

ASRS Database Report Set

Wake Turbulence Encounters

Report Set Description.....A sampling of reports from flight crews encountering,
or affected by, turbojet wake turbulence.

Update Number.....24

Date of UpdateJuly 9, 2024

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

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

National Aeronautics and
Space Administration

Ames Research Center
Moffett Field, CA 94035-1000



TH: 262-7

MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data

SUBJECT: Data Derived from ASRS Reports

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

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

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

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

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

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

Becky L. Hooey, Director
NASA Aviation Safety Reporting System

CAVEAT REGARDING USE OF ASRS DATA

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

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

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

Report Synopses

ACN: 2085092 *(1 of 50)*

Synopsis

Cessna 172 pilot reported a violent wake turbulence encounter on short final at SNA that resulted in an inflight upset with recovery accomplished within 50 feet of the ground.

ACN: 2082586 *(2 of 50)*

Synopsis

Cessna 172 instructor pilot reported an inflight upset and loss of control incident from an A320 on approach to SNA airport. Control was regained at low altitude, narrowly averting a collision with a taxiing B737NG.

ACN: 2081872 *(3 of 50)*

Synopsis

HS-125 Captain reported encountering wake turbulence in trail of a C-130 in SCT airspace.

ACN: 2078758 *(4 of 50)*

Synopsis

Air Carrier ERJ170 Captain reported encountering wake turbulence in trail of a B777 climbing through FL275. Reporter stated there was no alert from ATC prior to the encounter.

ACN: 2078297 *(5 of 50)*

Synopsis

ERJ-170 flight crew reported encountering wake turbulence on descent into SDF that resulted in a momentary overspeed.

ACN: 2077626 *(6 of 50)*

Synopsis

ERJ-170 First Officer reported encountering wake turbulence during takeoff that resulted in a momentary overspeed.

ACN: 2074393 *(7 of 50)*

Synopsis

EMB-145 flight crew reported encountering wake turbulence departing CLT that resulted in a track deviation.

ACN: 2072280 *(8 of 50)*

Synopsis

B737-700 First Officer reported climbing through an altitude restriction departing DEN. A distracting wake turbulence encounter was cited as contributing.

ACN: 2072267 *(9 of 50)*

Synopsis

B737 MAX 8 Captain reported encountering wake turbulence in cruise flight at FL260 that resulted in minor injuries to a Flight Attendant.

ACN: 2071367 *(10 of 50)*

Synopsis

A319 Captain reported executing a missed approach at EWR after encountering wake turbulence from a preceding B787.

ACN: 2071351 *(11 of 50)*

Synopsis

B737-700 Captain reported encountering wake turbulence in cruise flight at FL340 from a preceding B737 that resulted in a sudden 30 degree bank left and then right.

ACN: 2071051 *(12 of 50)*

Synopsis

B767-300 flight crew reported exceeding 250 kts below 10,000 ft when their unloaded aircraft accelerated more quickly than anticipated. A wake turbulence encounter was cited as contributing to the incident.

ACN: 2070516 *(13 of 50)*

Synopsis

B737-700 Captain reported overshooting a climb restriction departing DEN, citing a wake turbulence encounter and improper autoflight programming as contributing.

ACN: 2069919 *(14 of 50)*

Synopsis

Cessna 172 reported encountering wake turbulence from a DC-10 in the pattern at MCC.

ACN: 2069720 *(15 of 50)*

Synopsis

EMB-175 First Officer reported encountering wake turbulence on descent into IAH in trail of a B787.

ACN: 2066868 *(16 of 50)*

Synopsis

Air carrier flight crew reported track and altitude deviations occurred on departure from LAS, citing distractions from wake turbulence as contributing.

ACN: 2066281 *(17 of 50)*

Synopsis

B737 MAX 8 Captain reported encountering wake turbulence on approach to EWR.

ACN: 2065393 *(18 of 50)*

Synopsis

B737NG flight crew reported executing a go-around from a low altitude after spacing issues became apparent. Earlier in the flight they encountered wake turbulence that resulted in airspeed loss of 10-15 knots.

ACN: 2065292 *(19 of 50)*

Synopsis

EMB-145 First Officer reported executing a go-around from low altitude at CLT after encountering wake from an A321 departing on the same runway.

ACN: 2065284 *(20 of 50)*

Synopsis

ERJ175 First Officer reported encountering wake turbulence from the preceding heavy jet after ATC had not given a clearance to slow down for the approach.

ACN: 2065234 *(21 of 50)*

Synopsis

EMB-175 Captain reported encountering wake turbulence enroute to MIA in trail of a B787.

ACN: 2063593 *(22 of 50)*

Synopsis

BE400 flight crew reported climbing through an altitude restriction departing DEN because they were responding to a wake turbulence encounter from the preceding B737.

ACN: 2062381 *(23 of 50)*

Synopsis

Cessna 172 flight crew reported encountering wake turbulence while on short final from a heavy aircraft on a parallel approach and performed a go-around after bouncing on the runway. Upon touchdown, the nose and left main tire burst and the aircraft came to a stop on the runway. There were no injuries.

ACN: 2060916 *(24 of 50)*

Synopsis

B737NG flight crew reported airspeed over 250 kts below 10,000 ft. in descent to CVG after they were distracted by a wake turbulence encounter.

ACN: 2059755 *(25 of 50)*

Synopsis

EMB-145 First Officer reported executing a go-around after encountering wake turbulence on short final at PHL.

ACN: 2059707 *(26 of 50)*

Synopsis

A321 Captain reported executing a go-around after encountering wake turbulence on short final at CLT.

ACN: 2057063 *(27 of 50)*

Synopsis

B737-700 flight crew reported abnormal flight control response in pitch during departure phase. They elected to divert to a nearby suitable airport.

ACN: 2056679 *(28 of 50)*

Synopsis

A320 Captain reported executing a go-around after encountering wake turbulence on final approach from a preceding B777. During the go-around the flight crew experienced fuel imbalance anomalies.

ACN: 2055349 *(29 of 50)*

Synopsis

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

ACN: 2054209 *(30 of 50)*

Synopsis

CRJ-700 Captain reported an altitude deviation occurred on approach to ATL following a loss of the localizer signal and a wake turbulence encounter.

ACN: 2052120 *(31 of 50)*

Synopsis

B737 Captain reported encountering wake turbulence departing LAX in trail of an A320.

ACN: 2050992 *(32 of 50)*

Synopsis

CE-700 Captain reported a track deviation occurred when they mismanaged autoflight systems following a momentary wake turbulence encounter descending into IAD.

ACN: 2050829 *(33 of 50)*

Synopsis

B737-700 First Officer reported slowing below assigned speed without clearance to avoid wake turbulence while on descent into LAX following a preceding B757.

ACN: 2049168 *(34 of 50)*

Synopsis

A321 Captain reported encountering wake turbulence at FL340 from a crossing B767.

ACN: 2048258 *(35 of 50)*

Synopsis

EMB-145 Captain reported encountering violent wake turbulence shortly after takeoff from CLT.

ACN: 2046300 *(36 of 50)*

Synopsis

A319 Captain reported encountering wake turbulence while descending that resulted in a slight altitude deviation that did not exceed more than 200 ft. above cleared altitude.

ACN: 2045619 *(37 of 50)*

Synopsis

Air Carrier B757 Captain reported encountering wake turbulence at FL360 from a preceding B737.

ACN: 2045480 *(38 of 50)*

Synopsis

A319 First Officer reported an altitude excursion occurred following a clear air turbulence event that may have been a wake vortex encounter.

ACN: 2042958 *(39 of 50)*

Synopsis

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

ACN: 2033373 *(40 of 50)*

Synopsis

EMB-170 flight crew reported encountering wake turbulence climbing out of FL290 departing PHX. Reporter stated he believes PHX Tower procedures contributed to the encounter.

ACN: 2031019 *(41 of 50)*

Synopsis

EMB-175 First Officer reported encountering wake turbulence on descent into IAD 7 miles in trail of a B787.

ACN: 2031006 *(42 of 50)*

Synopsis

G550 Captain reported encountering wake turbulence descending through FL380 13 miles in trail of a B787. Reporter suggested increased separation might be advisable.

ACN: 2028672 *(43 of 50)*

Synopsis

Cessna 402 pilot reported encountering wake turbulence on approach to BOS.

ACN: 2027965 *(44 of 50)*

Synopsis

Air Carrier B737-800 Captain reported encountering wake turbulence from preceding aircraft just before touchdown at DFW.

ACN: 2027932 *(45 of 50)*

Synopsis

EMB-170 flight crew reported encountering wake turbulence seven miles in trail of a B747 on approach into DFW.

ACN: 2027755 *(46 of 50)*

Synopsis

EMB-145 Captain reported encountering wake turbulence just before touchdown from a preceding Airbus that resulted in an EGPWS "Don't Sink" alert. Reporter stated the aircraft energy state was low so a decision to continue to a safe landing was made.

ACN: 2026165 *(47 of 50)*

Synopsis

B737 Captain reported wake turbulence incidents have become more prevalent and suggested there to be more consideration with wake turbulence recategorization.

ACN: 2025780 *(48 of 50)*

Synopsis

B737 NG Captain reported encountering wake turbulence at FL320 in ZNY airspace.

ACN: 2024399 *(49 of 50)*

Synopsis

B737-800 Captain reported encountering wake turbulence while 8 miles in trail of another heavy aircraft on descent into MIA.

ACN: 2023557 *(50 of 50)*

Synopsis

B737-700 flight crew reported experiencing wake turbulence while climbing to assigned altitude and proceeded to overshoot the altitude. ATC was informed and the Captain corrected the aircraft back to the assigned altitude.

Report Narratives

Time / Day

Date : 202402

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : SNA.Airport

State Reference : CA

Altitude.MSL.Single Value : 100

Environment

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : SNA

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Flight Phase : Final Approach

Route In Use : Visual Approach

Airspace.Class C : SNA

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : SNA

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Flight Phase : Landing

Airspace.Class C : SNA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 260

Experience.Flight Crew.Last 90 Days : 5

Experience.Flight Crew.Type : 180

ASRS Report Number.Accession Number : 2085092
Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

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

Narrative: 1

Sequencing and separation of aircraft are notoriously tight with the volume of traffic into the airport (SNA). Landing aircraft landed longer than usual on Runway 20R and winds were blowing wake turbulence towards Runway 20L. Approximately 100 feet above ground we encountered what was presumably violent wake turbulence. I thought I had given adequate altitude, distance, and time separation, but it required immediate evasive recovery action. Aircraft rolled over 45 degrees to the right and nose down. Leveling using full left deflection, recovering pitch, and applying full power, aircraft was easily less than 50 ft from the ground. Executed go-around with uneventful landing on second approach. This is my home airport and I've had repeat training on wake turbulence, so I like to think that I'm familiar with the area and hazards, but this was terrifyingly close. I have to wonder if different sequencing should be applied, such as more guidance on go-around criteria or extended legs. On my second approach I flew an extended downwind because another heavy aircraft was landing on the parallel runway. Tower does not provide wake turbulence separation (only states caution), but perhaps a different policy should be considered. I will clearly be applying even more time, altitude, and distance separation in all my future flights, I just hope someone else doesn't encounter the same event with a tragic outcome.

Callback: 1

Reporter stated that high volume of traffic at SNA frequently results in tight sequencing that increases the possibility of wake encounters.

Synopsis

Cessna 172 pilot reported a violent wake turbulence encounter on short final at SNA that resulted in an inflight upset with recovery accomplished within 50 feet of the ground.

Time / Day

Date : 202402

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SNA.Airport

State Reference : CA

Altitude.AGL.Single Value : 75

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 2400

Aircraft : 1

Reference : X

ATC / Advisory.Tower : SNA

Aircraft Operator : FBO

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Training

Flight Phase : Final Approach

Airspace.Class B : SNA

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : SNA

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 : Final Approach

Flight Phase : Landing

Airspace.Class B : SNA

Aircraft : 3

Reference : Z

ATC / Advisory.Tower : SNA

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR
Mission : Passenger
Flight Phase : Taxi

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Instructor
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 726
Experience.Flight Crew.Last 90 Days : 135
Experience.Flight Crew.Type : 700
ASRS Report Number.Accession Number : 2082586
Analyst Callback : Completed

Events

Anomaly.Conflict : Ground Conflict, Critical
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Anomaly.Inflight Event / Encounter : CFTT / CFIT
Detector.Person : Flight Crew
Miss Distance.Horizontal : 40
Miss Distance.Vertical : 20
When Detected : In-flight
Result.Flight Crew : Regained Aircraft Control
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

Conducting continuous left closed traffic operations on Runway 20L SNA in a Cessna 172S with myself sitting left seat and student sitting right seat as they are training for CFI. An Airbus A320 was landing on the parallel Runway 20R and was advised to maintain visible separation and caution wake turbulence from SNA tower 119.9 for that Airbus. We accepted and were cleared for the option Runway 20L. Airbus A320 continued to land and made it to Runway 20R while we were turning base to final Runway 20L. We altered our flight path to remain above that of the Airbus as winds were reported and observed to be a right crosswind. Meanwhile a B737 moved forward to cross Runway 20L and hold short 20R on Lima. This reaffirmed our decision to remain high to avoid jet blast as well as the landing Airbus's wake. Continuing the descent to land, stable and configured, aircraft encountered the onset of wake turbulence forces and began to roll right uncommanded directly above 20L runway threshold at approximately 75-100 ft. AGL. I instructed the student to immediately initiate a go-around to which there was a delayed reaction, within 1-2 seconds after command was given, aircraft encountered substantially stronger wake

turbulence forces and abruptly rolled uncommanded to the right departing controlled flight rolling to approximately 40+ degrees of bank and -10+ degrees of nose pitch down. With student's delayed reaction to go-around I commanded "my controls" which were not relinquished causing me to forcefully take the controls with continuous verbal command given in a raised voice. With forceful takeover of the controls, immediate full power was commanded and began to maneuver to avoid contacting the ground and the B737 holding between the runways on L. Aircraft was on a collision course with the B737's left wing section which was narrowly avoided after regaining controlled flight by a margin of 20-50 ft. from the B737 and 15-30 ft. from the ground. After successful maneuvering to avoid collision, continued a recovery and climb back towards Runway 20L center line as the aircraft made it roughly to location of the Runway 20R PAPIs at its furthest deviation. John Wayne Tower was then advised of the go-around and presence of severe wake turbulence event. Tower acknowledged and was startled as well as they witnessed the occurrence and asked if we request any assistance. Advised we did not require assistance and no aircraft damage was observed followed by requesting to terminate. Flight was terminated, returned to parking and assessed for any damage. None observed.

Callback: 1

Reporter stated this type of wake turbulence incident has become so common his flight school now recommends not using SNA for training operations when there is a right crosswind.

Synopsis

Cessna 172 instructor pilot reported an inflight upset and loss of control incident from an A320 on approach to SNA airport. Control was regained at low altitude, narrowly averting a collision with a taxiing B737NG.

Time / Day

Date : 202401

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : SCT.TRACON

State Reference : CA

Relative Position.Angle.Radial : 090

Relative Position.Distance.Nautical Miles : 50

Altitude.MSL.Single Value : 15000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 20

Light : Daylight

Ceiling.Single Value : 25000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Taxi

Make Model Name : HS 125 Series

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Direct

Route In Use.SID : CATH1.PSP

Airspace.Class E : SCT

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : SCT

Aircraft Operator : Military

Make Model Name : Hercules (C-130)/L100/382

Operating Under FAR Part : Part 91

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 : 13000

Experience.Flight Crew.Last 90 Days : 120
Experience.Flight Crew.Type : 150
ASRS Report Number.Accession Number : 2081872
Human Factors : Communication Breakdown
Human Factors : Confusion
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Dispatch
Analyst Callback : Completed

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We were level at 15,000 feet and instructed to climb to a higher altitude. Both myself and the First Officer had been observing traffic on our TCAS indicating 500 feet above us and at our 12 o'clock position that appeared to be heading towards us and 4 miles in range and closing that they had not called out to us. I informed ATC of the traffic and that we did not want to climb. There were numerous other aircraft on the frequency stepping on each other which made communication poor while the situation was unfolding. In the meantime we hit turbulence which rolled the aircraft about 30 degrees in bank to the left and about 3-5 degrees down. I disconnected the auto pilot and took control from the First Officer who was flying at the time. In the recovery period, I gained about 400 feet of altitude before things got settled down. We were instructed to fly heading and altitude at that point by the controller who was being repeatedly stepped on in transmissions between both of us. The other aircraft ended up being a C-130 and we had flown into his wake as he was headed the same direction we were. Because of our higher airspeed than his, it had appeared to us that he was coming towards us in the opposite direction until we were able to visually see that we were overtaking him instead. Separation was maintained and the altitude and heading was adhered to after things settled down. SoCal shortly afterward handed us off to LA Center and I advised them of our running thru the C-130's wake which had led to our deviations. The controller acknowledged she was sorry and we continued our flight uneventful from there. Too much traffic on the frequency certainly contributed to communication problems thru the incident.

Callback: 1

Reporter stated the wake effect was quite strong considering it was a C-130 and not a heavy jet.

Synopsis

HS-125 Captain reported encountering wake turbulence in trail of a C-130 in SCT airspace.

Time / Day

Date : 202311

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZDC.ARTCC

State Reference : VA

Altitude.MSL.Single Value : 28000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZDC

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class A : ZDC

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZDC

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Airspace.Class A : ZDC

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2078758

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

Climbing out of DCA had multiple speed/HDG (Heading) changes for spacing. Climbing up to FL270 had speed assigned of 270 knots. Switched to freq of XXX.XX and was told to maintain 290 knots. There had been weather all day and rides weren't the best so ATC has a canned answer of no bad rides which unfortunately is normal now. Climbing out we were IMC and it was not smooth but light chop. As we were climbing ATC asked us if we could climb to FL290 and we could so were assigned FL290. As we were climbing through FL270 the ride started to deteriorate but I blamed it on getting in the tops of the clouds and I noticed we were climbing at the same rate as the plane 5 miles ahead of us on TCAS and didn't think much of it. At about FL275 we get above the clouds and I could physically see the plane in front of us and I knew something didn't look correct and about the same time we hit their wake and it was bad - it was a Boeing 777. We tossed from left to right pretty violently and I tried to get the plane under control never got a bank angle warning. I slowed down and immediately slowed the climb rate to stay below their path. I asked for off course heading and was given 10 left or right. We were directly downwind of the 777 wake turbulence but still had visual so I went left. I asked why were not given a heads up of this plane and to which I didn't get an answer. I asked again and there was a controller change. Did someone mess up? I had my FO (First Officer) call to the back to see if everyone was OK and Flight Attendants said they were okay. Once on ground I was informed by the A Flight Attendant that she was tossed to the ground and fell on her hands and knees but she was OK. Hitting wake turbulence at FL280 could have resulted in a much worse result and thankfully it didn't.

Synopsis

Air Carrier ERJ170 Captain reported encountering wake turbulence in trail of a B777 climbing through FL275. Reporter stated there was no alert from ATC prior to the encounter.

Time / Day

Date : 202308

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SDF.Airport

State Reference : KY

Environment

Weather Elements / Visibility : Turbulence

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SDF

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class C : SDF

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : SDF

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class C : SDF

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2078297

Human Factors : Situational Awareness

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2078247
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

Soon after being handed off to SDF Approach we were assigned a heading and issued a descent from 12,000 to 3,000. We had experienced smooth air throughout the entire descent. While descending through 11,800 in FPA (Flight Path Angle) -2.2 with 310 selected as the airspeed, we encountered moderate wake turbulence for about a minute. The airspeed jumped up and indicated red for a second or less, aural "high speed" was heard twice. My FO (First Officer) noted the speed indicated 318 during the alerts. I took corrective action via idle thrust and speedbrakes. We wrote up the encounter and notified Dispatch and Maintenance once at the gate. I should have slowed earlier in the terminal environment and expected the possibility of a wake encounter given we were arriving during the beginning of the company push.

Narrative: 2

In descent on the REDSTONE6 into SDF, Captain had the speed bug set about 310. The flight had been very smooth thus far, not a single complaint of chop or turbulence. At 12,000 ft., we received a clearance down to 3000 ft. Captain set 10,000 in the altitude bug to level at 10, slowdown, and then continue the descent down to 3,000. Shortly after beginning descent, around 11,800 ft., we hit some unexpected wake turbulence and it shot the airspeed up just above the barber pole. As soon as the wake was hit, the Captain pulled the thrust levers to idle and opened the speedbrakes, but it was too late. The highest speed I personally saw was 318 kt., and we received the "HI SPEED" annunciation twice. We were in this condition for roughly one second; maybe just over, maybe just under. Once we recovered, we continued on and completed the flight without further incident. Upon reaching the gate, Dispatch and Maintenance were notified and it was written up. As a side note, I would like to say that I believe the Captain handled this situation well and give props to his reaction time and doing all he could to return us to a safe bank angle and airspeed as quickly as possible from the abrupt wake that caught us both off guard. Flying at such an airspeed can be a gamble, simply bugging 300 instead of 310 could have averted this issue.

Synopsis

ERJ-170 flight crew reported encountering wake turbulence on descent into SDF that resulted in a momentary overspeed.

Time / Day

Date : 202304
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : EWR.Airport
State Reference : NJ
Altitude.MSL.Single Value : 2300

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : N90
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 Climb
Airspace.Class B : EWR

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : N90
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Initial Climb
Airspace.Class B : EWR

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2077626
Analyst Callback : Attempted

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight

Result.General : Maintenance Action
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

During acceleration / level-off on Newark 4 around 2,300 ft. Flap lever moved from 1 - up. Encountered wake turbulence causing airspeed to jump from 210 to 225, throttles moved to idle, speed rose to 225 for around 5 seconds. "High speed" aural warning chimed once, speed reduced back near the magenta 210 speed bug. Max speed rescheduled. Notified Maintenance upon landing. Maintenance checked the flaps and slats, said they were in good condition.

Synopsis

ERJ-170 First Officer reported encountering wake turbulence during takeoff that resulted in a momentary overspeed.

Time / Day

Date : 202401

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : CLT.Airport

State Reference : NC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : CLT

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2074393

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2074391

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Taking off from Runway 36C behind an Airbus A321 we encountered wake turbulence around 1200 ft. and the plane abruptly banked to the right and caused us to deviate from the SID. I recovered and Captain informed Tower and they gave us a heading and asked if we needed help. We replied negative and then were cleared direct RITR and continued flight. Suggestion: Separation behind other departing aircraft.

Callback: 1

Reporter stated the wake encounter was more abrupt than anticipated.

Narrative: 2

During takeoff from Runway 36C, climbing via SID KRITR5 at 1260 feet, we encountered wake turbulence behind an Airbus. At 1260 feet we turned heading 330 degree per SID. Instead the aircraft banked to the right aggressively due to wake turbulence, causing us to deviate from SID. [We] lost the course, immediately informed CLT Tower asking for heading. CLT Tower asked if we need assistance. Replied "negative" vectored, then cleared direct to RITR and continued our flight. Suggestion: ATC must give us a separation behind an other aircraft for at least 3 min or more.

Synopsis

EMB-145 flight crew reported encountering wake turbulence departing CLT that resulted in a track deviation.

Time / Day

Date : 202401

Place

Locale Reference.ATC Facility : D01.TRACON
State Reference : CO
Altitude.MSL.Single Value : 12000

Environment

Light : Night

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : D01
Aircraft Operator : Air Carrier
Make Model Name : B737-700
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb
Airspace.Class B : DEN

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : D01
Aircraft Operator : Air Carrier
Make Model Name : B737-800
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb
Airspace.Class B : DEN

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 191
Experience.Flight Crew.Type : 278
ASRS Report Number.Accession Number : 2072280
Human Factors : Situational Awareness

Human Factors : Distraction
Analyst Callback : Attempted

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Departed on Runway 34L in Denver on the EEONS8 Departure. Captain was Pilot Flying (PF), I was Pilot Monitoring (PM). We departed behind a Company -800 which produced a great amount of wake turbulence that we encountered. Captain was hand-flying the aircraft and somewhere in preparation for departure, VNAV did not get properly armed. Neither of us noticed until he called "Set Speed," and I subliminally noticed in my head the speed bug did not jump up as it usually does. During that time, we began to encounter wake turbulence from the aircraft departing in front of us, which took both of our attention. We climbed above the altitude restriction of "at or below 10,000 ft," at HIDEF by about 1000 ft. Departure noticed and gave us a vector to climb and then direct another point down the departure. Nothing was said by ATC about the event.

Synopsis

B737-700 First Officer reported climbing through an altitude restriction departing DEN. A distracting wake turbulence encounter was cited as contributing.

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZHU.ARTCC

State Reference : TX

Altitude.MSL.Single Value : 26000

Environment

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZHU

Aircraft Operator : Air Carrier

Make Model Name : B737 MAX 8

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZHU

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZHU

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Cruise

Airspace.Class A : ZHU

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2072267

Human Factors : Situational Awareness

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Physical Injury / Incapacitation

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

Houston Center vectored us off our en route course to join the BAYYY Arrival due to crossing traffic. This traffic was 20 to 40 miles in front of us crossing from left to right. Ride had been smooth and we were approximately 75 miles from top of descent. The headwind was strong, about 90 knots. Without any warning, we experienced a wake turbulence event that was abrupt and significant enough to disconnect the autopilot. After we recovered, Pilot Monitoring checked on cabin crew/passengers. A Flight Attendant had been thrown to the floor and complained of pain in her hip and elbow. We asked if we could provide any assistance and/or have someone meet us at the gate. Injured attendant declined. After the flight, Pilots debriefed the cabin crew on what had transpired and inquired as to any concerns from passengers (there were none). I believe this event was the result of lack of vision. As Pilot Monitoring, I didn't consider that although the traffic was far away, the strong headwind pushed the wake turbulence into us in an unexpected location. I will bring this into my assessment in future traffic crossings.

Callback: 1

Reporter stated they were surprised at the intensity of the wake given the distance to the preceding aircraft.

Synopsis

B737 MAX 8 Captain reported encountering wake turbulence in cruise flight at FL260 that resulted in minor injuries to a Flight Attendant.

Time / Day

Date : 202401

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : N90.TRACON

State Reference : NY

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : IMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : EWR

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : EWR

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 158.3

Experience.Flight Crew.Type : 2670.20

ASRS Report Number.Accession Number : 2071367

Analyst Callback : Completed

Events

Anomaly.ATC Issue : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Executed Go Around / Missed Approach

Result.Flight Crew : Diverted

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

On base to ILS 22L at EWR the ATC Controller put us within 5 nm of a heavy 787 in moderate turbulence. We were downwind and in the wake of the 787 and the Controller waited for our turn to final to get us separation and made a snide response "I'll give you all the separation you need." It wasn't enough and due to turbulence and landing conditions at EWR we discontinued the approach and diverted.

Callback: 1

Reporter stated it was a very rough ride with high crosswinds, convective turbulence, and wake mixed in together.

Synopsis

A319 Captain reported executing a missed approach at EWR after encountering wake turbulence from a preceding B787.

Time / Day

Date : 202401

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZOA.ARTCC

State Reference : CA

Relative Position.Distance.Nautical Miles : 15

Altitude.MSL.Single Value : 34000

Environment

Light : Dusk

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZOA

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZOA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZOA

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZOA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2071351

Human Factors : Situational Awareness

Human Factors : Distraction
Analyst Callback : Attempted

Events

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

Assessments

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

Narrative: 1

We were cruising at FL340 with a clearance to descend via the SILCN6 Arrival, well prior to the TOD. I had noticed in the windscreen an aircraft ahead of us putting out contrails that were curling into perfectly symmetrical swirls but didn't think much about it. I had assumed it was 1,000 ft. or so above or below and was coming against us, but I believe now it was co-altitude company traffic going the same direction. We had a new hire pilot on the jump seat doing an observation ride and were talking flying/Company stuff which probably distracted me from possible hazard ahead. Fairly suddenly, the aircraft rolled 30 degrees to the left, and then started back rolling to the right. I immediately recognized it as wake turbulence and hit the altitude intervention button to start a descent to get out from it. The 1970's 286 processor took too long for me to start the descent, so I punched off the autopilot and started the descent manually. Once the electronics caught up, I reconnected the autopilot, probably within 500 ft. of descent. I asked my FO (First Officer) to report it to ATC whose reaction was utter disbelief by his tone and words used. That's when I learned it was Company ahead of us. I don't know if it was a larger version of the 737 or not. I did notice we had about 116 knots of tailwind directly at our 6:00 position probably exacerbating the setup (or at least not alleviating it). My FO looked up if it was a reportable incident or not, and the manual just stated ATC was all that was required. Our Flight Attendants (and therefore our customers as well) definitely noticed it, because they mentioned it on the ground. I decided to write this report to have as a data point, and because ATC was so utterly surprised and really non-believing that these things happen (and happened!). I don't remember how far we were from Company, but I am guessing within 20 NM? I think ATC mentioned the distance when we reported it, but I was busy trying to maintain aircraft control, so I didn't hear exactly what he said. I should have analyzed with TCAS how far ahead and what direction the aircraft was that was making the pretty contrails. Pilot crews (me included) and ATC should be more aggressive at putting in route offsets when the potential for wake turbulence exists. Educating our crews on our FMS's offset function could help in that effort. I don't think Controllers are all that aware of the hazard.

Synopsis

B737-700 Captain reported encountering wake turbulence in cruise flight at FL340 from a preceding B737 that resulted in a sudden 30 degree bank left and then right.

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 3000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : 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

Nav In Use : FMS Or FMC

Flight Phase : Initial Climb

Airspace.Class B : ZZZ

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Heavy Transport, Low Wing, 4 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Initial Climb

Airspace.Class B : ZZZ

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2071051

Human Factors : Situational Awareness

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 7760
Experience.Flight Crew.Last 90 Days : 130
ASRS Report Number.Accession Number : 2071482
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

I was the pilot flying, and the Captain was the pilot monitoring. The 767-300 aircraft was completely unloaded. Our aircraft was cleared to 5000 feet on the DOTSS2 RNAV departure out of LAX but there was an intermediate restriction at HIPPR to remain below 3000 feet. Preflight, a threat was identified that the light loaded aircraft would have difficulty making the 3000 foot intermediate restriction on departure. A mitigation of deselecting the auto pilot was pre-briefed to account for this threat. Takeoff proceeded normally. Autopilot was selected at 200 feet per the brief. LNAV was already active at 50. PF selected VNAV at 1000 feet according to the brief. The light aircraft accelerated and climbed rapidly. The thrust management computer had a target of 250 kts indicated airspeed and it rapidly accelerated to that as the aircrew got the gear up and flaps up. Approaching the intermediate restriction of 3000 feet, it became obvious the auto pilot would not level off to make the restriction. The pilot flying deselected auto pilot, and manipulated the controls to make the 3000 foot restriction, it was during this level off the aircraft finished cleaning up. As the 3000 foot restriction way point passed, the thrust management computer failed to compensate for the level off and the airspeed accelerated to 275 kts indicated airspeed, though 250 kts was the selected airspeed. The pilot monitoring noticed the airspeed deviation and directed a correction. The pilot flying corrected the airspeed back to 250 kts and continued climbing without further incident. A complicating factor was the traffic in front of our aircraft by 5 miles created significant wake turbulence that we encountered at the 3000 foot level off. In the future, a better way of handling this would be for the pilot flying to manually reduce the throttles at level

off to slow the acceleration. Additionally, a lower airspeed than 250 kts could be selected such as 230 to give a greater margin.

Narrative: 2

We were assigned to ferrying an empty aircraft from LAX to ZZZ1 departing at night, in VMC, and calm winds. Our pre-brief covered many threats and contingencies for our flight including light aircraft gross weight and departure restrictions. We took off on Runway XXL and assigned the DOTTS2 departure with an altitude restriction of 3000 ft. or below at HIPPR and a 5000 ft. or below altitude at ADORE. I was Pilot Monitoring (PM) and the Pilot Flying (PF) elected to engage the autopilot at 200 ft. for a normal LNAV/VNAV departure. While retracting the flaps to up, I didn't believe VNAV was going to respect the altitude restriction of 3000 ft. I pointed it out to the PF at approximately 2700 ft. and he disengaged the autopilot and lowered the nose to level off. At that point we also entered moderate wake turbulence from a heavy that departed prior to our departure. During the wake turbulence and the level off, I thought we may have exceeded the airspeed limit for flaps 1. It was only after clearing the turbulence I noticed we were quickly accelerating and got up to approximately 275 knots on the departure. I pointed out the accelerating airspeed to the PF and he then stabilized the aircraft. The autopilot was then engaged and we continued climbing on the departure. ATC was notified of the moderate wake turbulence event and they tried to de-conflict us with a continued climb above the heavy in front of us. At cruise altitude, I queried Dispatch to ask Maintenance if any flap limits were exceeded. We were told no flap limits were exceeded. We briefed and planned for this departure, but I believe our execution was too slow. Passing 2000 ft. we should have been more aggressive in downgrading the automation and hand flying the aircraft. From my experience I have noted the autopilot cant keep up with the performance of the aircraft at light weights. The wake turbulence then just exacerbated this event.

Synopsis

B767-300 flight crew reported exceeding 250 kts below 10,000 ft when their unloaded aircraft accelerated more quickly than anticipated. A wake turbulence encounter was cited as contributing to the incident.

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : D01.TRACON

State Reference : CO

Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : IMC

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : D01

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : DEN

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : D01

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Climb

Airspace.Class B : DEN

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2070516

Human Factors : Situational Awareness

Human Factors : Distraction

Analyst Callback : Attempted

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

We were cleared to climb via the EEONS8 departure from Denver off of Runway 34L. On the taxi out I missed the VNAV not being selected for our departure. After takeoff we encountered wake turbulence from the preceding aircraft. I elected to offset the aircraft track to get out of the turbulence, this may have been an additive condition that took my attention away from monitoring the aircraft's vertical mode of automation. I returned to the proper course and engaged the autopilot. Upon crossing the HIDEF intersection departure informed us that we were supposed to be climbing via the departure and we did not comply with the 10,000 ft. hold down. Departure turned us to a 020 heading and told us to climb to 12,000 ft. We were then cleared to SHOBO and we proceeded with the flight without further incident. Suggestions: Verbal conformation of the VNAV by the Pilots on the Before Takeoff Checklist.

Synopsis

B737-700 Captain reported overshooting a climb restriction departing DEN, citing a wake turbulence encounter and improper autoflight programming as contributing.

Time / Day

Date : 202401

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : NCT.TRACON

State Reference : CA

Altitude.MSL.Single Value : 1100

Environment

Flight Conditions : VMC

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.UNICOM : MCC

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Initial Approach

Route In Use : None

Airspace.Class E : MCC

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : MCC

Make Model Name : DC-10 Undifferentiated or Other Model

Flight Phase : Initial Approach

Airspace.Class E : MCC

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Instructor

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Qualification.Maintenance : Powerplant

Qualification.Maintenance : Airframe

Qualification.Other

Experience.Flight Crew.Total : 7000

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 2069919
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew
Analyst Callback : Attempted

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
Miss Distance.Horizontal : 0
Miss Distance.Vertical : 500
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

A DC-10 Heavy was doing touch and go landings in the pattern at MCC. We used right downwind for Runway 16. Our Cessna 172 had just come from ATC Flight Following from the south. We called in to announce we were entering the 45 for a right downwind for Runway 16. We noticed an aircraft's landing light approaching Runway 16 so we informed them we were about to turn downwind. We asked the aircraft if they were making a full stop or a touch and go. There was no response. We tried several times to get the aircraft to respond but no response. We saw them climbing out and we asked them what was their intentions. Finally, we heard them say "call sign". We thought they must be a similar name light sport aircraft. They turned directly toward us at our altitude. If we had not taken evasive action they would have most likely hit us. They flew directly over us, missing us by possibly 500 feet. They finally announced they were a DC-10 Heavy. We had no idea they were a heavy DC-10 airliner. We informed them we had been caught by their wake turbulence twice in the pattern as they flew over us. They continued to make additional touch and goes as we left the traffic pattern to the north east. We only returned after they left the pattern.

Synopsis

Cessna 172 reported encountering wake turbulence from a DC-10 in the pattern at MCC.

Time / Day

Date : 202312
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZMA.ARTCC
State Reference : FL
Altitude.MSL.Single Value : 16000

Aircraft : 1

Reference : X
ATC / Advisory.Center : ZMA
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 170/175 ER/LR
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : MIA

Aircraft : 2

Reference : Y
ATC / Advisory.Center : ZMA
Aircraft Operator : Air Carrier
Make Model Name : B787 Dreamliner Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : MIA

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2069720
Analyst Callback : Attempted

Events

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

Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

We were en route to MIA from ZZZ direct to REPEE for BNFSH2 arrival at 16,000 feet. ATC instructs us to fly a heading of 330 to sequence us behind a heavy 787. ATC instructs us to follow traffic, direct ENRGY to resume the arrival and caution for wake turbulence. We slowed down to 270 kts and prepped the cabin for arrival, alerting the flight attendants to remain seated for possible turbulence from the heavy we were following. Very shortly after, we encountered the wake which caused the Flight Attendant (FA) to be sent off their feet and autopilot to be disconnected to veer away from the wake, deviating from assigned altitude by 600 feet above. Captain calls the FA to ask for their well being which they advised they were ok and briefed the passengers of the encounter we experienced. We asked for a vector to remain clear of the traffic and the flight resumed as normal. Captain advised to fill out report but no injuries were to come from this event.

Synopsis

EMB-175 First Officer reported encountering wake turbulence on descent into IAH in trail of a B787.

Time / Day

Date : 202312

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : L30.TRACON

State Reference : NV

Altitude.MSL.Single Value : 8000

Environment

Light : Dawn

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : L30

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use.SID : NIITZ THREE

Airspace.Class B : LAS

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : L30

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Climb

Airspace.Class B : LAS

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 160

Experience.Flight Crew.Type : 8500

ASRS Report Number.Accession Number : 2066868

Human Factors : Situational Awareness

Human Factors : Distraction
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 250
Experience.Flight Crew.Type : 563
ASRS Report Number.Accession Number : 2068238
Human Factors : Situational Awareness

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

Captain departed LAS on 26R behind other carrier. On the NIITZ3 Departure, Captain was hand flying the departure due to constant wake turbulence from proceeding aircraft. At RUUDY, the Captain finally was able to engage the autopilot. The Captain then noticed the aircraft was not turning and the First Officer noticed we were not on course. The Captain then proceeded to disengage the autopilot, hand fly the aircraft back on course and descend back down to 8,000 ft MSL. The altitude restriction at SELLZ was 8,000 ft MSL. The aircraft altitude was between 8,300-8,400 ft. The Captain then asked the First Office to cycle the flight director switches and the engage LNAV and VNAV. The Captain re-engaged the autopilot and the aircraft flew a normal departure. We were less than 1/2 mile off course. Suggestions: Before engaging autopilot, ensure you're in the correct navigation modes.

Narrative: 2

I was Pilot Monitoring on NIITZ3 Departure. We encountered significant wake turbulence from aircraft ahead on SID. After checking in with Departure Clearance. Right around RUDYY, we encountered significant wake turbulence. The Captain was hand flying. He

engaged the autopilot. Shortly after we both noticed, the aircraft did not commence the turn as anticipated and the aircraft proceeded off course. The Captain disengaged the autopilot and corrected for course and altitude to continue on SID as cleared. The Captain asked me to cycle the FD (Flight Director) switches and engage LNAV and VNAV and after he engaged the autopilot. We continued with a normal departure. Suggestion: Ensure proper NAV modes are selected before engaging autopilot.

Synopsis

Air carrier flight crew reported track and altitude deviations occurred on departure from LAS, citing distractions from wake turbulence as contributing.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : EWR.Airport

State Reference : NJ

Altitude.MSL.Single Value : 2500

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : B737 MAX 8

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : EWR

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

Airspace.Class B : EWR

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 195.5

Experience.Flight Crew.Type : 2778.20

ASRS Report Number.Accession Number : 2066281

Analyst Callback : Completed

Events

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

Assessments

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

Narrative: 1

We briefed both the CAT 1 and CAT 3 ILS approaches to EWR 22L with weather reported at 300 and 1. We decided to fly the CAT 3 with the fog and low ceilings. Upon clearance for the approach at 2,500 feet I engaged the second autopilot. All systems were operating normally. On a right dogleg to final we were about 3.5 miles in trail of another aircraft on the ILS to 22L. Winds were calm on the surface and virtually nonexistent at altitude. We were instructed to maintain 170 KIAS until BUZZD. At this time we slowed to 170 and had the flaps configured at 10 degrees with the landing gear still up. At our current weight this put us about 2-3 knots above the minimum flaps 10 speed. The rides were absolutely smooth. Shortly thereafter we experienced what we estimated to be wake turbulence from the preceding aircraft and the airplane rolled to the left at a moderate rate. Realizing it was not going to recover on its own I disconnected the autopilot and auto throttles and immediately received an aural and visual "Roll Authority" annunciation. Executing the upset procedure I advanced the throttles and rolled the aircraft right to level and it immediately recovered. At this point the FO (First Officer) and I had a brief discussion on whether to continue the approach or request a go-around. The speed had recovered to well above the flaps 10 speed (about 185 KIAS) and we were still about 3.5 miles in trail of the preceding aircraft, stable, and right on the localizer and in level flight approaching the glide slope. We both agreed that the weather was within CAT 1 standards and that we could continue the approach. We configured normally flew the CAT 1 ILS to an uneventful landing and taxied to the gate. Anecdotally none of the Flight Attendants or passengers commented on the minor upset. It was about as mild as an upset could be.

Callback: 1

Reporter said he is unsure of the aircraft type they were following.

Synopsis

B737 MAX 8 Captain reported encountering wake turbulence on approach to EWR.

Time / Day

Date : 202312
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SFO.Airport
State Reference : CA
Altitude.AGL.Single Value : 300

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : NCT
Aircraft Operator : Air Carrier
Make Model Name : B737 Next Generation Undifferentiated
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Approach
Airspace.Class B : SFO

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : NCT
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Initial Approach
Airspace.Class B : SFO

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 137.42
Experience.Flight Crew.Type : 181.75
ASRS Report Number.Accession Number : 2065393
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2065294

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Ground Conflict, Less Severe
Anomaly.Deviation - Speed : All Types
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance

Assessments

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

Narrative: 1

SFO was down to single runway for arrivals today. They were essentially vectoring holding and then putting aircraft in line for approach. Our initial vectors to final were close enough to the aircraft in front of us that we inadvertently flew through wake turbulence, increasing our pitch and dropping our airspeed by 10-15 knots rapidly. Airspeed loss was not outside range of current configuration, but slower than ATC directed. This occurred at 8 mile final. I disengaged autopilot and hand flew approach from approximately 3000 AGL. Soon after, Tower directed us to slow to slowest practical and maintain. We slowed from originally directed 180 to 154. At 5 mile final we were cleared to land. At approximately 3.5 mile final for 28R SFO, Tower cleared an aircraft for takeoff on 1R. We were in VMC conditions so we continued the approach looking for line of sight and impending rotation of departing aircraft. At approximately 400 ft AGL my First Officer saw beginning of crossing runway takeoff aircraft rotation. Just before the PM approaching minimums call, we heard our call sign go-around from Tower. We executed go-around per FM and were given subsequent radar vectors for same runway, landing uneventfully.

Narrative: 2

ATC directed go around at 500 AGL on visual approach to Runway 36R. We were vectored back for another visual approach on Runway 36R. We landed the flight safely without further incident.

Synopsis

B737NG flight crew reported executing a go-around from a low altitude after spacing issues became apparent. Earlier in the flight they encountered wake turbulence that resulted in airspeed loss of 10-15 knots.

Time / Day

Date : 202312
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : CLT.Airport
State Reference : NC
Altitude.MSL.Single Value : 100

Aircraft : 1

Reference : X
ATC / Advisory.Tower : CLT
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 145 ER/LR
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Final Approach
Airspace.Class B : CLT

Aircraft : 2

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

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2065292
Analyst Callback : Attempted

Events

Anomaly.Ground Event / Encounter : Jet Blast
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

Needed to go-around at 100 ft. while trying to land on Runway 36R at CLT due to strong wake from departing aircraft Airbus A321. Air traffic controllers keep tight spacing. We were 3 miles final on approach and ATC cleared [the A321] for takeoff on same runway. Strong wake made it unstable at last moment so we conducted go around, came back and landed on same runway.

Synopsis

EMB-145 First Officer reported executing a go-around from low altitude at CLT after encountering wake from an A321 departing on the same runway.

Time / Day

Date : 202312

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : SDF.Airport

State Reference : KY

Environment

Flight Conditions : VMC

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SDF

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

Route In Use : Vectors

Airspace.Class C : SDF

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : SDF

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class C : SDF

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2065284

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC
Analyst Callback : Completed

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
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

Assessments

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

Narrative: 1

While on approach in to SDF we were brought in on a downwind for Runway 35L. We were still at 250 kt. and asked if the Approach Controller still wanted us at 250. He said to expect slower in base. The controller eventually gave us a vector of 080. We read it back but then realized that that vector was right at inbound traffic so we confirmed the heading with the controller again. He repeated it and told us to turn right away. We complied. He then re-vectored us to 010 to join the localizer. We continued inbound for some time. The controller still never slowed us so at a 15-mile final we told him we were unable 250 kt. We had decided we could no longer keep 250 kt. at a 15-mile final and safely meet out stabilized approach criteria. The controller angrily replied turn left to a heading, breaking us off the approach, which also turned us directly into wake turbulence from the heavy jet in front of us. While we were encountering wake turbulence the controller came on the radio and told us we had a possible pilot deviation and to copy a phone number. We complied. We then got resequenced around for the approach and at 15-mile final we had been given 170 kt. until final approach fix, 80 kt. slower than the previous approach. We landed normally and taxied to the gate. We called the Supervisor once we were at the hotel. The Supervisor was very apologetic and informed us there was no evidence of a pilot deviation.

Callback: 1

Reporter stated better ATC handling could have minimized this encounter.

Synopsis

ERJ175 First Officer reported encountering wake turbulence from the preceding heavy jet after ATC had not given a clearance to slow down for the approach.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZMA.ARTCC

State Reference : FL

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZMA

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZMA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZMA

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZMA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 3500

ASRS Report Number.Accession Number : 2065234

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
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

Assessments

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

Narrative: 1

While we were enroute to MIA Airport, ATC advised us of a heavy traffic, 787, that we will follow to our destination. At that time we slowed down to 270 kt. and began to call the Flight Attendant to prepare for landing and advised them of possible wake turbulence due to heavy traffic, so they will finish their duties and stay seated the entire time. When we encountered the wake of the traffic, [it] caused both FAs (Flight Attendant) to be sent off their feet and caused the autopilot to disconnect and climb 600 ft. above our assigned altitude. When we recovered the aircraft and the altitude, I called the FAs to know about their health and they replied they were OK. Cause: We were provided with a short trail in space behind a heavy aircraft and were not provided with sufficient time to slow down to a safe distance taking into account the winds. Solution: Ask for the time of aircraft following sooner and if required, request different altitude or short vector in the arrival due to heavy wake turbulence.

Synopsis

EMB-175 Captain reported encountering wake turbulence enroute to MIA in trail of a B787.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : DEN.Tower

State Reference : CO

Relative Position.Angle.Radial : 083

Relative Position.Distance.Nautical Miles : 4

Altitude.MSL.Single Value : 12000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 8000

Aircraft : 1

Reference : X

ATC / Advisory.Tower : DEN

Aircraft Operator : Corporate

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use.SID : EPKEE7

Airspace.Class B : DEN

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : DEN

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : DEN

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 5200
Experience.Flight Crew.Last 90 Days : 140
Experience.Flight Crew.Type : 1500
ASRS Report Number.Accession Number : 2063593
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC
Analyst Callback : Attempted

Person : 2

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 : Flight Instructor
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 38400
Experience.Flight Crew.Last 90 Days : 55
Experience.Flight Crew.Type : 54
ASRS Report Number.Accession Number : 2061474
Human Factors : Situational Awareness
Human Factors : Distraction
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew

Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met
Anomaly.Deviation - Altitude : Overshoot
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Takeoff from Runway 8 at DEN. Takeoff clearance was granted before previous aircraft (B737) had rotated from the runway. I knew we might have issues with wake turbulence since the takeoff was close in sequence. We briefed and prepared the aircraft for the departure, with a level off at 11,000 MSL. The Garmin 5000 suite will not allow VNAV to be set on the ground, so we had to wait until airborne to engage that feature for automatic level offs on Autopilot, which was planned and briefed. After rotation and the "flaps up" call at 400 ft. AGL, we encountered a strong left rolling tendency, and I pulled back on the yoke to achieve a higher climb gradient than the preceding aircraft, to climb above his wake turbulence. The pilot monitoring reviewed FlightAware data and stated we were between 5,000-6,000 ft. per minute of climb during my maneuver to escape the wake turbulence. Initiating the maneuver at approximately 6,000 MSL, and executing the maneuver for nearly 60 seconds before we were out of the wake turbulence, I began to relax back pressure and check my altitude for the level off. We had just been switched from Tower to Departure Control, and I was climbing quickly between 11,500 MSL and finally leveled off just above 12,000 MSL and began a descent back to 11,000 MSL when the Controller said, "I thought you were climbing via..." Our response was that we had planned that, but missed the first level off. We did not, but should have, relayed the wake turbulence escape maneuver that we had to execute. Departure then gave us a "climb and maintain" instruction, removing SID climb/level off requirements, and we executed the rest of the mission without further incident. Upon reflection, as the PIC (pilot in command) and pilot flying, I should have radioed Tower and Departure that I was climbing unrestricted to escape the wake turbulence of the preceding aircraft. I believe they would have quickly given us a vector away from the path of that aircraft, and an unrestricted climb to address the problem. In the future, that is what I will do. The level off restrictions are on the departure for safety reasons, and I understand that. When, as PIC, I deem departure from stated restrictions is necessary, I should let ATC know what I am doing to maintain the safety of my aircraft and passengers, I should only depart to the extent required to assure safety, and then return to within stated restrictions as soon as practicable. I failed to communicate effectively in this situation.

Narrative: 2

I was pilot monitoring on the incident flight. Our clearance was to climb via the EPKEE7 SID. The initial altitude restriction is 10,000 ft. (or 4,566 ft. above the airport) until the KIDNG waypoint. We programmed the SID into the FMS, verified all of the altitude restrictions, and briefed to engage the Autopilot at 400 ft. AGL to have the autopilot accelerate to a pre programmed climb speed of 220 KIAS and climb in the VNAV vertical mode to insure compliance with the altitude restrictions. After lift-off we encountered wake turbulence from the preceding departing aircraft (either a Boeing 737 or Airbus A 320 family). Instead of accelerating to climb speed at 400 ft. and engaging the Autopilot, the pilot flying pitched up to achieve a maximum climb gradient to climb above the wake turbulence. I was unaware that the Autopilot was not engaged, and was pre-occupied with the frequency change to departure control. I failed to alert the pilot flying to the imminent level off. When I checked in with Denver Departure Control I looked at the altimeter and realized that we were already climbing through 11,500 ft. When I checked in with Denver Departure they responded to to the effect of "I thought you were going to climb via the SID" to which I sheepishly replied: "Yeah, I thought so too, but that didn't happen". I did not report the wake turbulence encounter. We were not advised of a pilot deviation by Denver Departure or given a phone number to contact. The aircraft was at a low take-off weight and the temperature was cold, resulting in high climb performance. I reviewed the departure flight path on Flightaware and it appears that we were climbing through 11,000 ft. within 1 minute after lift-off, or a rate of climb of approximately 5,500 fpm. We apparently passed through the 10,000 ft. altitude restriction about 50 seconds after lift-off. A contributing factor was my limited experience as pilot monitoring in jets. I just

transitioned into jets after XX years and many hours of flight instructing in a low performance piston twin. I initially flew about XX flights as pilot monitoring in the right seat, followed by a BE-400 PIC type rating course which I passed about XX weeks before the incident flight. Most of my subsequent flights were as pilot flying in the left seat to obtain the required XX hours of supervised operational experience to remove the restriction from my type rating. On the incident flight we had nervous passengers and also expected some clear air turbulence on departure. Therefore my instructor Captain suggested that I fly right seat as pilot monitoring, and he'd be pilot flying to give the passengers the smoothest ride possible. By this time mind had become accustomed to pilot flying duties and I was not mentally prepared for the required pilot monitoring call outs.

Synopsis

BE400 flight crew reported climbing through an altitude restriction departing DEN because they were responding to a wake turbulence encounter from the preceding B737.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : JRF.Airport

State Reference : HI

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : JRF

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class D : JRF

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : JRF

Aircraft Operator : Military

Make Model Name : Hercules (C-130)/L100/382

Crew Size.Number Of Crew : 5

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Final Approach

Airspace.Class D : JRF

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 540

Experience.Flight Crew.Last 90 Days : 83

Experience.Flight Crew.Type : 462

ASRS Report Number.Accession Number : 2062381
Human Factors : Situational Awareness
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Instructor
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Commercial
Experience.Flight Crew.Total : 993
Experience.Flight Crew.Last 90 Days : 295
Experience.Flight Crew.Type : 875
ASRS Report Number.Accession Number : 2062672
Human Factors : Situational Awareness

Events

Anomaly.Ground Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Maintenance Action
Result.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

During a time-building flight, another pilot and I had taken a plane out around the island. During this time we decided to stay proficient in our landings and headed towards JRF for some landings. At JRF there were multiple C-130s and KC-135s performing landings on 4R. The winds were at 110 degrees 11 gusting 17 kt. After 2 successful touch-and-go's, it was decided to practice power-off 180s. On about a 0.3-mile final from 4L, our airspeed was around 60 kt. The other pilot decided to lower the nose of the aircraft to gain some airspeed and enter ground effect. About 1 second after pushing the nose over, our plane experienced an unusual rate of descent caused by the wake turbulence blown over from the much heavier plane on the right of us. At the last second, I pulled back on the controls in an attempt to flare the aircraft. The aircraft then hit the ground, bounced and we initiated a go-around. In the air, we inspected our landing gear from the firm landing and it visually looked like there were no issues. We decided that we were going to do another touch-and-go to make sure the landing gear was okay. Upon landing, the front nose and left main tire burst and we came to a complete stop on the runway. No one was injured during this landing. I immediately cut the plane's electrical and fuel and notified ATC. To

prevent a recurrence, pilots should make sound judgments and initiate a go-around, or wait for wake turbulence to subside when much larger aircraft are operating at a parallel runway and the winds are blowing the wake into the runway. Attaining a stabilized approach would also prevent this from happening in the future.

Narrative: 2

A pilot friend and I took a time-building flight around the island of Oahu. We are both certified flight instructors and we decided to fly and practice our skills. We first flew around the island and then decided to go to JRF for pattern work. When we were entering the pattern, we were assigned 4L. The winds were at 110 and there was a heavy military aircraft, a KC-130 also doing work in the pattern on 4R. After a couple normal, successful touch-n-go's, we decided to practice power-off 180s next. I was at the controls for the first power-off 180. We were cleared for 4L. As I was on final, I decided that we were slow, so I lowered the nose, planning to build airspeed, enter ground effect, and touch down. As I lowered the nose, the plane felt as if it was plummeting to the ground in a very rapid sink due to the wake turbulence from the heavy aircraft on 4R. My friend came on the controls and pulled back on the yoke in an attempt to save the aircraft and go around, but the plane had already touched down hard. On the go-around, we inspected the left and right main gear from our seat and it seemed to be fine. We planned to touch down and make sure the aircraft was alright on our next pattern. When we touched down, the left main and the nose wheel tires popped, and the aircraft slid to the left side of the runway. We immediately shut down the aircraft and advised Tower that our Maintenance would be on the way. To prevent a recurrence, pilots should be well educated on the effects of wake turbulence and crosswinds, and both combined. We should be able to assess when and how to initiate go-arounds, and know that wake turbulence can be avoided all around by waiting.

Synopsis

Cessna 172 flight crew reported encountering wake turbulence while on short final from a heavy aircraft on a parallel approach and performed a go-around after bouncing on the runway. Upon touchdown, the nose and left main tire burst and the aircraft came to a stop on the runway. There were no injuries.

Time / Day

Date : 202312

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : CVG.Airport

State Reference : KY

Altitude.MSL.Single Value : 7000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CVG

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : CVG

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CVG

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class B : CVG

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 164.35

Experience.Flight Crew.Type : 2697.08

ASRS Report Number.Accession Number : 2060916

Human Factors : Situational Awareness

Human Factors : Distraction

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 69.2
Experience.Flight Crew.Type : 320.27
ASRS Report Number.Accession Number : 2060921

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : FAR
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
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
Contributing Factors / Situations : Procedure
Primary Problem : Human Factors

Narrative: 1

As we were about to pass 10,000 ft. We had a wake turbulence encounter that was substantial enough to distract me from my altitude awareness and speed at the time. I was focused on the aircraft I was following and discussed the issue with the First Officer and missed that I was well over 250 kts in level change. Once I noticed I took immediate action to correct the speed. No contact from ATC regarding the issue.

Narrative: 2

During descent into CVG, airspeed exceeded 250 below 10,000. Aircrew recognized and corrected crossing BAMGE fix at 7,000.

Synopsis

B737NG flight crew reported airspeed over 250 kts below 10,000 ft. in descent to CVG after they were distracted by a wake turbulence encounter.

Time / Day

Date : 202312

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : PHL.Airport

State Reference : PA

Aircraft : 1

Reference : X

ATC / Advisory.Tower : PHL

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 : Final Approach

Airspace.Class B : PHL

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : PHL

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

Flight Phase : Landing

Airspace.Class B : PHL

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2059755

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Fuel Issue

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

Experienced wake turbulence below 100 feet the plane rolled left and then hard to the right. Don't sink was audible and we initiated a go around. This also caused us to declare min fuel. Spacing was too close on final.

Synopsis

EMB-145 First Officer reported executing a go-around after encountering wake turbulence on short final at PHL.

Time / Day

Date : 202312

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : CLT.Airport

State Reference : NC

Altitude.AGL.Single Value : 100

Aircraft : 1

Reference : X

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Flight Phase : Landing

Airspace.Class B : CLT

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2059707

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

On short approach to Runway 18R, I was the Pilot Flying. I'm unsure of the exact altitude and parameters of the event due to most of my attention outside, but sometime below 100 ft. AGL we encountered wake turbulence from the previous arrival aircraft. The wake was strong enough to cause a left rolling motion that was not effectively countered by near full right side stick input. At this moment, I did not feel like I had adequate roll control to continue the approach and was slightly out of a normal position to land so we immediately executed a go-around. The go-around was normal. The subsequent approach we also encountered some wake turbulence, but much less intense and a normal landing was made. I believe in both approaches we followed another A321 at around 3 to 3.5 miles. The weather conditions at the time seemed perfect for a wake encounter. A very light quartering tailwind was indicated on our ND around 300 ft. AGL. Optimal conditions for a wake turbulence encounter existed at the time. Very light or calm winds near the surface and just above the surface a light tailwind. I believe our response to the wake encounter was correct and well managed. Preventing the encounter all together would be ideal. I know many smart minds have studied wake and recommended spacing requirements from that data. Possibly some consideration to current weather conditions could make wake separation standards more dynamic.

Callback: 1

Reporter stated he believes it should be possible to improve the procedure for anticipating wake encounters to help prevent similar incidents.

Synopsis

A321 Captain reported executing a go-around after encountering wake turbulence on short final at CLT.

Time / Day

Date : 202311

Place

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

Environment

Flight Conditions : Mixed

Aircraft : 1

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

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : ZZZ
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Climb
Airspace.Class B : ZZZ

Component

Aircraft Component : Elevator ControlSystem
Aircraft Reference : X
Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2057063
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 83
Experience.Flight Crew.Type : 13200
ASRS Report Number.Accession Number : 2057067

Events

Anomaly.Aircraft Equipment Problem : Critical
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Diverted
Result.Flight Crew : Landed As Precaution
Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

I was the Pilot Flying (PF) during the departure out of ZZZ. I noted that the pitch control characteristics seemed abnormally stiff, despite being an older 700. ATC began vectoring us off the SID and giving us step climbs, so I elected to engage the autopilot to focus on the clearances and to monitor how the autopilot handled. Things seemed okay until shortly thereafter in the climb we encountered wake turbulence from an (other carrier aircraft). The autopilot was reacting slowly to lower the nose. I disengaged the autopilot to help fly it out of the wake and roll the wings level. Despite our higher speed, the pitch control seemed tighter than I would have expected as I flew us out of the wake. I commented this to the Captain at this point. With the autopilot re-engaged, we continued our climb and ATC then gave us normal speed. The autopilot had a hard time matching pitch to speed and began oscillating pitch attitudes, and then started to descend. I intervened. I then informed the Captain of how "heavy" the nose feels, and we elected to level off and evaluate. We considered the problem and if there was an appropriate QRH procedure. With each of those events, it was notable that the pitch controls felt different and very firm. Flying an approach in ZZZ1 with gusting winds was not an added risk factor we wanted to accept with an aircraft that needed this much extra pressure to make attitude changes. Additionally, we could not anticipate with certainty, what the autopilot would do or if the condition would not deteriorate further. We both agreed that what we were experiencing was something we were no longer comfortable continuing the flight with. We considered many options, ZZZ2 was nearby and had steady headwinds favoring the long Runway XX. We informed the Cabin Crew. The Captain became the PF. I notified ATC of our plan to initiate a slow descent to divert to ZZZ2. Advised ATC due to our flight control

issue/concern and as an added Safety measure upon landing. While the Captain was flying, he confirmed how very stiff the pitch control axis was. We landed uneventfully.

Narrative: 2

The FO was flying the aircraft. During departure, he noticed the aircraft pitch axis seemed to be stiffer than normal. After engaging the autopilot, the autopilot did not do a good job of maintaining the pitch attitude. We encountered another aircraft wake, and after disengaging the autopilot, he noticed again the pitch axis was very stiff. He reengaged the autopilot, and the autopilot had a tough time changing speed while maintaining a consistent pitch attitude. When we finally leveled off, the First Officer (FO) expressed his concerns to me, and we began to discuss what to do about it. After discussing the problem, and some proposed solutions, we also reviewed the QRH even though there was no procedure for what we were experiencing. We finally decided since we didn't know exactly what was wrong, we could not predict whether or not it would get worse over time and based on that we decided to divert to ZZZ2 and advised ATC. We decided that I would fly the aircraft and the FO would be the Pilot Monitoring. We were very busy, and while I was flying the aircraft, I confirmed the pitch axis was very stiff. We planned for a long final, and slowed down slowly and early taking note of the changes in attitude. We landed uneventfully, and then taxied to the gate.

Synopsis

B737-700 flight crew reported abnormal flight control response in pitch during departure phase. They elected to divert to a nearby suitable airport.

Time / Day

Date : 202311

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : SFO.Airport

State Reference : CA

Altitude.AGL.Single Value : 200

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : SFO

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 : Final Approach

Airspace.Class B : SFO

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : SFO

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

Airspace.Class B : SFO

Component

Aircraft Component : Fuel Distribution System

Aircraft Reference : X

Problem : Malfunctioning

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 120.28
Experience.Flight Crew.Type : 285.98
ASRS Report Number.Accession Number : 2056679

Events

Anomaly.Aircraft Equipment Problem : Less Severe
Anomaly.ATC Issue : All Types
Anomaly.Inflight Event / Encounter : Fuel Issue
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

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

Narrative: 1

At SFO, due to bad vectoring and wake turbulence from a Boeing 777, we had to perform a go-around on Runway 28L. When we went around, the fuel was 5.8 - it should have been 6.3, but due to winds and vectoring and altitude restrictions, it was 5.8. Upon performing the go-around, we got the FUEL L WING TK LO LVL ECAM. I followed the checklist for that ECAM. I also noticed that the left wing tank was significantly lower than the right, around 1500. Then we got the FUEL L TK PUMP 1+2 LO PR ECAM, which I also followed the checklist for. We landed without any problems with about 4.0 on the fuel level. After parking, I called Dispatch and Maintenance Control and they said the fuel shouldn't have been that imbalanced and Maintenance Control instructed me to make a maintenance log book entry, so I did. He said there were no other issues though, and that I did everything correctly and Dispatch agreed.

Synopsis

A320 Captain reported executing a go-around after encountering wake turbulence on final approach from a preceding B777. During the go-around the flight crew experienced fuel imbalance anomalies.

Time / Day

Date : 202311

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Flight Phase : Climb

Airspace.Class B : ORD

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ORD

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Climb

Airspace.Class B : ORD

Component

Aircraft Component : Rudder Trim System

Aircraft Reference : X

Problem : Malfunctioning

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

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

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Instrument
ASRS Report Number.Accession Number : 2055350

Events

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

Assessments

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

Narrative: 1

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

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

Narrative: 2

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

Synopsis

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

Time / Day

Date : 202311

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : A80.TRACON

State Reference : GA

Altitude.MSL.Single Value : 2700

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : A80

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : ATL

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : A80

Aircraft Operator : Air Carrier

Make Model Name : Widebody, Low Wing, 2 Turbojet Eng

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : ATL

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Type : 2200

ASRS Report Number.Accession Number : 2054209

Human Factors : Situational Awareness

Human Factors : Confusion

Analyst Callback : Attempted

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Ground Event / Encounter : Ground Equipment Issue
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Returned To Clearance
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

During an approach to Runway 9R at ATL, the localizer signal was lost causing the FMS to display errors flight director and to revert to pitch and roll mode while the autopilot was engaged. After confirming that the FO's FD and localizer was experiencing the same malfunction, I disconnected autopilot, directed the FO to re-sequence the localizer frequency and then joined the localizer final approach course before engaging the autopilot. As we had been directed to slow to 170 knots to provide additional separation from a heavy Aircraft Y ahead of us which had already resulted in a hard wake turbulence impact already while on the arrival, my focus was on ensuring we did not cross through the final approach course and also ensure the aircraft was properly configured with flaps. During the confusion with the loss of localizer signal and the flight director, the aircraft descended from 3000 feet to 2700 feet before it was corrected, the aircraft was climbed back to 3,000 feet and the approach was continued without incident. Cause: The malfunction occurred when the aircraft was in green needles and heading mode with NAV armed after ATC directed us to join the localizer. The first indication of the malfunction was a red FD (Flight Data) symbol on the PFD (Primary Flight Display), a red LOC indication in place of the green localizer frequency followed by slight roll oscillations as the FMS reverted to PTCH/ROLL mode. I checked the FO side to see if the problem was on both sides and he had the same indications that I had. Given that the aircraft was not in APPR mode, the FMS were synced and not independent as they would be in APPR mode. As the aircraft was on a 30 degree intercept and well inside the furthest on course fix, range or azimuth did not appear to be an issue. After disconnecting autopilot, joining manually and re-sequencing the frequency, we reengaged autopilot and armed approach and there was no further issue. Suggestions: Attempting to recreate the scenario in the simulator may be helpful in understanding what happened so as to better train crews in the event of a future occurrence.

Synopsis

CRJ-700 Captain reported an altitude deviation occurred on approach to ATL following a loss of the localizer signal and a wake turbulence encounter.

Time / Day

Date : 202311

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.AGL.Single Value : 600

Environment

Flight Conditions : IMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAX

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Flight Phase : Initial Climb

Airspace.Class B : LAX

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : LAX

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2052120

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

On departure behind an A320 we encountered moderate wake turbulence, causing rolls right and left of about 25 degrees. This lasted for about 10 - 15 seconds. ATC cleared us for takeoff as the A320 was rotating.

Synopsis

B737 Captain reported encountering wake turbulence departing LAX in trail of an A320.

Time / Day

Date : 202311
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : IAD.Airport
State Reference : DC

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : PCT
Aircraft Operator : Fractional
Make Model Name : Citation Longitude (C700)
Crew Size.Number Of Crew : 2
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Descent
Airspace.Class B : IAD

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : PCT
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Descent
Airspace.Class B : IAD

Person

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 : 2050992
Human Factors : Situational Awareness
Analyst Callback : Attempted

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight

Result.Flight Crew : Returned To Clearance

Result.Flight Crew : Became Reoriented

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Human Factors

Narrative: 1

During arrival we encountered wake turbulence from proceeding aircraft. The turbulence lasted just a few seconds. During that time the flying pilot pushed the heading bug and started slowing the aircraft. I didn't see the heading selection and before either of us realized it Approach asked us if we were going to make the turn that we were going through and gave us a heading to rejoin the arrival. We didn't deviate far or come close to any other aircraft. Nothing more was said to us from ATC.

Synopsis

CE-700 Captain reported a track deviation occurred when they mismanaged autoflight systems following a momentary wake turbulence encounter descending into IAD.

Time / Day

Date : 202311

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.MSL.Single Value : 3000

Environment

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : LAX

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : B757 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : LAX

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Last 90 Days : 130

ASRS Report Number.Accession Number : 2050829

Human Factors : Situational Awareness

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Crew
Analyst Callback : Attempted

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Clearance
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

Assessments

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

Narrative: 1

We were on visual approach to Runway 25L with a landing clearance. There was a 757 in front of us that was causing some wake turbulence. The Captain, pilot flying, decided to slow from the assigned speed of 170 to 150 in order to increase separation. We had about a 3-mile spacing and the 757 was slowing early it appeared. Shortly thereafter, ATC asked if we were doing 170 and we responded "affirmative." When they asked again, the Captain jumped on and said he was doing 150 for wake spacing. ATC implied that we had more than enough, and we landed without incident. Pilot flying slowed 20 kt. below assigned speed to avoid wake turbulence without clearance to do so. We should have asked for slower instead of just doing it. Better crew communication. We could have also gone around and tried again with a better buffer.

Synopsis

B737-700 First Officer reported slowing below assigned speed without clearance to avoid wake turbulence while on descent into LAX following a preceding B757.

Time / Day

Date : 202310

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZDV.ARTCC

State Reference : CO

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZDV

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

Airspace.Class A : ZDV

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZDV

Aircraft Operator : Air Carrier

Make Model Name : B767 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Cruise

Airspace.Class A : ZDV

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2049168

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments

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

Narrative: 1

While at cruise in clear and smooth air at FL340 near MTJ VOR we encountered a severe jolt lasting approximately 2 seconds. We advised ATC of the turbulence and they told us a B-767 had recently crossed our flight path at FL350. There were no reports of injuries to passengers or crew members. There were no aircraft anomalies. We advised Dispatch of the encounter and made a log book entry. Cause: We were never advised of any crossing traffic along the route. Suggestion: Not much anyone could have done. Maybe a course change to avoid potential wake turbulence.

Callback: 1

Reporter stated the ride was completely smooth prior to the encounter.

Synopsis

A321 Captain reported encountering wake turbulence at FL340 from a crossing B767.

Time / Day

Date : 202310
Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : CLT.Airport
State Reference : NC

Aircraft : 1

Reference : X
ATC / Advisory.Tower : CLT
Aircraft Operator : Air Carrier
Make Model Name : EMB ERJ 145 ER/LR
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Airspace.Class B : CLT

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : CLT
Aircraft Operator : Air Carrier
Make Model Name : Airbus Industrie Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Initial Climb
Airspace.Class B : CLT

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2048258
Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

Right after takeoff on Runway 18C behind an Airbus. Around 2,000 feet, we encounter a strong violent wake turbulence, PLI (Pitch Limit Indicator) was displayed. I took aircraft/controls from the First Officer momentarily to bring the plane back to a desired position. After I brought back the plane to a desired situation and every things was under control and safe, then I transferred controls/ aircraft back to the First Officer.

Synopsis

EMB-145 Captain reported encountering violent wake turbulence shortly after takeoff from CLT.

Time / Day

Date : 202310

Place

Altitude.MSL.Single Value : 31000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

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

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 7806

Experience.Flight Crew.Last 90 Days : 170

Experience.Flight Crew.Type : 6637

ASRS Report Number.Accession Number : 2046300

Analyst Callback : Attempted

Events

Anomaly.Conflict : Airborne Conflict

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 : 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

During descent ATC amended our altitude from FL240 to FL310 for traffic. 100 ft. above FL310 and still descending we encountered moderate wake turbulence and the aircraft climbed to 31,200 ft. briefly and then descended to FL310. During the wake turbulence, we received a TCAS TA advisory for traffic. ATC asked us to confirm level at FL310 and the FO (First Officer) responded that due to turbulence the aircraft had climbed slightly, but we were maintaining FL310. The autopilot was on throughout the event due to the very brief nature of the moderate wake turbulence. Our altitude never exceeded more than 200 ft. above FL310.

Synopsis

A319 Captain reported encountering wake turbulence while descending that resulted in a slight altitude deviation that did not exceed more than 200 ft. above cleared altitude.

Time / Day

Date : 202310

Place

Locale Reference.ATC Facility : ZOB.ARTCC
State Reference : OH
Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X
ATC / Advisory.Center : ZOB
Aircraft Operator : Air Carrier
Make Model Name : B757 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Cruise
Airspace.Class A : ZOB

Aircraft : 2

Reference : Y
ATC / Advisory.Center : ZOB
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
Flight Phase : Cruise
Airspace.Class A : ZOB

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 99
Experience.Flight Crew.Type : 99
ASRS Report Number.Accession Number : 2045619

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 : Returned To Clearance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

We were enroute just prior to HAGUD intersection at FL340. It was reported smooth at FL360 and our flight plan had us at FL360 so we requested a climb to that flight level. We leveled off and it was smooth. There was a B737 about 15-20 miles in front of us at our altitude and out of nowhere we hit wake turbulence. Aircraft banked approximately 20 degrees and we lost about 300 ft. in total. I immediately turned the seat belt sign on and told the flight attendants to be seated immediately. I disconnected the autopilot and we requested a descent back down to FL340. We hit one more wake turbulence descending through approximately FL355. The rest of the flight was smooth. I called the flight attendants back and they said everyone was fine.

Synopsis

Air Carrier B757 Captain reported encountering wake turbulence at FL360 from a preceding B737.

Time / Day

Date : 202310

Place

Altitude.MSL.Single Value : 31000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Aircraft : 2

Reference : Y

Make Model Name : Commercial Fixed Wing

Flight Plan : IFR

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 49

Experience.Flight Crew.Type : 49

ASRS Report Number.Accession Number : 2045480

Analyst Callback : Attempted

Events

Anomaly.Conflict : Airborne Conflict

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Air Traffic Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

Aircraft was in a descent to level at FL310 per ATC for traffic. AP (Autopilot) on and FO (First Officer)/PF (Pilot Flying). Shortly after leveling at FL310, aircraft encountered CAT associated with possible wake turbulence. Altitude increased to approx 31,150 - 31,200 ft. CA (Captain) went off comm to check in with FA (Flight Attendant). ATC asked if aircraft was level at FL310. FO responded we were leveling at FL310 and had experienced turbulence. We had a TA for crossing traffic 800 ft. altitude difference. FO descended to FL310 immediately and then ATC instructed to continue descent which we complied. TA cleared and no RA occurred, loss of separation or other follow up from ATC. CA and FO both decided to fill out safety report because TA was triggered and we were queried about our altitude, and because turbulence caused a brief departure from assigned instruction.

Synopsis

A319 First Officer reported an altitude excursion occurred following a clear air turbulence event that may have been a wake vortex encounter.

Time / Day

Date : 202310
Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : JFK.Airport
State Reference : NY
Altitude.MSL.Single Value : 4000

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : N90
Aircraft Operator : Air Carrier
Make Model Name : Regional Jet 900 (CRJ900)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : JFK

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : N90
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : JFK

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Type : 214
ASRS Report Number.Accession Number : 2042958
Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Type : 55
ASRS Report Number.Accession Number : 2043271

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Physical Injury / Incapacitation

Assessments

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

Narrative: 1

While being vectored for approach into JFK, we encountered significant wake turbulence. We were behind a B777. We were descending from 4000 to 2000 ft. and slowing from 210 to 180 KIAS as per ATC instructions. I don't remember being told "caution wake turbulence" by Approach. The event lasted a few seconds and the autopilot did not disconnect. I don't remember the exact parameters of pitch/bank/etc as it was very quick. I didn't tell ATC as right after the event we were cleared for the approach, so I just wanted to get on the ground as quickly and safely as possible. Every indication looked normal and we landed without further incident. After getting to the gate, I called Maintenance Control and wrote it up to be inspected since it was probably one of the more severe ones I had experienced. I also spoke to the Duty Pilot and debriefed with him. The front Flight Attendant advised me she hit her head against the galley wall while strapped in the jumpseat. I asked her if she was okay to continue multiple times and she said she was. After a plane swap, we flew the next flight back to ZZZ without incident. We were vectored too close to the heavy aircraft in front of us. [I suggest to] maintain more spacing with a heavy jet, whether through ATC directed spacing or us asking ATC for more spacing if we hear a heavy aircraft on frequency that we are following.

Callback: 1

Reporter stated the wake encounter was quite significant.

Narrative: 2

Encountered wake from landing B777 on base to final turn into JFK. Approach did not warn of any wake turbulence, Tower did advise but it was after the event. Turbulence short but very abrupt. Not enough wake separation from NY approach for preceding B777.

Synopsis

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

Time / Day

Date : 202309

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : PHX.Airport

State Reference : AZ

Altitude.MSL.Single Value : 29000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZLA

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 Climb

Flight Phase : Climb

Airspace.Class A : ZLA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Climb

Airspace.Class A : ZLA

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2033373

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2034520

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Procedure
Primary Problem : Procedure

Narrative: 1

When preparing for take off on Runway 07R in PHX, we were holding short of Runway 7R we were asked to line up and wait and verify we have the departing traffic in sight. We obviously could see the aircraft departing as it was right in front of us. We informed ATC that we had the aircraft in sight. I've been asked to do this with every takeoff out of PHX. We believe this is so they can launch aircraft quicker and relieving them of any separation responsibilities. When you don't respond the way they ask you to you get penalized (they will allow other aircraft to takeoff before you). Nineteen minutes after takeoff we encountered turbulence due to the preceding aircraft in front of us which rolled the aircraft to around 30 degrees. There weren't any injuries and the flight was completed successfully but I do believe this is due to the small amount of separation during takeoff. The wake turbulence event happened at FL290. Have more of a delay before launching aircraft so we can avoid wake turbulence.

Callback: 1

Reporter reiterated that the unique procedures employed by PHX Tower may have contributed to the event.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

EMB-170 flight crew reported encountering wake turbulence climbing out of FL290 departing PHX. Reporter stated he believes PHX Tower procedures contributed to the encounter.

Time / Day

Date : 202308

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : PCT.TRACON

State Reference : VA

Altitude.MSL.Single Value : 17000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : PCT

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : IAD

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : PCT

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : IAD

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2031019

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC
Analyst Callback : Completed

Events

Anomaly.ATC Issue : All Types
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

While en route to ZZZ from JFK, the airplane encountered wake turbulence approximately 20 minutes prior to landing (17000 feet). As trained, the autopilot was disconnected and the aircraft was hand flown to return to normal attitude and slowed to 270 KIAS. After ensuring the aircraft was stable, the autopilot was engaged again and the Captain notified ATC about the encounter. ATC then communicated that there was a heavy Aircraft Y only 7 miles ahead of us on the arrival. We continued slowing the aircraft and monitored the flightpath to ensure no similar encounters occurred. The flight continued without anymore disturbances. The cause of this would have been a lack of communication and proactiveness on behalf of ATC. Only after communicating to ATC that we encountered wake turbulence were we made aware of the heavy aircraft that was only 7 miles ahead of us on the same path. To avoid recurrence of such events, ATC should increase the spacing when a smaller aircraft follows a heavy aircraft or at least communicate with pilots that they are following a heavy aircraft. Usually this advisory comes during takeoff and landing but we should have received this advisory en route also.

Callback: 1

Reporter stated advance warning from ATC would have been greatly appreciated.

Synopsis

EMB-175 First Officer reported encountering wake turbulence on descent into IAD 7 miles in trail of a B787.

Time / Day

Date : 202308

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZLA.ARTCC

State Reference : CA

Altitude.MSL.Single Value : 38000

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZLA

Aircraft Operator : Fractional

Make Model Name : Gulfstream V / G500 / G550

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class A : ZLA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class A : ZLA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Fractional

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2031006

Analyst Callback : Attempted

Events

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

Assessments

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

Narrative: 1

Re: Enroute wake turbulence encounter. We were proceeding to LAX via the ANJLL 4 RNAV ARRIVAL in the vicinity of the SHTNR intersection at FL400 and Mach .83. ATC assigned an initial descent, but we were not yet cleared to "Descend Via" the RNAV arrival. Descending through approximately FL380 we encountered what felt like the start of light chop. When it was evident it was likely a wake encounter, the pilot flying (PF) disconnected the Autopilot and shallowed the descent rate in the attempt to get out of the wake zone. The aircraft suddenly rolled into an approximately 40 degree angle left bank. The PF returned to level flight and further shallowed the descent rate. We did not experience any other encounters for the remainder of the flight. We queried ATC as to what type aircraft we were following and were told we were 13 miles in-trail of a B787, also descending. The seatbelt sign was turned ON at the top-of-descent. However, one pax was not in their seat at the time of the encounter. The flight attendant and the PIC checked the cabin and spoke with passengers, and confirmed there were no injuries or damage in the cabin. The encounter did not lead to any RVSM excursions or aircraft exceedances. Suggestions: Although we were 13 miles in-trail of the B787 we still encountered significant wake turbulence. Although at the time I did not know what type aircraft we were following, I don't know that I would have been concerned if ATC had told me it was a B787, due to us being at least 13nm behind him. Perhaps a re-evaluation of safe in-trail distances is in order. One contributing factor is that we were executing an ATC descent clearance, not a "Descend Via" clearance. I don't know what type descent the B787 was on, but it seems more likely that if we would have both been on a Descend Via clearance the risk of us descending below his wake profile would have been less likely.

Synopsis

G550 Captain reported encountering wake turbulence descending through FL380 13 miles in trail of a B787. Reporter suggested increased separation might be advisable.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : BOS.Airport

State Reference : MA

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : BOS

Aircraft Operator : Air Carrier

Make Model Name : Cessna 402/402C/B379 Businessliner/Utiliner

Crew Size.Number Of Crew : 1

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : BOS

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : BOS

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

Airspace.Class B : BOS

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2028672

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

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

Assessments

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

Narrative: 1

We took off out of ZZZ [Airport] VFR with no issue. BOS Approach cleared me into the Bravo via the Bravo 04L. They put us on a heading towards Boston and pointed out the parallel traffic for 4R. Approach turned us on the right side and in front of traffic for 4R, I had them in sight the entire time. Approach told us direct to the numbers, 170 or better, and to start the descent, so we could go faster. At this point we were about 5 miles out and still right of the traffic and at the same altitude. Approach cleared us for the visual 4L and switched us over to Tower. Tower still wanted us to go fast and cleared us to land 4L. So I decided to level off briefly so I could get behind and above the traffic on 4R. Once I was crossing behind them, we entered their wake. It felt like it was moderate turbulence. I felt my head hit the ceiling, however the plane was still under control and I was able to line up for 4L. Landing was normal and taxied to the gate. Once the engines were stopped I turned to the passengers and asked if everyone was alright. They all said they were fine and appeared good as well. Nobody mentioned that they got hurt. While walking out of the plane I fixed the seatbelts and did my walk around, everything looked normal. Cause: Being vectored on the right side at the same altitude and in front of faster traffic landing the right while being cleared for the visual on the left. Getting too close to the wakes of other traffic. And not telling Approach that I wanted to be re-vectored around.

Synopsis

Cessna 402 pilot reported encountering wake turbulence on approach to BOS.

Time / Day

Date : 202308
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : DFW.Airport
State Reference : TX
Altitude.AGL.Single Value : 150

Aircraft : 1

Reference : X
ATC / Advisory.Tower : DFW
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 : Final Approach
Airspace.Class B : DFW

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : DFW
Aircraft Operator : Air Carrier
Make Model Name : Commercial Fixed Wing
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Landing
Airspace.Class B : DFW

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2027965
Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Executed Go Around / Missed Approach

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

Weather was VFR and clear. Turned by Approach Control onto base and final for [Runway] 35R very close to the aircraft ahead, about 2.5 to 2.75 miles ahead. Slowed to final approach speed of 148 kts. The aircraft ahead just cleared runway as we descended through 150 ft. In flare, we hit wake turbulence and did go-around. Incidentally, the exact same thing happened the prior day when we had to do go-around on Runway 17L at DFW, same scenario. I spoke to DFW Tower and Approach supervisors. Since east side DFW down to 2 runways, the controllers are getting spacing wrong. Also, I don't think many controllers realize the B737 approach speeds are about 7 to 10 kts higher than most other transport category aircraft. Suggestion: Make controllers aware of higher 737 approach speeds and increase spacing!

Synopsis

Air Carrier B737-800 Captain reported encountering wake turbulence from preceding aircraft just before touchdown at DFW.

Time / Day

Date : 202308

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : D10.TRACON

State Reference : TX

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : D10

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : DFW

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : D10

Aircraft Operator : Air Carrier

Make Model Name : B747 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Approach

Airspace.Class B : DFW

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2027932

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2027935

Events

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

Assessments

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

Narrative: 1

While in the downwind for Runway 18R ATC instructed us to descend with extended vectors for the approach. They instructed us that we would be following a 747 and that we had 7 miles of spacing. While on final approach between YOHAN and LEGRE for 18R we experienced significant wake turbulence. This forced our aircraft into an unusual attitude with a right bank of approximately 70 degrees. The event caused the autopilot to disconnect and we stabilized the aircraft expediently. Our airspeed was 160 knots. I informed ATC of the event and asked to slow down to create more space. We continued the approach and landed safely. No pilot deviations occurred during the event. The 747 in front of us for the runway was vectored in from 4,000 feet. Even though the spacing was ample, the air was stagnant and so the wake turbulence remained in our path. It is important to consider how winds aloft might have an effect on wake turbulence in these circumstances.

Callback: 1

Reporter stated the intensity of the wake at a low altitude was "not a fun ride."

Narrative: 2

On approach DFW Runway 18R crew experienced wake turbulence from B747 on approach 7 miles ahead. Preceding aircraft was vectored in at 4,000 ft. while we were vectored in at 3,000 ft. Crew discussed distance behind the heavy and were vigilant for wake. Between YOHAN and LEGRE at 160 knots, we experienced a rapid right roll to approximately 70 degrees of bank. Pilot Flying (PF) clicked AP disconnect and commanded left bank to return to wings level. Event last 1-2 seconds. We climbed slightly above 3,000 ft. and coordinated with ATC to slow down more to increase distance in trail. Then we maintained just above glideslope center referencing the ILS and PAPI and landed just beyond what we believed to be the heavy touchdown point to avoid any further incident. Despite a good following distance the heavy's approach crossed our altitude. The wind was straight down the runway approach path so the wake did not drift to the side of the approach path at all. Approach should keep in mind that following distance is not the only factor in wake turbulence avoidance.

Synopsis

EMB-170 flight crew reported encountering wake turbulence seven miles in trail of a B747 on approach into DFW.

Time / Day

Date : 202308

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : CLT.Tower

State Reference : NC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Flight Phase : Final Approach

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : CLT

Aircraft Operator : Air Carrier

Make Model Name : Airbus Industrie Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Airspace.Class B : CLT

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Check Pilot

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2027755

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Unstabilized Approach
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 : Human Factors

Narrative: 1

Landing [Runway] 36R in CLT with flaps 45, Pilot Flying (PF) was a Line Check Airmen (LCA) in the right seat doing Captain upgrade OE. Upgrade Captain was Pilot Monitoring (PM). We were approximately 4 miles in trail of an Airbus (type unknown). The Airbus touched down approximately 1,200-1,500 feet down the runway, and turned off (I believe) on Runway 5/23. The aircraft was clearing the runway when we were approximately 500-600 ft. AGL. Winds were 040-050 at about 4-6 knots. Approach was smooth, stable and uneventful. Upon crossing the threshold around Vref to Vref+3, we encountered wake turbulence with at first some left/right wing rock, but nothing that isn't typically encountered for landing in CLT. The PF could feel the aircraft lose lift, and added substantial power. The engines were already stabilized from the final approach, at my best guess is 60-64% N1. PF added power nearly to the thrust detent and felt the airplane respond, with the induced sink rate arresting approximately a few feet from the runway. An EGPWS "Don't Sink" aural message was presented. The PF did not hit TOGA, and with the airplane in a slow airspeed state barely off the runway, the PF believed the safest course of action was to idle the throttles and get the aircraft on the runway. A smooth landing was accomplished and the aircraft rolled out with no further incident. PF/LCA was surprised with regards to the Mode 3 alert that is normally presented for climb out situations where the aircraft begins a rate of descent. The environmental conditions were ideal for a potential wake turbulence encounter given the previous aircraft touchdown point, and the gentle quartering headwind on the field at that time. I would very much like to see the metrics from the event, as well as the EGPWS logic that was presented given the conditions. While a go-around was certainly a viable option at that time, given the energy state of the aircraft when it recovered and its close proximity to the runway I believe setting it on the ground was the safest course of action at the time.

Synopsis

EMB-145 Captain reported encountering wake turbulence just before touchdown from a preceding Airbus that resulted in an EGPWS "Don't Sink" alert. Reporter stated the aircraft energy state was low so a decision to continue to a safe landing was made.

Time / Day

Date : 202308

Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.AGL.Single Value : 0

Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 19229

Experience.Flight Crew.Last 90 Days : 182

Experience.Flight Crew.Type : 2371

ASRS Report Number.Accession Number : 2026165

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Anomaly.No Specific Anomaly Occurred : Unwanted Situation

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

Assessments

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

Within the last 5 to 7 years, I have had numerous incidents during both takeoff and approach/landing with wake turbulence. Some incidents have been very pronounced. I truly believe from a safety standpoint that there needs to be more separation on takeoff and approach/landing. I think that within the last 5 to 7 years that the addition of winglets on all aircraft and commercial aircraft becoming more aerodynamically streamlined that the wake turbulence has become more pronounced. I have been flying with the airlines for

25 years and have noticed an increasing amount of wake turbulence encounters. These encounters are becoming more frequent and more pronounced. Some of these encounters require evasive action. This is something that I hope the FAA takes a more investigative approach to. There truly needs to be more separation and scrutiny with aircraft distance on takeoff and approach/landing. With RECAT (re-categorization), I believe these conditions will continue. I always give myself additional separation on takeoff, but I find it more difficult to do on approach to busy airports such as LAX, LGA, DCA, etc... Please consider this something to look into carefully. Thank you for your time and attention.

Synopsis

B737 Captain reported wake turbulence incidents have become more prevalent and suggested there to be more consideration with wake turbulence recategorization.

Time / Day

Date : 202308

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZNY.ARTCC

State Reference : NY

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZNY

Aircraft Operator : Air Carrier

Make Model Name : B737 Next Generation Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZNY

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZNY

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Cruise

Airspace.Class A : ZNY

Person

Location Of Person.Aircraft : X

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 143.87

Experience.Flight Crew.Type : 187.02

ASRS Report Number.Accession Number : 2025780

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

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

Assessments

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

Narrative: 1

Aircraft entered uncommanded left bank with autopilot engaged greater than 30 degree. PF (Pilot Flying) disconnected autopilot and immediately returned to level flight. Crew reported incident with ATC and confirm with cabin crew all passengers ok. Additionally, PM made PA to pax (passengers) explaining what occurred and that all was ok.

Synopsis

B737 NG Captain reported encountering wake turbulence at FL320 in ZNY airspace.

Time / Day

Date : 202308

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : MIA.Airport

State Reference : FL

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : MIA

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : MIA

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : MIA

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 : Descent

Airspace.Class B : MIA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2024399

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

While descending on the CSTAL 2 Arrival, after a frequency change to Miami Approach, the controller requested we slow to 280 KIAS. I responded that we were currently flying 280 KIAS as assigned by the previous controller. When the ATC explained that we were following Aircraft Y 8 NM ahead, we volunteered to slow further as well as our willingness to accept a delay vector. We were told that slowing further was not possible as there was an aircraft behind us as well on the arrival and that a turn wouldn't be necessary. Shortly thereafter, less than 5 minutes, we encountered wake turbulence presumably from Aircraft Y in front of us. We maintained control of the aircraft but definitely encountered both roll and pitch consistent with wake/moderate turbulence. We informed the controller and were given vectors immediately. We then made a PA to the passengers explaining what happened. Everyone was already seated as we had prepared the cabin for landing earlier. We landed uneventfully. No one was injured to our knowledge. Everyone seemed fine as I said goodbye to the passengers as they disembarked. Tight aircraft spacing, approximately 8 miles, on arrival behind Aircraft Y. Consider additional requirements or increased emphasis on adherence to aircraft spacing requirements/regulations to provide more conservative safety margins... i.e., increase aircraft spacing all phases of flight.

Synopsis

B737-800 Captain reported encountering wake turbulence while 8 miles in trail of another heavy aircraft on descent into MIA.

Time / Day

Date : 202308

Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : ZLA.ARTCC

State Reference : CA

Environment

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class A : ZLA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZLA

Aircraft Operator : Air Carrier

Make Model Name : Widebody Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class A : ZLA

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2023557

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Last 90 Days : 170
Experience.Flight Crew.Type : 3800
ASRS Report Number.Accession Number : 2023575

Events

Anomaly.Deviation - Altitude : Overshoot
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

Assessments

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

Narrative: 1

We were climbing to assigned altitude and hit wake turbulence from a heavy Aircraft Y ahead 10 NM, which had climbed through the altitude we were passing through. I disengaged the autopilot and maintained control of the aircraft. After the event we had passed through our assigned altitude by approximately 400 ft. First Officer notified ATC, and I descended back down to assigned altitude. Flight continued with no other issues. Went through assigned altitude due to encountered wake turbulence.

Narrative: 2

We were cleared to climb to FL250. We were following another aircraft. While climbing through approximately FL240 we experienced wake turbulence. During the recovery the Captain disconnected the autopilot and we leveled off at FL255 and corrected back to our clearance limit of FL250. I let ATC know as soon as possible. ATC said there was no problem. We were also in a very light -700. The rest of the flight was uneventful. Climbing to new altitude, experienced wake turbulence and recovery caused us to overshoot our altitude. Unsure what else could be done.

Synopsis

B737-700 flight crew reported experiencing wake turbulence while climbing to assigned altitude and proceeded to overshoot the altitude. ATC was informed and the Captain corrected the aircraft back to the assigned altitude.