling trim situation on the inbound leg. With no faults noted by maintenance, it was cleared. First Officer (FO) and I discussed the situation as one of the threats possible, with emphasis on being alert for the cycling trim situation to possibly repeat. Reviewed applicable procedure for a possible runaway trim scenario. Upon takeoff, Autopilot A was engaged at approximately 1,200 FT AGL. As flaps were retracted and airspeed began to increase, additional trim inputs were immediately noticed by both pilots. With flaps now up, FMC called for 250 KTS. Aircraft pitched to 260 KTS with trim inputs, then re-pitched to 240 KTS. The trim system would activate for 1-2 seconds and then immediately reverse itself, trimming in opposite direction. I directed FO to ask for intermediate stop on climb, where we then stopped at FL230. Advised ATC we were experiencing a trim system problem, but the aircraft was stable and trim stopped fluctuating once a stable and level pitch was attained. I chose not to declare an emergency at this time as we did have a stable aircraft, but contacted dispatch via radio, and informed dispatcher of the situation, that it was a reoccurring event, and that I was not comfortable taking the aircraft to ZZZ1 with a primary flight control system not operating properly. Therefore I would return to ZZZ. Dispatcher brought Maintenance Control in I believe at that point and I gave them a description of the problem. We then completed those calls, informed ATC of our desire to return to ZZZ, and no emergency being declared at this time. The trim problem immediately reappeared when given a descent to 11,000, executed via Level Change on the Mode Control Panel. I was flying and at that point disconnected the autopilot, and hand flew the remainder of the approach to the landing. No trim problems were noted with autopilot disconnected. Maintenance ACARSeD us several times, requesting us to attempt to troubleshoot the failure and gather information. I elected to not do this. I knew I had a failed trim system and did not wish to engage a deeper problem if something else went wrong with the system while troubleshooting. In addition we [were] now under 15000 FT, in the terminal area, and I was hand flying the aircraft. Too many distractions, as well as a potential bigger problem if something else went wrong. We both put on the table the trim motor / elevator jackscrew failure a few years back that happened to another carrier. That situation was perhaps the final reason I did not want to troubleshoot the failure. We finally told Maintenance Control via ACARS. "We are busy ", as they were now a distraction with their requests as we were near or under 10,000 FT. Aviate, Navigate, Communicate. That is what I start every brief off with a new pilot at the beginning of a trip.

Synopsis

B737NG flight crew reported a trim problem during climbout resulting in a return to field.

Time / Day

Date : 201812
Local Time Of Day : 1201-1800

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : A321
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise

Component

Aircraft Component : Elevator Trim System
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 Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1602134
Human Factors : Communication Breakdown
Human Factors : Troubleshooting
Human Factors : Workload
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Attendant

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Flight Deck / Cabin / Aircraft Event : Other / Unknown
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Overcame Equipment Problem

Assessments

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

Narrative: 1

The First Officer did an outstanding job flying the aircraft, setting up the MCDU for the approach, and communicating with ATC during the arrival until I was ready to take back control. He properly made this his first priority and avoided distraction, thereby allowing me to focus on managing the emergency. He was the first to suggest holding on to the pitch trim wheel and, later, [advising ATC]. The First Officer should be specifically and highly commended.

No one I talked to during or after this event had ever heard of an uncommanded stabilizer trim malfunction on an Airbus fly-by-wire aircraft before. This event should be documented and a de-identified summary should be published to [Company] pilots so that others can learn from this event.

The pagination of the System Reset Tables in COM Book 2 was confusing and delayed my ability to determine that there were no applicable resets for several minutes. It has been mentioned by Flight Operations Management that there is the intent to eventually provide tail number-specific QRHs in the cockpit and thereby return towards Airbus manufacturer philosophy regarding Abnormal/Emergency Procedure and ECAM handling. This must be properly implemented, and it carries risks because the manufacturer-provided QRHs are not compatible with our current procedures, manual set, or ECAM handling philosophy, so these items would require appropriate modifications. But properly implemented, returning to tail number-specific QRHs would solve the issue I encountered, and many others.

The Safety Department should determine whether or not a brace command was issued by flight attendants, without flight crew awareness, and contrary to what I believed were my very clear instructions. For example: did this not occur, did it occur due to a miscommunication between myself and the Lead FA, did it occur due to a miscommunication between the Lead FA and the other FAs, or did a FA deliberately disregard my instructions? If this occurred due to a miscommunication, I would like to be made aware of it so we can learn what went wrong and how to communicate better in the future. If this occurred due to a deliberate decision by a FA to disregard my instructions (but then not inform us they had done this), the FA should be debriefed in a non-punitive manner to determine the reason for that FA's decision and then to ensure that they understand: that it was not appropriate for this particular situation, what were the risks associated with doing this, and what were the risks associated with not telling the pilots they had done this.

Synopsis

A321 Captain reported QRH shortcomings and communication breakdown between flight crew and cabin attendants while troubleshooting uncommanded stabilizer trim malfunction.

Time / Day

Date : 201812

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 36000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Phase : Descent

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 : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 992.63

Experience.Flight Crew.Type : 992.63

ASRS Report Number.Accession Number : 1601731

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 : 1601737

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 : Overcame Equipment Problem
Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

Started a descent from 36,000 [feet] following VNAV path with autopilot on. Aircraft was a touch high, so opened speed brakes at normal rate to detent. When retracted speed brakes at normal to slow rate, aircraft banked to 25-30 degrees to right in approximately 2 seconds. Attempted to stop bank by turning off AP, autothrottles, and rotating yoke in opposite direction. Took approximately 2 seconds to return to level flight. Continued flight without using speedbrakes. Had been a previous Maintenance write up for this, but had been closed the day before. Other flights had occurred since closing of write up. Continued on to destination.

Narrative: 2

Aircraft had a previous report of a roll to the right when retracting the speed brakes. During our descent at about FL360 and 300 kias, the First Officer, who was flying, extended the speed brakes in a very normal fashion. When he retracted the speed brakes in the same, very normal fashion, at about the mid-point of retracting them, the aircraft rolled at about 15 degrees per second to about 30 degrees right wing down. At that point, the autopilot had responded with about 60 degrees of left aileron which stopped the roll, and by this time, the First Officer's hands were on the controls which then caused the autopilot to revert to CWS mode. Then, the aircraft returned to wings level and the First Officer stowed the speed brake handle. There were no further anomalies and the remainder of the flight was unremarkable.

Synopsis

B737 Flight crew reported uncommanded 25-30 degree roll while retracting speedbrake. Uncommanded roll previously reported.

Time / Day

Date : 201812

Local Time Of Day : 1201-1800

Place

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

Make Model Name : No Aircraft

Person

Reference : 1

Location Of Person : Company

Reporter Organization : Fractional

Function.Maintenance : Technician

Qualification.Maintenance : Powerplant

Qualification.Maintenance : Airframe

ASRS Report Number.Accession Number : 1600787

Human Factors : Workload

Human Factors : Fatigue

Events

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

Detector.Person : Maintenance

Assessments

Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Staffing

Primary Problem : Company Policy

Narrative: 1

On [Date] at [Time] I was notified by my supervisor that I was going to be "forced" to work overtime on [Date] on my day off per the [company operations] terms due to no volunteers and I was the junior employee on the [Aircraft Type] desk. The issue I have with this process is they are putting me, the company's certificate, and more importantly peoples' safety in jeopardy.

Please let me explain, as of today's date, I have worked almost 1,100 extra hours in overtime and will be well over 1,200 before the end of the year without this forced day. [Maintenance Control personnel] work (4) 12 hour days and has (4) days off normally. In the week that I'm being "forced" to work another day, I am already working (2) of my days off which leaves me with only (1) day off. The rotation prior, I will only have (1) day off in the last (8) days and to put it in perspective with this "forced overtime with what I've already volunteered to work, I'll be working (19) 12 hour days out of the next (21) days. As a holder of airman's certificate in a safety sensitive position you must recognize when fatigue, stress, and lack of staffing is at point of breaking. I confess I need to take

time off, coupled with stress here at home and health problems that are directly related to my job from long hours are taking its toll. My supervisors are more focused on enforcing the [company operations], than my health, the certificate of this company, and safety of our owners/employees that I directly affect by my actions. I felt I had to take a vacation day on the 14th due to the forcing of working but it has been suggested it will be turned down because outside the [company operations] time frame to approve.

One year ago our president [Name] stated [recently] that the company intended to make a major investment in Maintenance Control by addition of manpower and other resources so we could properly accomplish our daily duties. Much of our department feels very slighted and manpower has yet to be added. Many of us are working hundreds and in some cases over a thousand extra hours a year, yes there is a dollar reward for working, but we can't lose sight of the function to the operation [Maintenance Control] provides. I understand that a bad decision, recommendation, or judgment call can have catastrophic consequences, certificate action, damage/loss of equipment and life. I believe it is not good practice to force employees to work beyond their normal schedule with what they are comfortable. It adds undue stress, health implications, and leads to compromised decisions. The company, our [new mission plan] states we won't compromise safety in any way and is our "highest priority," but this completely contradicts the dirty dozen, good safety practices, and the [new mission plan]. I shouldn't have to ask to take vacation (which more than likely will be denied) to get rest to work a day I'm being forced to work. I try to manage my stress, rest periods, and know my limits. Each individual should know their breaking points and know when to step back. I'm at that point of knowing my point of breaking (liability) and my actions are/will be affected further by being forced to work more. I hope this report sheds light on duty times and lack of staffing. Hopefully the question will be ask. Do we really want to run our business this way and as usual put our head in the sand? I've never seen [Company] "force" pilots to fly airplanes who were fatigued or uncomfortable about any issues and this might be a good opportunity to start the conversation of what is occurring within the [Company] maintenance department and if this a practice we want to embrace. I've been told by my supervisors this is the way the business needs to be run and there are no other options, I have to question their conclusions.

Synopsis

Maintenance Technician reported being forced to work overtime, describes a high stress environment due to low staffing resulting in fatigue and an unsafe situation.

Time / Day

Date : 201811

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 21000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class A : ZZZ

Component

Aircraft Component : Electrical Distribution Relay

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 : Captain

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 : 21000

Experience.Flight Crew.Last 90 Days : 200

Experience.Flight Crew.Type : 8260

ASRS Report Number.Accession Number : 1596965

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 Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 4500
Experience.Flight Crew.Last 90 Days : 270
Experience.Flight Crew.Type : 2175
ASRS Report Number.Accession Number : 1596979

Events

Anomaly.Aircraft Equipment Problem : Critical
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Departure Airport
Result.Air Traffic Control : Provided Assistance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While climbing through FL210 approximately with the FO (First Officer) operating as the PF (Pilot Flying) and autopilot 2 engaged, the aircraft experienced an abrupt yaw to the left, and the Captain's PFD, ND, and the upper ECAM screen momentarily went blank. The aircraft quickly recovered, and the blank screens returned to normal. Both the First Officer and I scanned the overhead panel and circuit breaker panels, and found nothing amiss. We also cycled through the systems pages on the ECAM display, and all was normal. Approximately two minutes later, the same thing happened, only the yaw was more abrupt, and the Captain's screens and upper ECAM display remained blank for several seconds. We then experienced the following ECAM's:

ENG 1 EPR MODE FAULT
NAV GPWS FAULT
AUTO FLT RUDDER TRIM 1 FAULT
BRAKES SYS 1 FAULT
ELEC GEN 1 FAULT
ELEC BCL 2 FAULT

I directed the First Officer to fly the aircraft and communicate with ATC, and to ask to level the aircraft at FL240. Given the multiple malfunctions and our proximity to ZZZ, I consulted with the First Officer and decided that a return to ZZZ was in order. While the First Officer coordinated with ATC for our return to ZZZ, I started working through the displayed ECAM procedures, which resulted in taking generator 1 off line, and placing both engines in the N1 mode. We started the APU, and I coordinated with the flight attendants, made a PA announcement to the passengers, sent dispatch a brief ACARS message telling them that we were experiencing multiple issues and were returning to ZZZ, and asked for landing performance data. We completed an uneventful overweight landing back at ZZZ, and taxied back to the gate.

Narrative: 2

During the climb out heading west passing through FL210, airspeed 315 KIAS, autopilot and auto-thrust on, the aircraft made an uncommanded yaw to the left while simultaneously the Captain's side PFD, ND, and the E/WD screens momentarily went blank. The aircraft returned to stable flight conditions almost immediately, no ECAMs or other warnings were present, and all systems appeared to be operating normally, therefore the climb was continued. Approximately two minutes later climbing through FL240 there was a second uncommanded yaw to the left that was of greater magnitude than the first, causing the aircraft to also roll to the left, while again the Captain's side PFD, ND, and the E/WD screens went blank and flickered for several seconds. At this time the first of multiple ECAMs began to appear, which included ENG 1 EPR Mode Fault, NAV GPWS Fault, Auto Flt Rud Trim 1 Fault, Elec Gen 1 Fault, BCL Fault, and Brake Sys 1 Fault, along with several others.

As I was the PF (Pilot Flying), and after briefly confirming with the Captain, I disconnected the Autopilot and Auto-thrust systems and initiated a level off, and after another quick discussion with the Captain, he began working the ECAMs while I continued to fly the aircraft and assume control of radio communications with ATC. I coordinated with ATC for a slight descent back down to maintain FL240, while I reduced thrust to slow the aircraft to 280 KIAS. While I was descending and slowing the aircraft (with Autopilot and Auto-thrust off), the aircraft again made several large, uncommanded yawing/roll movements to the left. With the Captain's concurrence, I [notified] Center and requested an immediate left turn and a heading vector back to ZZZ while also initiating a descent. There were many what I describe as "cascading" ECAMs the Captain was working through at the time as it seemed that multiple systems were being affected simultaneously. One notable failure was the loss of GEN 1, so we elected to immediately start the APU in order to have a second generator available. The Captain continued to work through the list of ECAMs, confirming with me before shutting off or resetting any systems as directed by the ECAM while I maintained aircraft control and initiated a continuous descent and return.

I coordinated for a visual approach to runway XX, as it was the longest runway for the winds, and I also requested emergency vehicles to be dispatched to the runway. The Captain meanwhile coordinated with the flight attendants, made an announcement to the passengers about our return, and sent an ACARS message to dispatch informing them of we had multiple system failures and requesting landing data. The Captain went through the overweight landing checklist as we were at still approximately 148,000 lbs. Approach reference speed was approximately 149 KIAS with full flaps. I maintained control of the aircraft and performed a visual approach backed up by the ILS followed by an uneventful landing using Max reverse thrust and minimal braking. However during rollout, the E/WD screen indicated that the #1 engine thrust reverser was not deployed, however I did not perceive any directional control problems while using reverse thrust, and only minimal braking was required to clear the runway. The Captain performed an uneventful taxi to the gate and once the aircraft was secured, the passengers were deplaned using normal procedures.

Synopsis

A320 flight crew reported numerous system malfunctions during climb and returned to departure airport.

Time / Day

Date : 201811

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : VA

Altitude.MSL.Single Value : 33460

Environment

Flight Conditions : IMC

Weather Elements / Visibility : Icing

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Light : Night

Aircraft

Reference : X

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 : Cruise

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 : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1596615

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Situational Awareness

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 : Pilot Flying

Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1596616
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Overshoot
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

While serving as PM (Pilot Monitoring), on the ground in ZZZ the CA (Captain) briefed me on the flight which included the weather and a chance for turbulence. While on initial climb through 16000 ft. ATC asked about our ride saying we should be getting some cop to turn. We were in smooth air until after going from ZZZZZ to ZZZZZ1, which was a reroute given by ATC. Both our weather radars were on and returning very little to no echos.

At fl360 crossing bills about 50nm ahead was a very small patch of green on the weather radar covering the 12 o'clock to 1 o'clock position and less than 15 miles in size.

We were on a 210 heading about and the CA instructed me to ask for a 245 heading which I did and which we got with little to no delay. The CA then informed the FA (Flight Attendant) of possible turn in about 5 to 10 and to be seated by then. The passenger sign was still on. Once reaching the green area depicted on the radar, the ride started to toughen and the radio became statistic.

From here the event started and I have no real clue as to what exactly happened. I know the following things then occurred in a very short and possibly overlapping manner. I noticed the CA using the TCS to turn the aircraft more west, a visual indication of possible ice formation on the windscreen with no auto anti-ice activation. And then shortly the sound of the AP (autopilot) disconnect with the autopilot fail EICAS but the YD was still engaged. At that point the CA instructed me to turn the anti ice on.

Our ride was pretty bad. A heavy turbulence and chop although I was in my seat with just the lap belt and was not using the grab handle or being pushed against the seat or seat belt in any direction. The CA then stated to ATC he was in severe turbulence and needed to descend to FL340. We got some static from the precipitation and the CA continued to assume control of the radio saying he needed a descent to FL340 and a west turn. ATC told him to proceed. We hit one pretty good bump with him in a right turn and decent with the FD still showing a correction to the up and left.

The CA got on the radio and stated mayday mayday and that he was in severe turbulence and descending to FL340 and turning to a 270 heading. I noticed the aircraft in a descent rate up to 4500 fpm with chop and no shaker or visible PLI. Bank was about 20 degrees and pitch no more than 10 degrees.

During the CA's maneuver and transmissions with ATC I received no instructions, no communication and no feedback of the aircrafts state...not even the CA talking to himself out loud which would have been more useful than what I received. Within 30 seconds we were in the clear and the ride went from a moderate turbulence to a constant light chop with occasional moderate to then just light chop.

The CA was still descending through FL340 and I questioned him on that. He stated he was correcting. ATC was asking him for a PIREP and he was trying to describe to event while still flying manually and below our assigned altitude. The CA turned on the AP and set the airplane up to re-navigate to our next fix and had the aircraft in alt hold mode while still being at FL334.

I again quarried him and then ATC actually asked and he again took the radio and said we were correcting. After that we pretty much reassessed the navigation state of the aircraft and continued without incident. The CA called the FA and asked in any injuries had occurred and she stated no. The CA then sent all messages to Dispatch Maintenance through the ACARS.

A lot happened in a very short confusing time frame. Zero CRM (Crew Resource Management) or crew communication. No proper assignments of duties. The aircraft was defending at one point greater than 4000 FPM. We had turbulence and poor radio clarity. Threat of weather radar limitations. CA assumed PF (Pilot Flying) and PnF (Pilot not Flying) roles just because

Honestly I don't know how much there is to learn since I really don't know what exactly happened. I feel that the event was mostly pilot induced the CA basically just took over and tried to do everything, most likely interfered with the AP causing it to turn off and then assuming all communication with ATC, hand-flying and by using the glare shield PTT also no less.

I only turned on the anti ice called EICAS messages aloud and stated an altitude deviation with zero response at all during the event. Debriefing the event was equally frustrating as the whole flight I felt all I received was a defending conflicting account of how bad the turbulence was and a throwing of the CA 20 years experience into every counterpoint of my discussion with him.

I kept telling him I was more disappointed in the lack of communication and his radio hijacking then the actual event. I didn't feel like a pilot, I felt like a passenger. All I kept getting was that he felt it was so time critical that he had to articulate his requests directly with ATC, apparently to the point of using a mayday (which was a first for me) I asked him why he could not simply said aloud what he was doing and I can then tell ATC.

He agreed that there was a definite lack of communication but then continued for the remaining flight and two legs after that defending his position that "in my 20 years I just saw how bad that could have been." The I've been around longer attitude was there and he admitted to being aware of that, but still continued to pursue that as his main defense.

I just don't see a way we could have seen the turbulence event coming any better, but there is a huge need for improvement to how a crew handles such an event in real time.

Narrative: 2

Fully aware of weather enroute. Minimal convection noted. Absence at the time of departure of WST's. No Turbulence SIGMETs at the time of departure. Between ZZZZZ and ZZZZZ1, detected weather which required right deviation. Weather was 40 nm ahead. Deviated right to heading of 245. Radar tilt exercised between -1 and -2. FL360 for ride and tops. In and out of tops. No errant PIREPS. Deviations occurring. On new path, airborne weather radar indicated no echos. Returns faded and cleared display as we went further west. Began to encounter sudden and continuous moderate turbulence. It was near SEVERE, but not necessarily so, in my opinion.

Condition's deteriorated rapidly to low KIAS (200) and PLI GREEN. I had intentionally kept the airplane at a slower speed as I knew we might encounter some level of rough air/ie precaution. This likely facilitated a slow down in IAS. As such, I selected CLB thrust as I felt this was necessary to maintain safe speed.

Further, I requested immediate descent to FL340 for airspeed maintenance and hopes of a better ride. Also, it is my opinion that moderate to severe ice was encountered. I manually activated ANTI-ICE. This likely deprived us of further airspeed maintenance, but likely was necessary to prevent ice accumulation.

Radio chatter began to increase. As such, I declared a "mayday" call in order to advise ATC immediately that we needed his attention and use of the frequency. At times, radio static was severe on both radios. Our encounter ranged in altitude from FL 360-to FL 340. Further, we turned right further to HDG 275. All the while, I knew we were on the back edge of IMC/VMC conditions.

I do not believe we had altitude deviation as we were cleared to descend. I know of no traffic conflicts.

The cabin was briefed prior to this event. This applies to the passengers as well. Upon assessment, no injuries and all occupants were belted. The fact that it might have been bumpy was not a surprise. The near SVR turbulence was whoever a surprise.

To be clear, we were both fully aware of where the weather was and briefed as such. Flying in the proverbial debris area of convection. Undetectable turbulence. PLI. It would seem a wider berth was necessary. However, I am certain we avoided all echoes by more than 20 miles. I feel there was nothing to do in order to avoid.

Synopsis

Air carrier flight crew reported poor CRM when they entered an area of severe turbulence.

Time / Day

Date : 201811

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.MSL.Single Value : 18000

Environment

Flight Conditions : VMC

Aircraft

Reference : X

ATC / Advisory.TRACON : C90

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

Nav In Use : FMS Or FMC

Flight Phase : Descent

Route In Use.STAR : WATSN3

Airspace.Class B : ORD

Component

Aircraft Component : Autopilot

Aircraft Reference : X

Person : 1

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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 5881

ASRS Report Number.Accession Number : 1594888

Human Factors : Workload

Human Factors : Situational Awareness

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 Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 4196
ASRS Report Number.Accession Number : 1594889
Human Factors : Situational Awareness
Human Factors : Human-Machine Interface
Human Factors : Workload

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result.Flight Crew : Became Reoriented
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

While on WATSN arrival at FL250 and expecting to cross HULLS at 120 [heading], we were issued a descent to cross PRISE intersection at 12,000 [feet]. Aircraft was level flight, VNAV / LNAV engaged with autopilot on, utilizing good CRM. At approximately 35 miles from PRISE, Pilot Monitoring noticed we should have begun our descent (3 miles per 1,000 feet at normal descent speeds), but verified the path at our increased speed (310 KIAS) that we still had a few miles of level flight remaining. Pilot Monitoring made PA to cabin and upon return ATC asked whether we would make our crossing restriction at PRISE. At that point, both Pilot Flying and Pilot Monitoring realized we were no longer in VNAV and Pilot Flying selected LVL CHG and we began a high speed descent in accord with ATC instructions to maintain 310 or greater. Pilot Flying increased airspeed to 320 and extended speed brakes to make the crossing at 12,000 [feet].

When within 5 kts of barber pole, both pilots expected the autopilot to slowly pitch up when there was a sudden increase in airspeed due to unexpected turbulence and the high speed alert sounded and we exceed Vmo by 15-20 kias. Both pilots announced upset and Pilot Flying disengaged autopilot and slowly made the upset recovery to desirable state.

We flew the rest of the arrival and landed in ORD without incident. We made a MX entry and talked to maintenance personnel upon arrival at gate.

Narrative: 2

On descent into ORD on WATSN3 star ATC issued descent from 26 to 25k. Pilot Flying initiated DES NOW on DES page executing VVM with Pilot Monitoring. Aircraft descended from 26 to 25k on autopilot B with LNAV/VNAV engaged. ATC issued cleared us direct PRISE and to cross PRISE at 12,000 [feet] while maintaining speed of 310. After approximately 1 minute, autopilot was flying when ATC called and asked if we would be able to make PRISE at 12k. Both Pilot Flying and Pilot Monitoring simultaneously noticed VNAV was disengaged. Pilot Flying immediately reached up and engaged LVL CHG mode, extended speed brake and verbally stated the change. Pilot Monitoring acknowledged and aircraft began uneventful descent. Both Pilot Flying and Pilot Monitoring stated that it was coming down nicely and making PRISE at 12,000 [feet] shouldn't be an issue. Pilot Flying selected 320 in the IAS window which was approx. 20 kias below the barber pole. Pilot Flying also verbalized that he wanted to maintain plenty of buffer below VMO to which the Pilot Monitoring concurred. Passing thru approximately 17,000 [feet], the aircraft pitched slightly over and approached VMO. Thinking the autopilot would raise the pitch angle to catch the speed increase, the Pilot Flying paused to allow it to catch up. As it exceeded VMO, both pilot knew it was at an undesirable aircraft state. Pilot Flying then took hand control of aircraft and initiated upset recovery procedure. I am not sure if prior to doing this if the autopilot was still engaged, but no audible warning was noted. Aircraft exceeded VMO by approx. 15 KIAS. Aircraft was hand flown back to desirable state making PRISE AT 12,000 [feet]. Approach and recovery flown uneventfully.

Synopsis

B737 flight crew reported an overspeed situation while on descent to ORD.

Time / Day

Date : 201811

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : IAH.Airport

State Reference : TX

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : IMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : IAH

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 : Final Approach

Airspace.Class B : IAH

Aircraft : 2

Reference : Y

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

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 : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Type : 1066

ASRS Report Number.Accession Number : 1594726

Human Factors : Situational Awareness

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 : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 200
Experience.Flight Crew.Type : 3153.08
ASRS Report Number.Accession Number : 1594733
Human Factors : Situational Awareness

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 : Returned To Clearance
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

I was First Officer and Pilot Monitoring for the flight in question. We had the autopilot and autothrottles engaged and were coupled to the localizer with approach mode selected and ALT Hold prior to GS intercept. While on approximately a 10 mile final to the ILS 8L at IAH, we experienced a quick (1-2 seconds) upset in the roll axis resulting in an uncommanded right roll in excess of 30 degrees. The feel of the upset was wake turbulence/vortex as flight conditions were mostly smooth prior to and after the event while on approach. As the aircraft rolled right, the yoke deflected nearly full left quickly followed by "CWS ROLL" annunciation on the FMA. The Captain took immediate action in attempting to roll the aircraft level while in Control Wheel Steering (CWS) Roll and disconnected the autopilot shortly after. I called out the upset and called CWS Roll as the new FMA roll mode. The bank took the aircraft off center of the localizer although I don't recall how much. I believe it was not full deflection as I began calling to turn back left as we were deviating right. The Captain righted the aircraft and began to turn back to the left while hand flying the aircraft. At this point ATC called for us to turn left to rejoin the final approach course. I notified them that we had experienced a wake turbulence event that caused an uncommanded roll and that we were attempting to rejoin the localizer. ATC asked if we were able to continue the approach and we advised that we were able to do so. We asked what we were following and were told it was an E-170. We also asked what was on the parallel approach (8R) and were told it was also an E-170. It should be noted that the winds at 3000 feet were approximately 150/45 while lower in the approach they were 050/15. When we landed and taxied to hold short of 8R, we noted that a 747 landed before we crossed and taxied to the gate. As it had been a few minutes since we had landed we wondered where that heavy was in the approach pattern when we experienced

the upset. We did debrief the event after the flight. We concluded that our actions were an appropriate response to the wake turbulence and upset that occurred. The decision to continue the approach when queried by ATC was largely based on the fact that the immediate recovery actions were to return to our course while maintaining altitude. We did not reach GS intercept until after we recovered from the upset.

Narrative: 2

Cleared for and established on the IAH ILS 8L, autopilot on and LOC/GS captured. Approximately 9 miles from touchdown and in the vicinity of FLIBZ, the aircraft rolled to the right to approximately 35 degrees. The autopilot remained engaged and as I counteracted the roll, the roll mode reverted to CWS, pitch mode remained captured. I disengaged the autopilot, rolled wings back to level and noticed we were approximately 3/4 scale deflection right of the localizer centerline. The First Officer was also aware of the situation and advised me to come back left to center the localizer. As we were correcting, ATC also notified us to correct to the left. We informed ATC that we had encountered what we thought was wake turbulence. We were asked if we were able to continue the approach. We had corrected the deviation, the aircraft was stabilized and again established on the localizer and glide slope and the autopilot was re-engaged. We answered ATC that we were able to continue the approach and we landed without incident.

Synopsis

B737NG flight crew reported encountering wake turbulence on approach to IAH.

Time / Day

Date : 201811
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : CHO.Airport
State Reference : VA
Altitude.AGL.Single Value : 3000

Environment

Flight Conditions : VMC
Light : Night

Aircraft

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.Localizer/Glideslope/ILS : 3
Flight Phase : Descent
Route In Use : Visual Approach
Airspace.Class E : PCT

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
ASRS Report Number.Accession Number : 1593828
Human Factors : Situational Awareness

Person : 2

Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1594120
Human Factors : Situational Awareness

Events

Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Automation : Aircraft Terrain Warning
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : FLC complied w / Automation / Advisory

Assessments

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

Narrative: 1

I checked in with Potomac Approach and they descended us to 3000 feet and told us to expect vectors for the ILS 3 at KCHO. Some minutes later they gave us a turn to a heading of 220. Correcting for the wind out of the west, this put us on a right downwind for Runway 3.

It surprised us because in the minutes leading up to this we had visual on the terrain below, including cars on the roads and building lights. It was not dark/invisible terrain. However I knew the safest thing would be to climb anyway. The autopilot came off but before the FO (First Officer) flying could really react much the warning stopped. We had only gained about 150 feet since the caution sounded. We didn't immediately know what had happened. In the past I had experienced RA malfunctions in the [ERJ] that had produced false landing gear warnings, bank angle warnings, ground prox warnings etc and I considered if that had happened but the RA seemed to be working okay. It showed us slowly fluctuating in the range of about 1900-2300 AGL at 3000 MSL. Field elevation at KCHO nearby is 640 feet MSL.

As we approached the point where we would be abeam the field, ATC asked us to say our flight conditions. I replied that we were in VMC but could not yet see the field. The controller asked us if we wanted a vector to a visual or the ILS. The FO and I agreed we wanted the ILS. I told ATC this and they acknowledged. During this time we were looking off our right or 2 o'clock position a lot, trying to make out the field position. Soon after this, the EGPWS gave us a Ground Prox caution box in the PFD attitude indicator area and an Aural "Terrain terrain pull up!"

When I looked over at my iPad approach plate, my Geo-Referenced aircraft symbol showed us and our track having just passed over an obstacle/tower labeled 1795 feet just east of KCHO near the missed approach track line. I then theorized that our RA might have bounced a wave off this probably metal tower and received enough beam back to cause our RA to read about 1200 feet, an instant drop of hundreds of feet. This led the EGPWS to trigger a warning due either to us not being configured for landing, or due to the EGPWS calculating a false rapid rise in terrain, and possibly coupled with the EGPWS database knowing that tower was there very close by.

Possibly an ATC change to raise the Minimum vectoring altitude there, and/or a wider downwind closer to GVE VOR to avoid the possibility of this false warning.

Narrative: 2

I was the pilot flying. We were nearing the destination airport KCHO from the north. ATC gave us a heading to fly which set us up for a wide right downwind for runway 3. We were holding our last assigned altitude of 3000 thousand when the event occurred. Suddenly, several indications including an aural "pull up" went off. This occurred approximately 7 nm east of the airport, and coincided with the position of a charted obstruction of 1795 ft MSL, which we did not see at the time. It was night time and the surrounding area was sparsely lit.

Various messages. I can't recall all of them, but I do distinctly remember the aural "pull up." I also remember several seconds after the event occurred, looking at the radio altitude and noticing we were a little more than 2000 feet above the ground and gradually increasing that height.

Aircraft was in such a position to the obstruction on the ground, that the aircraft systems alerted the crew to danger, and to pull up.

A few seconds after the indications went off, I clicked the autopilot off. I slowly began to pitch the aircraft up and slowly began increasing the thrust levers. All messages had cleared a short period after the event occurred. As it became clear to the Captain and I that we had flown over a random tall obstruction and would be safe returning to 3000 feet, I selected the auto pilot back on. I don't recall how much altitude we had deviated when we began our slow climb, but it couldn't have been more than a couple hundred feet.

I will be more vigilant in the future about terrain at night. I will start having my position turned on while using flight deck pro. This will increase my situational awareness in the terminal area in regards to obstructions.

Synopsis

ERJ flight crew reported receiving a terrain warning while on radar vectors for a visual approach to CHO, likely due to a nearby tower.

Time / Day

Date : 201810
Local Time Of Day : 0601-1200

Place

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

Environment

Weather Elements / Visibility.Visibility : 10
Light : Dawn
Ceiling : CLR

Aircraft

Reference : X
ATC / Advisory.Tower : ZZZ
Aircraft Operator : Corporate
Make Model Name : Challenger CL600
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Passenger
Flight Phase : Takeoff / Launch

Component

Aircraft Component : Exterior Pax/Crew Door
Aircraft Reference : X
Problem : Improperly Operated

Person : 1

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Corporate
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 : 14250
Experience.Flight Crew.Last 90 Days : 50
Experience.Flight Crew.Type : 1550
ASRS Report Number.Accession Number : 1591953
Human Factors : Training / Qualification
Human Factors : Situational Awareness
Human Factors : Distraction
Human Factors : Fatigue

Person : 2

Reference : 2
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 : Instrument
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Flight Engineer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 16000
Experience.Flight Crew.Last 90 Days : 49
Experience.Flight Crew.Type : 1250
ASRS Report Number.Accession Number : 1592275
Human Factors : Situational Awareness
Human Factors : Fatigue
Human Factors : Distraction
Human Factors : Training / Qualification

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 : Rejected Takeoff
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

Main Entrance Door came open on initial takeoff roll at about 60 knots. The door contacted the runway at which time the takeoff was aborted. Raised door, secured it and then taxied off runway and return to [company].

The initial inspection of the door revealed there was sheet metal damage to the outer skin at upper end of the air stair door. The foot of the door was broken off as well. The door locking mechanism was checked and found to be working as designed. The initial inspection of the damage to the door didn't rise to the criteria of an accident.

The contributing factors to this incident were:

1. Flight crew was operating on only a couple of hours sleep after a late arrival that morning. Should have declined to do flight under these circumstances in advance.
2. Had not flown this particular aircraft type for a couple of months and had been operating a "new" type by another manufacturer. I was distracted when closing the door and did not catch the usual "door unsecured" indications as we prepared for taxi and takeoff. I believe that there was a mental transfer of "door unsecured" indications from the

new aircraft that I was applying to this model. Mental confusion!

3. Complacency from having operated this aircraft for 1500+ hours, closing and successfully securing the door for multiple hundreds of time without incident.

This has all led to deserved self-evaluation and awareness that operating under any of the above conditions can easily lead to a mishap of minor significance as this, bent metal, or more serious consequences.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

CL600 flight crew reported a rejected takeoff due to the main entry door opening.

Time / Day

Date : 201811

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : PCT.TRACON

State Reference : VA

Altitude.MSL.Single Value : 20000

Environment

Weather Elements / Visibility : Turbulence

Light : Night

Aircraft

Reference : X

ATC / Advisory.TRACON : PCT

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 : Final Approach

Airspace.Class B : PCT

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 Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1590852

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Speed : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Air Traffic Control : Issued New Clearance

Result.Air Traffic Control : Issued Advisory / Alert

Assessments

Contributing Factors / Situations : Weather
Primary Problem : Weather

Narrative: 1

During our flight to IAD we encountered severe turbulence during the descent phase of our flight just prior to the approach. We were holding at the RIC VOR when we were given a clearance to IAD via vectors. After our initial heading leaving the hold, we saw an area of weather between us and the airport. We asked for a deviation left of course to go west of the weather. The Controller indicated that east was better and sighed into the microphone. We agreed to go right (east) of the weather. After going around that band of weather we turned towards the airport and were in a descent to 3,000 feet initially, and then 2,000 feet. During this stage of the descent approximately 25-30 miles from the airport (est) we encountered severe turbulence. This was noted by the momentary loss of control, the inability to maintain altitude (in what I suspect was a downdraft), significant and abrupt changes in attitude causing blurry vision of the instruments, increase in airspeed from 250 up to 280-290 within just a few seconds without any change in power or pitch, uncommanded loss of the autopilot along with multiple caution messages which included all of but not limited to the following: stab and mach trim disconnect, right or left wing down (I don't remember which), autopilot pitch trim, and I think I remember seeing an AOA caution as well. During the portion of the event where we were unable to maintain our altitude, we temporarily descended to 1,800 feet. ATC noted that we were below the minimum vectoring altitude and to make an immediate climb to 3,000 feet. Initially I was unable to climb, but then was able to and the aircraft began climbing. We reach approximately 2,600 feet when we were given the descent by ATC back down to 2,000 feet. Once we were out of the severe turbulence and were in smoother air, we were vectored to final approach of 1R and concluded the flight uneventfully.

A few things to note:

- We did notify ATC of our inability to maintain altitude and that we were experiencing severe turbulence.
- We were unable to see the weather that was near the airport until after we deviated around the initial band of weather, so we did not know until we were in a position where we could not turn around that it was there until it was too late.

Our gut told us to divert to ZZZ while we were in the hold for almost an hour. We should have done that. We had about 25 minutes of hold fuel left so we decided to hold off. There is nothing that says we need to wait until the last drop of fuel is expended. So when we began to get the itch to get on the ground and wait for the weather to pass we should've.

- We should have been made aware long before we were in that position that there was moderate to severe precipitation along final approach and between us and the airport. Our radar was not painting what was behind the initial band that we encountered, so our request to fly west of the weather should not have been met with hesitation from ATC.

Synopsis

CRJ-200 Captain reported an encounter with severe turbulence resulted in momentary loss of control on arrival into IAD.

Time / Day

Date : 201811

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.AGL.Single Value : 1000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Light : Dawn

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAX

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 : Initial Approach

Airspace.Class B : LAX

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : LAX

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : LAX

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 : 4500

Experience.Flight Crew.Type : 2500
ASRS Report Number.Accession Number : 1590688
Human Factors : Situational Awareness
Analyst Callback : Attempted

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

While on approach to Runway 25L in LAX we encountered significant wake turbulence. We intercepted the LOC and GS outside of LIMMA and were already flaps 2. We further configured to flaps 3. Approaching LIMMA we started to get GS oscillations and the First Officer (FO) elected to turn off the autopilot and hand fly. He also called for gear down. Passing LIMMA I switched to Tower frequency. As the aircraft slowed the FO called for flaps 5. Shortly after selecting flaps 5 the aircraft began to buffet and bank 20 degrees to each side. The FO applied power and bank to control the uncommanded bank. By the time we were through the wake turbulence we were about 155kts and flaps 5. The FO called for Vapp and landing check. I set Vapp and checked in with Tower for the landing clearance and advised we had experienced wake turbulence. He advised the proceeding aircraft was an A321 and cleared us to land. During this exchange with the Tower the master caution illuminated and we received caution messages; AOA LIMIT FAIL, WINDSHEAR FAIL and SHAKER ANTICIPATED on the EICAS. Other than the caution messages the aircraft indications were normal and the aircraft was handling normally and we elected to continue with the approach and landing. With only about 300 feet before the stable approach altitude I completed the landing check. At the 1000 feet AFE we were stable and I called "1000 feet instruments normal" and got a "checks" response from the FO and a normal landing proceeded. On roll out the three caution messages disappeared and ADS PROBE 1,2, & 4 FAIL crew advisory messages appeared on the EICAS. We contacted the Maintenance radio frequency on taxi in and advised them of the messages. Upon parking we called Dispatch and Maintenance Control and advised them of the messages and filled out the logbook. We then looked at the QRH for the 3 caution messages and while the AOA LIMIT FAIL and WINDSHEAR FAIL were just to heighten the crew's awareness to the environment and aircraft condition, The SHAKER ANTICIPATED message required a crew action including changing the landing configuration, which we did not perform. It was at that moment that we realized we should have performed a go around and worked the messages prior to landing. Both the FO and I were very surprised by the wake turbulence since we were at least 5nm behind the A321, in fact the aircraft had already touched down when we hit the wake. There was a slight tailwind which could have contributed to the wake staying in the glide path. We briefly discussed the messages in flight and decided since the plane was stable and we were fully configured it was best to land and look into the messages on the ground. I had a similar situation happen a few years prior but at an

altitude of about 4000 feet on a long straight in approach to SEA. In that instance we did do a go around and went through the messages in the QRH however I don't remember the SHAKER ANTICIPATED message and checklist. It's possible that message didn't appear in that instance. But I had in the back of my mind that previously when I had this happen they were just awareness type cautions and that basically be extra vigilant as you configure and land. This previous experience bias and our lower altitude gave me the sense that it was best to just land the aircraft. Task saturation at the time the wake and messages occurred also contributed to not fully thinking through the possible issues. However, on look back and reading the SHAKER ANTICIPATED checklist and thinking about it more critically we should have gone around, performed the checklist and been flaps full as prescribed by the checklist for landing.

Synopsis

EMB-175 Captain reported system anomalies were annunciated after encountering wake turbulence 5 nm in trail of an A321 on approach to LAX.

Time / Day

Date : 201811

Place

Altitude.MSL.Single Value : 27000

Environment

Weather Elements / Visibility : Turbulence

Aircraft

Reference : X

ATC / Advisory.Center : 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 : FMS Or FMC

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZZZ

Component

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Failed

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 : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1590385

Human Factors : Situational Awareness

Human Factors : Physiological - Other

Events

Anomaly.Aircraft Equipment Problem : Less Severe

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

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 : Weather
Primary Problem : Weather

Narrative: 1

We were climbing towards our cruising altitude with roughly one hour left to go in the flight. Between 27,000 and 28,000 feet we began encountering what I would classify as moderate turbulence which was soon followed by a brief pocket of stronger turbulence causing the aircraft to enter a sharp and abrupt roll to the left. At this point in the flight the auto pilot was engaged. Due to the large change in bank angle, I reached for the autopilot disengage button to regain control of the aircraft as soon as possible. As I reached up for the control wheel and pressed the disengage switch we received an AUTOPILOT FAIL warning message. I was quickly able to regain control of the aircraft and after a few moments of more moderate turbulence, the flight conditions improved. It was at this point that I asked the First Officer to run the appropriate checklist for the warning message. We informed ATC that we had encountered a pocket of moderate to severe turbulence, had lost our autopilot, and needed to remain in non-RVSM airspace. We were cleared up to 28,000 feet. I called the flight attendant to ensure that she was unharmed and that the passengers were alright as well. She explained that she was doing her service near the exit row and hit her head on the side of one of the overhead bins. She assured me that she was ok, did not hit her head hard, and was not feeling any discomfort. She told me that she was willing and able to continue the flight. I explained that if she, at any point during the flight, began to feel any discomfort or felt that she was unable to perform her duties to let me know. She also explained to me that all the passengers were seated with their seat belts fastened, as we had not turned off the fasten belt sign. No one was injured or uncomfortable, and that she had only received a few comments of concern primarily for her to make sure she was ok after seeing her hit her head. She again assured me that she was ok to continue. We messaged Dispatch informing them of the turbulence, the autopilot failure, and let them know we would be cruising at 28,000 feet, which we had the appropriate data for. Besides the autopilot failure, myself and the first officer noticed nothing else wrong with the aircraft or the flight controls and decided that we could safely continue to [destination] without the autopilot. We landed and concluded the flight with no other issues. I made sure once again that the flight attendant was ok, and that no passengers had complained about any discomfort during any point in the flight. I feel I should mention that I decided to classify the moment of turbulence as severe because, although brief, it seemed worse than any moderate turbulence I had encountered in the past. Although I'm not sure of the exact bank angle at the time of the incident, it caused a sharp uncommanded roll to the left which was dramatic and severe enough that I would classify it as a momentary loss of control, which also seemingly failed our autopilot. Myself and the First Officer were in agreement that we should classify it as moderate to severe.

Synopsis

E145 Captain reported encountering severe turbulence which caused the auto pilot to fail.

Time / Day

Date : 201810
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : CLT.Airport
State Reference : NC
Altitude.MSL.Single Value : 17500

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Turbulence
Light : Daylight

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 : Climb

Aircraft : 2

Reference : Y
ATC / Advisory.Center : ZTL
Aircraft Operator : Air Carrier
Make Model Name : Widebody Transport
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Climb
Airspace.Class A : ZTL

Person : 1

Reference : 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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1590117
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC
Analyst Callback : Attempted

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1590682
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

We were [departing] CLT. A Heavy aircraft took off immediately before us on 36C in CLT [along the same route]. Tower gave us a "caution wake turbulence" when they gave us the lineup and wait. After the Heavy departed, Tower crossed a couple of aircraft downfield before giving us takeoff clearance (my estimate was about 2 minutes after issuing the takeoff clearance for the Heavy). We briefed CONT IGN on for possible wake and noted where the Heavy lifted off. We were able to rotate before his rotation point and turned slightly upwind of him. Initial climbout was uneventful and we selected continuous ignition OFF at approximately 12,000 feet as we felt the wake turbulence threat was over. We were keeping an eye on the Heavy that we were following on the TCAS. As we passed through FL175, the Heavy was approximately 10 NM in front of us and 3800 feet above us (with a slightly quartering headwind of 40 knots). We suddenly encountered severe wake turbulence. I immediately turned on continuous ignition. The autopilot disconnected itself and the airplane went through a series of rather violent pitch and roll oscillations. I

assumed manual control and had difficulties controlling the flight path of the aircraft. My initial reaction was to change altitude to get out of the wake, but without knowing the climb rate of the other aircraft, I was unable to determine if we could out climb it. I made the decision that the quickest and safest way to exit the wake was to make a slight turn to the left (upwind) to get out of the flight path of the heavy. As I did this, I told the First Officer (FO) to let Center know we were deviating left for severe wake turbulence. After a few seconds on the new heading, we exited the wake turbulence. The Controller did not hear us/understand us the first call, so we had to make additional calls to her to tell her what was going on. She did not sound happy with us and snapped at us for deviating without "asking first." We simply did not have time to ask nor did we have time to explain the situation. I exercised my PIC authority to deviation for what in my mind was an emergency situation (aircraft out of control). By the time we were able to converse with ATC, the situation was over, so we did not officially declare an emergency. I also had the TCAS on ABV/BLW modes and saw no potential traffic conflicts. We stayed on the offset heading for a few more miles until we were comfortable with the spacing and then continued on our flight. After the situation stabilized, I had my FO call the FA's to make sure everyone was ok. They reported there were no injuries but that the flight deck door had come unlocked and opened during the event (it was locked prior to the wake encounter). We re-secured the flight deck door and I made a PA to the passengers explaining the encounter in an attempt to calm their nerves. We continued without further incident. Inadequate spacing between us and a Heavy aircraft on the same route. Increase spacing requirements between medium/heavy aircraft, even in the enroute environment. ZTL Controllers did not caution us about the wake from the heavy, nor did they try to give us any additional spacing even after the severe wake encounter.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

CRJ-900 flight crew reported encountering severe wake turbulence 10 nm in trail of a wide body transport aircraft climbing through FL175 departing CLT. Reporter recommended increased separation.

Time / Day

Date : 201810
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SFO.Airport
State Reference : CA
Altitude.AGL.Single Value : 0

Aircraft

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

Component

Aircraft Component : Autoflight System
Aircraft Reference : X
Problem : Malfunctioning

Person

Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Air Traffic Control : Local
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1586140
Human Factors : Troubleshooting
Human Factors : Situational Awareness

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Weight And Balance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Took Evasive Action

Assessments

Contributing Factors / Situations : Aircraft

Primary Problem : Aircraft

Narrative: 1

Aircraft TOW (Take-Off Weight) approximately 140K lbs, CG 17.7, T.O. trim setting 2.7NU. During takeoff roll, approximately ten knots prior to rotate speed, nose gear began lifting off of runway. Nose down force applied to side stick controller failed to control pitch. At five knots prior to rotate speed nose gear became fully airborne and the aircraft continued an uncommanded rotation until fully airborne. For several seconds the side stick controller was unable to overcome the continued increase in pitch. As the automated pitch trim system continued to trim, normal flight characteristics were restored after approximately 20-30 seconds. Aircraft accelerated near the flap speed limit until control of the aircraft was restored.

Both dispatch and maintenance were fully debriefed about this incident. I am waiting for the results of their investigations. Improper aircraft loading and/or errors in the [performance calculations] are suspected.

Feedback from dispatch and maintenance are required to determine the cause of the incident prior to making any recommendations.

Synopsis

A321 Captain reported uncommanded rotation prior to V1 that could not be overcome by the side stick.

Time / Day

Date : 201810
Local Time Of Day : 0001-0600

Place

Locale Reference.ATC Facility : ZZZZ.ARTCC
State Reference : FO

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.Center : ZZZZ
Aircraft Operator : Air Carrier
Make Model Name : B787-800
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Nav In Use : FMS Or FMC
Nav In Use : GPS
Flight Phase : Descent

Component

Aircraft Component : Hydraulic System
Aircraft Reference : X
Problem : Failed
Problem : Malfunctioning

Person : 1

Reference : 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 : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 1585754
Human Factors : Troubleshooting
Human Factors : Workload
Human Factors : Time Pressure

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 : 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 : 1585761
Human Factors : Troubleshooting
Human Factors : Time Pressure
Human Factors : Workload

Person : 3

Reference : 3
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1585766
Human Factors : Time Pressure
Human Factors : Workload
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Flight Deck / Cabin / Aircraft Event : Illness / Injury
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Detector.Automation : Aircraft Other Automation
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : FLC complied w / Automation / Advisory
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
Contributing Factors / Situations : Human Factors
Contributing Factors / Situations : Manuals
Primary Problem : Aircraft

Narrative: 1

Enroute we first had a medical emergency. Contacted [Operations] through dispatch. I linked the [Operations Control] with the available doctor on board so they could discuss. It was determined to stop in ZZZZ to provide medical help to our passenger. We [notified

ATC] and requested to head to ZZZZ. Upon configuring into ZZZZ, we had no flap/slats so we decided to continue on to ZZZZ1 because of a longer runway and we were still in communications with Boeing. Obviously, we [notified ATC of our medical situation]. Upon determining best course of action without procedure, we dumped fuel, headed to ZZZZ1 and manually extended gear as normal extension was inoperative as well and landed uneventfully. Towed to gate. Mechanical failure, no defined procedure. Only indication was a status message which indicated HYD VLV ISOL NOSE GEAR. Maybe this valve should be rated higher than just a status message. No other indications until trying to extend slats, flaps and gear.

Narrative: 2

Flight diverted to ZZZZ for passenger medical. Aircraft experienced mechanical malfunction on approach to land, Slats Drive failure. During checklist execution aircraft experienced additional mechanical malfunction, Flaps Primary Fail. SATCOM with [Ops], [Maintenance Control], fleet pilot and Boeing representative, confirmed No Slat, No Flap landing not covered in QRH procedures or inflight performance. Coordinated with ATC to proceed to ZZZZ1 for longer runway, clear weather and burn fuel to lessen gross weight adjustment. Adjusted gross weight to below max landing weight and assist with landing distance. EICAS only status message HYD VLV ISLN Nose Gear impacted aircraft when nose gear would not extend, Alternate Gear Extension checklist resulted in gear down and lock but loss of nose wheel steering. Captain emergency authority exercised, approach to full stop executed. Aircraft towed to parking from the runway where EMT personnel tended to ill passenger.

Narrative: 3

Enroute diverted to ZZZZ for a medical issue, dispatch and the onboard responding physician. Decided on and briefed a heavy weight landing. (425,000 lbs approximately). Coordinated with Center, dispatch and operations for arrival and paramedics. Began approach. Captain called for flaps 1. Flaps one was selected immediately followed by master caution and 'slats drive' message. Priority handling and a vector [was] requested. Ran the slats drive checklist and set up for a second approach. Flaps 1 with no slat deployment and then flaps 5 was called for followed by master caution and 'flaps primary fail' message. This approach was discontinued with a further request for priority handling. Vectors were requested and given. Flaps primary fail checklist calls for alternate flaps due to the possibility of asymmetry and Uncommanded motion. We were at this time in a no flaps/no slats condition. There is no checklist for this issue. Dispatch was contacted for a phone patch to Maintenance Control. Maintenance Control connected us to Boeing. After concurrence it was decided to dump down to max landing weight. I recommended diverting to ZZZZ1 and make use of their longer runway. Clearance was requested and given by ATC. ATC climbed us to 9,000 feet and authorized fuel dumping. Approach was briefed with possible threats. At this time I noticed a status cue, HYD VLV ISLN NOSE GEAR. Boeing advised the probability of no nose steering. Approach was advised that we would be stopping straight ahead. The purser was called to the cockpit and TESTed due to the possibility of a high speed runway departure. The approach was begun. The jumpseat pilot recommended an early configuration. Gear down was called. After the handle was lowered main gear took a while to drop. Nose gear did not extend with 'gear disagree' message. Approach was broken off and the gear disagree checklist was run. Nose did deploy with alternate method. Spoilers are not to be armed and deployed manually. I felt that the Captain Pilot Flying (PF) would be fully occupied with a high speed no flaps no slat flat approach and landing and with only differential braking and I briefed with his concurrence in position to the operations manual that I would deploy the spoilers on landing. An uneventful landing was accomplished and a roll out and full stop on the

runway. Aircraft was towed to the gate and ill passenger removed by the paramedics. The use of Captain's authority was of paramount importance in this multiple [scenario] situation made more difficult by the lack of checklist guided.

Major kudos to everyone involved in the safe and positive outcome of this event. Dispatch and ATC were tremendous help with timely info and great vectors. The purser and her crew did a fantastic job in keeping the situation in the cabin calm. Also to this point the Captain made excellent PAs to the passenger. Airport personnel and staff bent over backwards to ensure the passengers crew and plane were all taken care and in a very timely manner.

Synopsis

B787 flight crew reported a hydraulic system malfunction that led to a zero flap approach and alternate gear extension landing.

Time / Day

Date : 201810

Place

Locale Reference.ATC Facility : ZZZ.ARTCC
State Reference : US
Altitude.MSL.Single Value : 35000

Environment

Flight Conditions : VMC

Aircraft

Reference : X
ATC / Advisory.Center : ZZZ
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 : Ferry / Re-Positioning
Flight Phase : Descent
Airspace.Class A : ZZZ

Component

Aircraft Component : Spoiler System
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 : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 18475
Experience.Flight Crew.Last 90 Days : 240
Experience.Flight Crew.Type : 10635
ASRS Report Number.Accession Number : 1585089

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 : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 65
Experience.Flight Crew.Type : 2241
ASRS Report Number.Accession Number : 1585102

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.Flight Crew : Landed in Emergency Condition
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Overcame Equipment Problem

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During descent into ZZZ, extended speed brakes and experienced a strong uncommanded roll to the right. Retracted the speed brakes and aircraft rolled even stronger to the left, nosed down, and overspeed clacker sounded momentarily. [We notified ATC] since this was a flight control issue and uncertainty existed as to how the aircraft would respond after landing with auto spoiler activation. Aircraft continued descent and approach without further use of speed brakes and no further controllability issues occurred. Visual approach and landing were performed without incident. Spoilers were used for landing and controllability was not an issue during landing rollout. This is the fourth write-up of this issue in a few days. This is the second such write-up from this crew. The same event occurred to us on descent...yesterday. This was a reposition flight...following a spoiler panel removal and replacement.

Narrative: 2

[On the previous flight] we...had an uncommanded 10-degree roll to the right when speed brakes applied during descent. Upon stowing speed brakes, the aircraft rolled left further than 10 degrees with the autopilot. Aircraft was written up twice prior and supposedly fixed. We wrote up this issue. The Number 3 spoiler was removed and replaced... We took off uneventfully and had no issues until descent. This time the roll seemed more exacerbated than before and when stowing the spoilers, the aircraft rolled rapidly left.

Synopsis

B737NG flight crew reported uncommanded roll with autopilot engaged during descent when spoilers/speedbrakes were extended and retracted.

Time / Day

Date : 201810

Place

Relative Position.Angle.Radial : 000
Relative Position.Distance.Nautical Miles : 0
Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC
Light : Night

Aircraft

Reference : X
Aircraft Operator : Air Carrier
Make Model Name : B757-200
Operating Under FAR Part : Part 121
Mission : Cargo / Freight / Delivery
Flight Phase : Taxi
Route In Use : None

Component

Aircraft Component : Aileron
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 : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 17500
ASRS Report Number.Accession Number : 1584964

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Detector.Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : Aircraft In Service At Gate
Result.Flight Crew : Returned To Gate

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

During our Flight Control check, the ailerons rolled 6 units to the right when the Yoke was released. Numerous attempts were made to do a successful Flight Control check, but each time the ailerons would consistently roll to the right when released. In discussing the issue with the mechanic on the headset, it was thought that perhaps the strong 30 knot quartering tailwind might be causing the problem. Therefore it was decided to [reposition] and attempt another Flight Control check once the aircraft was positioned differently in regards to the strong surface winds. With the aircraft facing different directions on both the ramp and the taxiway, multiple Flight Control Checks were attempted. Each time the ailerons would roll uncommanded to the right when the control yoke was released. In addition, the controls then became difficult to manually move back to the left. In discussing the matter with both our Dispatcher and Maintenance Control, it was decided to return to the gate.

Synopsis

B757 Captain reported the ailerons consistently rolled right after releasing the yoke during the off-gate flight control checks.

Time / Day

Date : 201810

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : VNY.Airport

State Reference : CA

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.Center : ZLA

Aircraft Operator : Fractional

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.SID : WLKKR THREE

Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1584377

Human Factors : Communication Breakdown

Human Factors : Fatigue

Human Factors : Situational Awareness

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

Events

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.Flight Crew : Became Reoriented

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Overcame Equipment Problem
Result.Air Traffic Control : Provided Assistance
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

On departure from VNY on the WLKKR3 SID, ATC told us we were right of course somewhere between HEYJO and CSTRO waypoints. We confirmed our clearance but he inquired if we were headed to COREZ. We replied "no" then he gave us a left 20 degree turn then direct COREZ. ATC seemed to be without concern. We complied and the remainder of the flight proceeded normally. Once stable in cruise flight, my FO (First Officer) and I reviewed our clearance to find out what may have happened. During preflight planning, the FO received the PDC clearance and transcribed a revised route (slightly different from our filed release) on the release paperwork. When I conducted the departure brief, waypoints were again checked but COREZ was not listed from what I reviewed. I checked the PDC approved flight plan written on the release and compared it to the FMS PDC flight plan and added it after the CSTRO waypoint because that was our new clearance (the original filed flight plan was WLKKR3 CSTRO COREZ...). Apparently my FO selected the CSTRO transition in the FMS instead of the COREZ transition and I missed that. Additionally, the page displayed on the FMS which I referenced may have been the "filed" page not the "cleared" page. After that takeoff briefing, we shut down the aircraft and waited for our [passengers] starting a 2 hour slide. Owner services called me to say our pax would be an additional one or two hours late. Pax showed at over three hours after original takeoff time. Before we departed, we reviewed departure procedures again and verified our clearance from the departure brief.

I have wrestled a couple of days on this simple mistake in order to capture and articulate the events which contributed to its occurrence. It was day 6 of 7. Both pilots are east coast based and working the late shift on the west coast since day 2 finally going to sleep between 0200 and 0500 eastern DST - causing a 4 - 6 hour shift in our normal circadian rhythms. At first the shift was difficult but I adjusted as the days progressed. Also, my FO was a 6-month new hire. He demonstrated expected high levels of anxiety from day one which compounded throughout the tour. I attempted to put him at ease using various leadership and management techniques acquired from over 37 years of flying and a life well-seasoned. My efforts mostly worked but nearly every leg, he made errors in SOPs, flows, FMS entries and flying techniques. Had I not intervened more, I estimate 2 to 3 more reports would require filing for this tour alone. I thought my vigilance was preventing errors while providing some mentoring to a young new-hire. The cumulative effect of this extra effort, along with our long duty days ending in the wee hours of the morning on the west coast aligned the holes in my ORM, CRM cheese more than normal.

So, on day six and what was to be our last flight of the tour, I missed an error when the flight plan was reviewed. The FO installed the correct SID but with the incorrect transition. When comparing this to the FMS the waypoint COREZ was not included...so I directed him to add it because it was the clearance. Simply we were to fly the WLKKR3 RNAV departure COREZ transition not the CSTRO transition. To add to the confusion, our filed flight plan included both SID ending waypoints which almost never occurs.

Moving forward I will be even more vigilant when flying with low-time new-hire FOs taking extra time discussing and reviewing FMS entries especially when not "cleared as filed" flight plans. Also, it is easy to overlook the final waypoints in this SID as they both start with the letter "C", laterally not too far apart and both included on the filed flight plan.

Synopsis

Light Transport Captain reported a heading deviation on departure due to the First Officer entering the wrong route into the FMS.

Time / Day

Date : 201810

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Aircraft

Reference : X

Aircraft Operator : Air Taxi

Make Model Name : Small Transport, Low Wing, 2 Recip Eng

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Person

Reference : 1

Reporter Organization : Air Taxi

Function.Dispatch : Dispatcher

Qualification.Dispatch : Dispatcher

Experience.Dispatch.Dispatch : 2

ASRS Report Number.Accession Number : 1583873

Human Factors : Fatigue

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Time Pressure

Events

Anomaly.Deviation / Discrepancy - Procedural : Other / Unknown

Detector.Person : Dispatch

Assessments

Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Staffing

Primary Problem : Company Policy

Narrative: 1

I'm writing to bring attention to fatigue issues with FAR 135 [dispatchers]. I am a Dispatcher. Specifically, since there are no restrictions on the amount of hours a [dispatcher] can work, leadership at my company allows some [Dispatchers] to work extremely abnormal amounts of hours. Specifically, [Dispatchers] are allowed to work a double shift for several consecutive days. "Double Shifts" are an average of 16 hours long and can go as long as 20, always with no formal breaks. Younger [Dispatchers] are signing up for this many hours for the Overtime Pay. However, this is leading to many mistakes

that are relatively minor, for now. Missing radio calls from pilots in the air; not recognizing adverse weather conditions along a flight path until someone alerts the [Dispatchers]. Not recognizing when a pilot is in danger of going over duty and/or flight time limits, etc. Other [Dispatchers] working nearby are assisting in identifying and correcting these mistakes and lack of recognition from fatigued [Dispatchers], but it is not in the context of a healthy CRM "checks & balances" relationship nor positive teamwork.

Due to staffing shortages, management appears to only be happy that all shifts are covered, and are not concerned about the overall cost and liability to all parties involved, especially our passengers. Certainly training and development can play a role in reducing these common mistakes. One only has to cite any number of fatigue studies done by the FAA to know that fatigue can make any of these small mistakes to become serious mistakes that could have grave consequences. After raising my concerns several times, and not wanting to face potential consequences of using my company's safety reporting system, I feel it prudent to report it here. Fatigue rules exist for Part 121 operations for a reason. Just because Part 135 operations involve fewer passengers, why safety should be allowed to be compromised. Safety systems work best when they are proactive, not when reacting to a worst-case event. I believe safety is being compromised by having zero duty time restrictions for [Dispatchers] at my [company].

Synopsis

Air taxi Dispatcher reported company Part 135 dispatchers are allowed to work very long hours and that fatigue has compromised safety.

Time / Day

Date : 201810

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : TEB.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2000

Environment

Flight Conditions : IMC

Light : Daylight

Aircraft

Reference : X

ATC / Advisory.TRACON : N90

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

Operating Under FAR Part : Part 91

Mission : Passenger

Flight Phase : Initial Approach

Component

Aircraft Component : Autopilot

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

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 : 1583652

Human Factors : Troubleshooting

Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

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 : 1583653
Human Factors : Troubleshooting

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : FLC Overrode Automation
Result.Flight Crew : Returned To Clearance

Assessments

Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

Narrative: 1

While intercepting ILS 19 Approach into TEB the aircraft did not capture the localizer and approach mode was re-engaged. At that time the aircraft climbed uncommanded while autopilot was engaged and in altitude hold. We both recognized the "uncommanded pitch up" and corrected our altitude. ATC (NY TRACON) then queried our altitude and we replied with our current corrected altitude of 2,000 feet. I also noticed a yellow FD1 on my copilot PFD.

Narrative: 2

At 2,000 feet assigned, being vectored to ILS 19, cleared for approach. Avionics showed us ALT Hold, 2,000 feet, approach armed, TERM mode, with no error messages. Upon intercepting LOC course it was obvious that a switchover to "green needles" was not occurring. I announce that I was switching manually and did so. Switchover to LOC (green needles) occurred and autopilot captured normally. At this time, on localizer, the aircraft pitched upward and began a climb. I've seen weird behavior from TEB ILS approaches before so I decided to give it to 2,100 feet to allow it to correct. It did not, in fact, the FD bars moved further upward and pitch seemed to be following. Pilot Monitoring (PM) called the deviation at this same time as I disconnected autopilot to correct- maximum deviation observed was 2,300 (300 feet above assigned 2,000). Length of deviation was only a few seconds and there was no traffic in the vicinity above us. When level at 2,000 again, ATC called and verified our altitude, said "looked like you guys were at 2,400... be careful" We advised that we were in fact level at 2,000. PM at this time advised that he had a yellow "FD-1 flag." At this point, hand flying, level at 2,000, just inside UNVIL, on speed and on glide slope. Approach was stable so we continued approach. Autopilot was reengaged as there was not flags or abnormalities on the left side and we were stable on the approach. Approach and landing were normal, and the event was not noticed by passengers (no negative gee on the altitude return). We were never told to contact anyone nor were we advised of any possible deviation. Upon landing we wrote up the malfunction ("uncommanded pitch up on ILS approach") as per policy and notified Fleet. Again, we've seen weird stuff similar to this (mostly with the localizer) at TEB. Furthermore, there have been times when this exact scenario has occurred before (not switching to green needles and we manually switch). We have never seen this be accompanied by any type of uncommanded pitch. Also, we verified that the "go around" button was not accidentally pushed (it would have sequenced FMS and disconnected autopilot if it had).

Synopsis

Small Transport flight crew reported an autopilot malfunction as they were capturing the localizer causing them to leave their assigned altitude.