

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.....23

Date of UpdateJanuary 10, 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: 2033373 *(1 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 *(2 of 50)*

Synopsis

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

ACN: 2031006 *(3 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 *(4 of 50)*

Synopsis

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

ACN: 2027965 *(5 of 50)*

Synopsis

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

ACN: 2027932 *(6 of 50)*

Synopsis

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

ACN: 2027755 *(7 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 *(8 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 *(9 of 50)*

Synopsis

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

ACN: 2024399 *(10 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 *(11 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.

ACN: 2022441 *(12 of 50)*

Synopsis

A319 pilot flying reported encountering rough wake turbulence while departing from DCA and suggested that an increase in separation between aircraft on departure is needed.

ACN: 2021881 *(13 of 50)*

Synopsis

B787 Captain and F/O reported encountering wake turbulence in trail of an A380 in cruise flight at FL360.

ACN: 2021718 *(14 of 50)*

Synopsis

B787 Captain and First Officer reported encountering wake turbulence 25 miles in trail of an A330 in cruise flight at FL360 that resulted in a minor Flight Attendant injury.

ACN: 2021609 *(15 of 50)*

Synopsis

Widebody Captain reported encountering wake turbulence on short final at SDF. Reporter also stated they landed with a 14 kt tailwind.

ACN: 2021090 *(16 of 50)*

Synopsis

EMB-145 First Officer reported encountering wake turbulence on short final at DEN.

ACN: 2020269 *(17 of 50)*

Synopsis

B737 MAX 8 Captain reported encountering "borderline severe" wake turbulence at FL340 22 miles in trail of an aircraft at FL350.

ACN: 2020184 *(18 of 50)*

Synopsis

Beechjet 400 Captain reported encountering wake turbulence climbing through FL390 that resulted in an inflight upset.

ACN: 2019930 *(19 of 50)*

Synopsis

Air Carrier B737-800 flight crew reported encountering wake turbulence 10 miles in trail of another B737 at FL340 resulting in an inflight upset.

ACN: 2019038 *(20 of 50)*

Synopsis

B737-800 Captain reported a track deviation occurred following a wake vortex encounter in cruise flight.

ACN: 2017771 *(21 of 50)*

Synopsis

EMB-145 First Officer reported encountering wake turbulence departing CLT in trail of an Airbus. Reporter suggested increased spacing on departures.

ACN: 2017643 *(22 of 50)*

Synopsis

B767-300 First Officer reported experiencing a momentary stick shaker after a wake turbulence encounter departing PHX on the FORPE1 SID in trail of another jet transport. Reporter cited the design of the departure procedure as contributing.

ACN: 2017106 *(23 of 50)*

Synopsis

Cessna 172 pilot reported encountering wake turbulence on approach to BFI in trail of a preceding jet aircraft.

ACN: 2017027 *(24 of 50)*

Synopsis

Air carrier Captain reported recovering from an upset related to a wake turbulence encounter on approach to CLT in trail of a heavy jet.

ACN: 2016462 *(25 of 50)*

Synopsis

B777 Captain reported experiencing wake turbulence and deviating from assigned airspeed to mitigate the effects and maintain a stable approach without informing ATC of intentions.

ACN: 2015852 *(26 of 50)*

Synopsis

C550 Captain reported experiencing a sharp bump on approach that resulted in the autopilot failing and loose objects being knocked down. There were no injuries to the passenger and flight crew, but there was minor damage to the aircraft's lavatory tank.

ACN: 2015581 *(27 of 50)*

Synopsis

Small transport Captain reported encountering wake turbulence from the preceding aircraft upon takeoff. The passenger in the copilot seat then grabbed the yoke and attempted to perform dangerous maneuvers that would have worsened the condition. The Captain pushed the passenger's hands off the yoke and maintained positive control of the aircraft, and calmed the passenger.

ACN: 2013624 *(28 of 50)*

Synopsis

First Officer reported a "severe" wake turbulence encounter on descent into MIA in trail of a B747. Reporter stated they were not advised by ATC they were in trail of a heavy jet.

ACN: 2013584 *(29 of 50)*

Synopsis

An air carrier Captain reported encountering wake turbulence on approach into LAX.

ACN: 2011966 *(30 of 50)*

Synopsis

C172 Instructor Pilot reported wake turbulence from a military tanker overflying their aircraft resulted in an upset.

ACN: 2011367 *(31 of 50)*

Synopsis

Air carrier flight crew reported slowing below ATC assigned speed following a wake turbulence encounter on approach to ATL.

ACN: 2011055 *(32 of 50)*

Synopsis

B737NG Captain reported encountering wake turbulence 10 miles in trail of an Antonov-124 aircraft at FL340 that resulted in an upset.

ACN: 2009958 *(33 of 50)*

Synopsis

B767 First Officer reported encountering wake turbulence from a preceding B777 aircraft at FL357 in Gander airspace that resulted in a minor injury to a flight attendant.

ACN: 2009474 *(34 of 50)*

Synopsis

Air carrier Captain reported encountering possible wake turbulence in cruise flight that resulted in an injury to a flight attendant.

ACN: 2008917 *(35 of 50)*

Synopsis

B777 Captain reported encountering wake turbulence on initial climb out of HNL from another B777 landing on an intersecting runway.

ACN: 2008216 *(36 of 50)*

Synopsis

EMB-175 flight crew reported encountering wake turbulence at FL340 from a B737 that crossed their path 1000 ft. above them.

ACN: 2005591 *(37 of 50)*

Synopsis

A320 Captain reported executing a go-around at EWR after encountering wake turbulence on approach 6 miles in trail of a B777.

ACN: 2004855 *(38 of 50)*

Synopsis

CRJ-900 flight crew reported encountering significant wake turbulence on arrival into DFW in trail of an A321.

ACN: 2003627 *(39 of 50)*

Synopsis

Air carrier flight crew reported a hard landing occurred when the flying pilot encountered light wake turbulence from preceding B777 aircraft just before touchdown. The Captain cited the relative lack of First Officer experience as contributing.

ACN: 2002158 *(40 of 50)*

Synopsis

B737-700 First Officer reported climbing above an altitude restriction departing LAS, citing distractions from checklist and wake turbulence as contributing to the incident.

ACN: 2001065 *(41 of 50)*

Synopsis

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

ACN: 2000500 *(42 of 50)*

Synopsis

Air carrier Captain reported encountering wake turbulence on arrival into ORD 5 miles in trail of another aircraft.

ACN: 1999481 *(43 of 50)*

Synopsis

EMB-145 Captain reported encountering severe wake turbulence on arrival into ORD 10 miles in trail of a B777.

ACN: 1997293 *(44 of 50)*

Synopsis

GA Flight Instructor reported encountering wake turbulence from a corporate jet after the jet cut inside him on departure from GVL.

ACN: 1996154 *(45 of 50)*

Synopsis

B737-700 flight crew reported a track deviation occurred on departure from MDW as a result of a wake turbulence encounter from the preceding aircraft.

ACN: 1995287 *(46 of 50)*

Synopsis

Airbus flight crew reported encountering wake turbulence on approach to PHX in trail of a Boeing commercial jet that contributed to flight stability issues and a momentary flap overspeed.

ACN: 1994282 *(47 of 50)*

Synopsis

Air carrier Captain reported encountering gusty winds and wake turbulence from preceding aircraft on approach to LAS, resulting in a low altitude GPWS "Don't Sink" annunciation. Pilot continued to a normal landing.

ACN: 1993943 *(48 of 50)*

Synopsis

A321 Captain reported executing a go-around after encountering wake turbulence from a B777 on the takeoff roll on the same runway the A321 was close to landing on. During the go-around the A321 again encountered wake turbulence from the B777.

ACN: 1991965 *(49 of 50)*

Synopsis

CRJ700 Captain reported a hard landing resulted after encountering wake turbulence from a heavy jet landing on a crossing runway.

ACN: 1990781 *(50 of 50)*

Synopsis

CE-560XLS Captain reported encountering wake turbulence on descent into MEM 10 miles in trail of a B757 that resulted in a "violent" roll and pitch reaction.

Report Narratives

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

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.

Time / Day

Date : 202307

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : DCA.Airport

State Reference : DC

Altitude.AGL.Single Value : 200

Aircraft : 1

Reference : X

ATC / Advisory.Tower : DCA

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 : Takeoff / Launch

Airspace.Class B : DCA

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : DCA

Aircraft Operator : Air Carrier

Make Model Name : A320

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Climb

Airspace.Class B : DCA

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 : 2022441

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

Tower is clearing jets to take off with too little spacing. They said do you have the preceding jet in sight cleared for takeoff. At about 200 ft. we were violently rolled in wake turbulence. There is no way to visually stay out of wake turbulence. They are compressing the departures to increase the arrival rate. I called DCA Tower, they said that is the standard procedure. So much for safety. At DFW several times recently I have been cleared for takeoff before the preceding aircraft has even lifted off. It is so frequent that it happens at least once every pairing. Wish they would increase the separation, just delaying I'm sure will aggravate the controls. Unless it comes as instruction from management.

Callback: 1

Reporter stated seeing this issue of inadequate separation on takeoff "everywhere".

Synopsis

A319 pilot flying reported encountering rough wake turbulence while departing from DCA and suggested that an increase in separation between aircraft on departure is needed.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : KZAK.ARTCC

State Reference : HI

Altitude.MSL.Single Value : 36000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : KZAK

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : KZAK

Aircraft : 2

Reference : Y

ATC / Advisory.Center : KZAK

Aircraft Operator : Air Carrier

Make Model Name : A380

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : KZAK

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 15325

Experience.Flight Crew.Last 90 Days : 170

Experience.Flight Crew.Type : 5399

ASRS Report Number.Accession Number : 2021881

Human Factors : Situational Awareness
Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Last 90 Days : 238
Experience.Flight Crew.Type : 3293
ASRS Report Number.Accession Number : 2021891

Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence
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
Primary Problem : Environment - Non Weather Related

Narrative: 1

We were flying on PACOT East 2 track at F350, 19 miles behind another aircraft at FL370. We attempted voice contact with them on XXX.XX frequency to get a ride report but got no response. We were SLOped 1.5 NM right and the aircraft ahead had zero SLOP (Strategic Lateral Offset Procedure). Winds were from left, slightly aft, at 43 kts. We had been held down because of this aircraft and wanted to climb do burn less fuel. We were off our altitude profile. We discussed climbing to FL360 as we didn't think wake turbulence would be a factor. We climbed to FL360 and within a few minutes encountered what we thought was severe clear turbulence with some rolling motions about 10 degrees. We sat the flight attendants immediately according to turbulence procedures. We requested a descent back to FL350 because it had been smooth. We sent a PIREP of severe turbulence and discussed what might have caused this. WSI and the radar didn't indicate any turbulence possibilities. We re-attempted contact with the aircraft ahead and it was an A380 Super. The light bulb came on that it was probably wake turbulence due to our 1.5 NM offset, 1,000 ft below, and winds from the left at 40kts-ish. We immediately zeroed out the SLOP. After a bit of time it was night time and the 3/4 moon came up and we were eventually able to see [the A380's] contrails. We asked them to offset right while we stayed zero SLOP.

Narrative: 2

At FL350 climbed to FL360. Suddenly encountered severe turbulence. Made PA announcement for Flight Attendants (FA) to seated immediately. Requested descent back down to FL350. Clearance received after about 1 minute, descended to FL350. Turbulence

decreased. Made PA for FA to take jump seats. After about 5 minutes, determined it was safe and made PA for FA to check in. No injuries were reported.

Synopsis

B787 Captain and F/O reported encountering wake turbulence in trail of an A380 in cruise flight at FL360.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 36000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B787 Dreamliner Undifferentiated or Other Model

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A330

Crew Size.Number Of Crew : 4

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 2352.75

Experience.Flight Crew.Last 90 Days : 233.08

Experience.Flight Crew.Type : 731.23

ASRS Report Number.Accession Number : 2021718

Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Attendant
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 : Multiengine
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Total : 5815.18
Experience.Flight Crew.Last 90 Days : 92.7
Experience.Flight Crew.Type : 3028
ASRS Report Number.Accession Number : 2021726
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : Flight Attendant

Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence
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 : Ambiguous

Narrative: 1

Level in cruise approximately 25 NM behind another plane on a similar routing. We crossed under his contrail at an oblique angle and encountered what we believe was their wake. Moderate bump initially and light to moderate bumps for roughly 5 seconds after. At the first bump we made a PA to the Flight Attendants to be seated immediately. The encounter ended right after the PA. We waited a couple of minutes to be sure we were clear and had the flight attendants return to their jumpseats and check in. At the check in it was reported to me that all were fine. The next day, while walking to the airplane after the layover, I was approached by one of our Flight Attendants. The Flight Attendant related to me that he had injured his shoulder while holding on in the galley. He didn't tell anyone about this the day of the flight. I asked if he was ok and was able to work the flight back and he said yes, he was fine. He said it was possibly related to another injury he has from repetitive motion pouring coffee and that he was really fine. He said he would likely write an injury report of this, for later documentation, so I am writing this report. I talked with the Purser about the encounter and the Purser said it had not been mentioned.

Narrative: 2

While at cruise, we unexpectedly encountered wake turbulence from an A330 that had crossed our path 1000 ft. above and roughly 10 miles in front of us. The Captain immediately turned the seatbelt sign on and informed the Flight Attendants (FA) to take their jumpseats immediately. The turbulence lasted about 20 seconds. There were no reports of injuries when the FAs checked in afterwards or the remainder of the flight. The first indication I had that a FA had been injured was the next day when he told the Captain.

Synopsis

B787 Captain and First Officer reported encountering wake turbulence 25 miles in trail of an A330 in cruise flight at FL360 that resulted in a minor Flight Attendant injury.

Time / Day

Date : 202307

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : SDF.Airport

State Reference : KY

Aircraft : 1

Reference : X

ATC / Advisory.Tower : SDF

Aircraft Operator : Air Carrier

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

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 : Landing

Airspace.Class B : SDF

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : SDF

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Landing

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 : 17000

Experience.Flight Crew.Last 90 Days : 50

ASRS Report Number.Accession Number : 2021609

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

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

SDF was landing north with winds reported 18/07. Winds were 220/20-25kts down final. We touchdown with a TW (tailwind) of 14kts. I was monitoring the TW as we crossed threshold and it was 10kts. We then encountered wake turbulence from preceding aircraft. With the First Officer controlling that and corrected for safe landing, I then looked at the Primary Flight Display and realized we touched down with a 14kt TW. That explained the wake turbulence and longer than normal rollout. I reported this to the Tower and they said the supervisor was looking at turning the airport around. Then other aircraft began reporting the same TW issues. This was the second time this week that SDF was landing north with strong winds from the south. Two nights earlier we were the third airplane reporting landing at max TW limits. Prevention: No reason why we should be landing to the north with prevailing winds out of the south especially during summer months. Controllers have told us on frequency its about noise over Louisville. Noise is easier to overcome than jeopardizing the safety of pushing the TW limits especially on the Aircraft X.

Synopsis

Widebody Captain reported encountering wake turbulence on short final at SDF. Reporter also stated they landed with a 14 kt tailwind.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : DEN.Airport

State Reference : CO

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : DEN

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 : DEN

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : DEN

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 : 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

ASRS Report Number.Accession Number : 2021090

Human Factors : Time Pressure

Human Factors : Situational Awareness

Human Factors : Confusion

Analyst Callback : Attempted

Events

Anomaly.Inflight Event / Encounter : Fuel Issue
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

We departed ZZZ with 7000 pounds of fuel. Release called for 6500. We were rerouted on the arrival into DEN. I asked Captain if fuel was a concern. At first he stated that he had no concern and then he became focused on a page in the FMS that showed remaining minutes in the flight and became obsessed with that page. Even though the page showed remaining minutes in the flight and not remaining fuel, he seemed to be misunderstanding that page. We reported to ATC that we were concerned about fuel due to the rerouting and Captain called Dispatch. I was the pilot flying (PF) on this leg. While Captain was on the radio with the Company, ATC came back and reported that they could get us in. I began to set us up for the approach into DEN. After the call with Company, Captain was agitated and frustrated and reported, "We are on our own." I tried to assuage Captain and assured him that DEN was getting us in and there was no need to worry. (I did not actually see fuel as a concern at this point as we were descending into DEN.) Upon commencing the visual approach, Captain declared "My controls" and took over as PF. ATC advised us to slow to 190. We were flying at 233. I asked Captain if he wanted flaps to help slow us. He declared negative as he was concerned about drag due to an incorrectly perceived fuel issue. Captain refused to slow as he was concerned about sacrificing speed. ATC advised us to slow to 170. We were still far too fast. We were getting far too close to the plane ahead of us on final. We were advised that if we did not slow we would have to go around. ATC asked if we were [requesting priority for fuel problem]. With 2300 pounds of fuel on short final, I did not agree but Captain declared, "Yes," so I reported "Affirmative." The plane ahead of us was ordered to go around at approximately 200 ft. Experiencing their wake was severe and I believe unnecessary. When we landed, the Flight Attendant (FA) immediately remarked, "What happened?!" We landed with about 2300 pounds of fuel and I do not believe that we truly ever experienced a "[fuel problem]."

Synopsis

EMB-145 First Officer reported encountering wake turbulence on short final at DEN.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZOA.ARTCC

State Reference : CA

Altitude.MSL.Single Value : 34000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZOA

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 : ZOA

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZOA

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 : ZOA

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 : 200

Experience.Flight Crew.Type : 11000

ASRS Report Number.Accession Number : 2020269

Analyst Callback : Completed

Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Regained Aircraft Control

Result.Air Traffic Control : Issued New Clearance

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

Narrative: 1

At cruise 22 NM behind (other carrier) aircraft at FL350. We were at FL340. Rides reported to be smooth. We started to feel a bit of wake. FO (First Officer) and I decided to "slop" to right (R2). (Other carrier) aircraft ahead had also decided to slop R2. We were talking to them on 123.45. Wind was nil. We then decided to now go back to zero slop, which seemed to be better. A minute or so later, we encountered borderline severe wake turbulence. Aircraft rolled 30 degrees left. "Roll authority" appeared on PFD's. Told FO to correct right, which he did. We were still in wake. We decided safest course was to deviate and slop 1 mile left (L1) to exit the wake. I then sent a message to ZOA to request climb, due to wake from (other carrier) aircraft ahead to FL360, which we received within two minutes. We then climbed and had a smooth uneventful flight. I called the FA's (Flight Attendants). Although they were a bit shaken, they reported no injuries in the cabin. No altitude was lost. We removed the L1 when we climbed through (other carrier) aircraft's altitude. Being so close behind a heavy aircraft, on same route, with zero wind at cruise was the perfect conditions for enroute wake with a roll upset.

Callback: 1

Reporter stated he was surprised at the severity of the wake.

Synopsis

B737 MAX 8 Captain reported encountering "borderline severe" wake turbulence at FL340 22 miles in trail of an aircraft at FL350.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.Navaid : ORL.VORTAC

State Reference : FL

Relative Position.Angle.Radial : 090

Relative Position.Distance.Nautical Miles : 20

Altitude.MSL.Single Value : 39000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZJX

Aircraft Operator : Air Carrier

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Route In Use : Direct

Airspace.Class A : ZJX

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZJX

Make Model Name : Commercial Fixed Wing

Flight Plan : IFR

Airspace.Class A : ZJX

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 : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 5803

Experience.Flight Crew.Last 90 Days : 160

Experience.Flight Crew.Type : 2170

ASRS Report Number.Accession Number : 2020184
Analyst Callback : Completed

Events

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 : Regained Aircraft Control

Assessments

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

Narrative: 1

I was climbing through FL390 when we hit wake turbulence. The aircraft abruptly and rapidly rolled right to approximately 110 degree bank and the aircraft pitched down approximated 40 degree nose low. I immediately executed an upset recovery, losing about 2000 ft. in the process. We had two passengers on board - both were uninjured. I noted there was a TCAS target about 12-15 miles in front traveling the same north direction, indicating FL390.

Callback: 1

Reporter stated the encounter was surprisingly strong and abrupt.

Synopsis

Beechjet 400 Captain reported encountering wake turbulence climbing through FL390 that resulted in an inflight upset.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZDC.ARTCC

State Reference : VA

Altitude.MSL.Single Value : 34000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZDC

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 A : ZDC

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZDC

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

Airspace.Class A : ZDC

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 : 2019930

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2019916

Events

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

Assessments

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

Narrative: 1

Just prior to level off at FL 340, aircraft hit light turbulence with slight left roll then a rapid left roll of about 50 degrees and nose down of about 15 degrees. Event was very similar to an unusual attitude event in the simulator. My FO (First Officer) handled it perfectly as he clicked off autopilot before it disconnected. He rolled wings level and raised the nose before we got an over speed. He even included, "My aircraft," which was perfect. We were in the clear above clouds, with no convective activity around so I asked ATC what we were following. The controller said there was a 737 about 10 miles ahead at FL 340. The wind was on our nose at 82 kts, so it seemed consistent with a wake turbulence encounter. I checked with the Flight Attendants who reported everybody was fine. I then made a PA to explain the wake turbulence encounter. The aircraft was flying fine so we continued to ZZZ and made a normal approach and landing. I made a logbook entry of the momentary severe turbulence encounter due to wake turbulence. Despite being 10 miles behind another 737, the winds on the nose of 82 kts set us up for the worst wake turbulence encounter of my years on the 737! This was totally unexpected and strange!

Narrative: 2

The Captain and myself experienced wake turbulence from a B737 10 miles away. The wake put us in an undesirable aircraft state, about 60 degrees bank to the left with a nose down attitude. No one was injured. Cause was wake turbulence.

Synopsis

Air Carrier B737-800 flight crew reported encountering wake turbulence 10 miles in trail of another B737 at FL340 resulting in an inflight upset.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZDC.ARTCC

State Reference : VA

Altitude.MSL.Single Value : 37000

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZDC

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZDC

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZDC

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 : ZDC

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2019038

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation / Discrepancy - Procedural : Clearance

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.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

During cruise flight at FL370 we had been encountering continuous choppy air. As we crossed over the Chesapeake Bay Area just north of Norfolk VOR, I noticed that there was a contrail directly in front of our aircraft that we were flying directly within. I assumed that perhaps we were in the wake turbulence of another aircraft and requested a right deviation of up to 3 miles right of course to see if we could get out of the wake turbulence that we appeared to be flying into. Washington ATC questioned why I wanted the right deviation and I advised them that there was a cloud we were attempting to avoid. The right deviation was approved and I was told to proceed to ZJAAY after deviation and I selected a 20 to 25 degree heading to the right of course to exit the bumpy air. After approximately 2 minutes of the heading we had exited the choppy air and I selected a heading back to the left to start heading back over towards our original course line and then proceeded to input into the FMS the Direct to ZJAAY point as directed by ATC. The airplane after I selected LNAV began a right turn to proceed directly to ZJAAY and then the controller asked us in a frantic voice, "where are you going". I advised him that we were direct to ZJAAY and he replied "NO YOU'RE NOT". I advised him that we were in the turn directly to ZJAAY and then he advised a [other carrier] flight to descend to FL360 and then advised me that I had a possible pilot deviation and standby to copy a number. I then received the number and asked ATC to pull the tapes. I noticed that there was an aircraft approximately 5 miles away from me heading southbound at FL 370 wrong direction but verified that I never deviated left of my original course line on the airway. We never even came close to the other aircraft according to our TCAS system and never received a traffic call or a TA or RA call from the TCAS system. Cause: Looking back at this I might have put in an aggressive turn back towards the original course while I input data into the FMS but I am pretty certain that we never deviated left of our original course and by the time the ATC controller asked me where I was going I was already heading directly to ZJAAY as directed. Suggestions: Perhaps always putting the direct to point in the FMS and selecting that instead of using heading select may have not appeared to be such a large turn back towards the original course.

Synopsis

B737-800 Captain reported a track deviation occurred following a wake vortex encounter in cruise flight.

Time / Day

Date : 202307

Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : CLT.Airport

State Reference : NC

Altitude.MSL.Single Value : 1000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : Airbus Industrie Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

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 : 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 : 2017771

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 : Procedure

Narrative: 1

On departure from CLT, we were given an initial heading of 190 on takeoff from [Runway] 18C. After about 1,000 feet AGL, Tower told us to turn right to heading 240 and contact Departure. During the turn, we encountered moderate wake turbulence from a preceding Airbus. We reported the incident to ATC. The entire event lasted about 8 seconds. More spacing between aircraft on departure from CLT.

Synopsis

EMB-145 First Officer reported encountering wake turbulence departing CLT in trail of an Airbus. Reporter suggested increased spacing on departures.

Time / Day

Date : 202307

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : PHX.Airport

State Reference : AZ

Altitude.MSL.Single Value : 4000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : P50

Aircraft Operator : Air Carrier

Make Model Name : B767-300 and 300 ER

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Initial Climb

Flight Phase : Climb

Airspace.Class B : PHX

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : P50

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 : PHX

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 : 2017643

Analyst Callback : Completed

Events

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

Assessments

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

Narrative: 1

During the initial climbout on the FORPE 1 departure, while passing 4,000 feet MSL between waypoint OSGUE and ZIDOG, we briefly received a stick shaker after encountering wake turbulence shortly after retracting the flaps. We were climbing out at 230 kts. per the restriction at waypoint ZIDOG. The clean maneuvering speed was 220 kts. for our weight. After entering the wake turbulence, the aircraft began oscillating from left to right which quickly increased the "hook" to the speed we were flying. After the activation of the stick shaker, we quickly lowered the nose of the aircraft and accelerated to approximately 240 kts. No other issues for the remainder of the flight. Cause: Wake turbulence from preceding aircraft as well as waypoint speed restriction. Suggestions: Suggest coordinating to delete speed restriction or leaving flaps at 1 until passing waypoint ZIDOG.

Callback: 1

Reporter stated the waypoint speed restriction was a definite factor in the incident.

Synopsis

B767-300 First Officer reported experiencing a momentary stick shaker after a wake turbulence encounter departing PHX on the FORPE1 SID in trail of another jet transport. Reporter cited the design of the departure procedure as contributing.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : BFI.Tower

State Reference : WA

Relative Position.Distance.Nautical Miles : 3

Altitude.MSL.Single Value : 1300

Environment

Flight Conditions : VMC

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : BFI

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Flight Phase : Descent

Airspace.Class D : BFI

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : BFI

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class D : BFI

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 380

Experience.Flight Crew.Last 90 Days : 20

Experience.Flight Crew.Type : 380

ASRS Report Number.Accession Number : 2017106

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
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
Miss Distance.Horizontal : 2500
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

Headed into BFI on VFR arrival from the west from ZZZ planning for the Blake Island VFR arrival. Called Tower with current ATIS, and requested the Blake Arrival. Tower was busy with other traffic and instructed us to hold over the island and that Tower will call our inbound leg. We held for about 3-5 minutes, monitoring the frequency and scanning for traffic. After which Tower told us we can continue inbound on the Blake arrival and report 3 miles from field. Which we reported as we got closer. Tower then cleared us to make right base on 14L and cleared to land number 1 (crossing the centerline of the parallel 14R runway). At the same time another Cessna in the pattern for 14L proceeded to turn left base for 14L. I had sight of them at all times but became concerned as soon as they turn downwind to left base. As we continued to converge head on I quickly radioed Tower asking if we should perform a right 360 for spacing, but in the frenzy I forgot to say my tail number, which led the Tower to believe that the opposite traffic made the radio call. Tower then said yes to make the right 360 and asked if that was for the other Cessna and not us, I quickly piped up and told Tower the tail number of our plane and if we should make a right 360. Tower told us negative for right 360 and that we were cleared to land 14L. Tower then called up the traffic and told them to pass behind us and to maintain visual contact. While Tower was calling them up I quickly angled my nose to the runway to get in front of the traffic as they were on final. Narrowly passing in front of them that was too close for my comfort. However, this was not the end of the problems as Tower never advised us of a previous jet that had landed some minutes before our approach on the parallel runway. As we were about 150 ft. AGL we suddenly hit wake turbulence and entered into an uncommanded extreme left roll. I quickly added full power, being prepared to go around and full opposite roll to stop the effect. We then proceeded to land without any further incidents. It is of my opinion that the error started as a result of Tower clearing us too soon for the arrival, and that if Tower cleared us when they did, to let us go behind the left base traffic. However as Tower was extremely busy managing other traffic, the Controller could have been flustered because of it.

Synopsis

Cessna 172 pilot reported encountering wake turbulence on approach to BFI in trail of a preceding jet aircraft.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : CLT.TRACON

State Reference : NC

Altitude.MSL.Single Value : 7000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : CLT

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : CLT

Aircraft Operator : Air Carrier

Make Model Name : Heavy Transport

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Final Approach

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 : 2017027

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 : Procedure

Narrative: 1

At 7000 ft. level on approach into CLT. Aircraft suddenly jerked to the right more than 70 degrees of bank. The autopilot immediately failed and aircraft required immediate action recovery from an upset state. First Officer (FO) corrected aircraft back to safe level flight. We continued to CLT and landed safely without report of injuries. We were told by ATC a heavy aircraft was 5.4 miles ahead and 1700 ft. below us. Seems like severe wake turbulence.

Callback: 1

Reporter stated the encounter was quite severe.

Synopsis

Air carrier Captain reported recovering from an upset related to a wake turbulence encounter on approach to CLT in trail of a heavy jet.

Time / Day

Date : 202307

Place

Locale Reference.Airport : EGLL.Airport

State Reference : FO

Altitude.MSL.Single Value : 1500

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : EGLL

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : EGLL

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 : Final Approach

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 : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 8180

Experience.Flight Crew.Last 90 Days : 192

Experience.Flight Crew.Type : 1041

ASRS Report Number.Accession Number : 2016462

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

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

Assessments

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

Narrative: 1

On final approach with London, given instructions to keep 160 kt. until 4 DME. We were behind another heavy and experienced plus 15 / minus 15 in airspeed with some light turbulence at 1500 ft. 6 DME. I assumed wake turbulence and started to slow a bit and tried to go a bit above glideslope to mitigate. I did not communicate this with Tower because of the aviate, navigate, then communicate order of priority. Anyway we slowed a bit early and were given landing clearance at 500 ft. as the aircraft ahead of us barely had cleared the runway. So for me as our stable approach criteria has airspeed deviation limitations, I was concerned we would not be stable with our plus 15 minus 15 airspeed variations on final which the autothrottle was struggling to keep up with. In retrospect I should have told ATC I was slowing to mitigate wake turbulence and maintain a stable approach.

Synopsis

B777 Captain reported experiencing wake turbulence and deviating from assigned airspeed to mitigate the effects and maintain a stable approach without informing ATC of intentions.

Time / Day

Date : 202307

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.MSL.Single Value : 4000

Environment

Weather Elements / Visibility.Visibility : 10

Ceiling.Single Value : 6000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Taxi

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class B : ORD

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : C90

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Airspace.Class B : ORD

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 7500

Experience.Flight Crew.Last 90 Days : 134

Experience.Flight Crew.Type : 3500

ASRS Report Number.Accession Number : 2015852

Analyst Callback : Attempted

Events

Anomaly.Aircraft Equipment Problem : Less Severe
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.Aircraft : Aircraft Damaged

Assessments

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

Narrative: 1

Isolated severe turbulence / possible wake incident. While established on the RNAV 9L into O'Hare around ILIUM or TRYXI, we experienced a sharp bump that resulted in minimal pitch or roll, but was strong enough to fail the autopilot and cause minor damage to the lavatory tank as well as knocking everything not tied down into the aisle. The First Officer checked on the passenger briefly, and we continued after reporting it to ATC. As we were in a critical phase of flight we did not further address the issue until after shutdown. The passenger and flight crew were unharmed.

Synopsis

C550 Captain reported experiencing a sharp bump on approach that resulted in the autopilot failing and loose objects being knocked down. There were no injuries to the passenger and flight crew, but there was minor damage to the aircraft's lavatory tank.

Time / Day

Date : 202307

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : BOS.Airport

State Reference : MA

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : BOS

Aircraft Operator : Air Taxi

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

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Airspace.Class B : BOS

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : BOS

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Flight Phase : Initial Climb

Airspace.Class B : BOS

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2015581

Analyst Callback : Attempted

Events

Anomaly.Flight Deck / Cabin / Aircraft Event : Passenger Misconduct

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

I was departing Runway 9 at BOS. I was cleared for takeoff, right turn 140. I began to turn right, I encountered some wake turbulence from the preceding aircraft. The aircraft "burbled" a little and rolled right further. The passenger in the copilot seat grabbed the yoke with his right hand, and attempted to pull and put in left aileron. I maintained positive control of the aircraft, pushed their hand off, and told them "no." At a safe altitude I explained that it was just a wake turbulence encounter and there was no reason for them to panic. As they looked young and I understood their fear in turbulence I elected to continue the flight. However, this was extremely dangerous; these are the opposite control inputs for a stall/spin to the right on takeoff, and would have exacerbated that condition. In fact if they had pulled aggressively enough at low altitude and airspeed they could have caused a takeoff stall at an unrecoverable altitude and killed us. I believe the passenger was not trained in upset recovery; if they thought there was a loss of control inflight with a right roll, the correct input should have been lower the angle of attack and then re-orient the lift vector with the rudder. They were probably afraid of the ground rush. I did specifically write please put a small adult in the copilot seat on the passenger information list; although I believe this person was at least 16 - I could see their driver's license in their phone case - so I see why the Ramp Agent put them there. I do believe this passenger acted inappropriately, only 10 minutes before this event I had explained to them that they should not be touching the flight controls. I will not fly that passenger in the front seat ever again.

Synopsis

Small transport Captain reported encountering wake turbulence from the preceding aircraft upon takeoff. The passenger in the copilot seat then grabbed the yoke and attempted to perform dangerous maneuvers that would have worsened the condition. The Captain pushed the passenger's hands off the yoke and maintained positive control of the aircraft, and calmed the passenger.

Time / Day

Date : 202306
Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : MIA.TRACON
State Reference : FL

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : MIA
Aircraft Operator : Fractional
Make Model Name : Citation Latitude (C680A)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : MIA

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : MIA
Aircraft Operator : Air Carrier
Make Model Name : B747 Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Descent
Airspace.Class B : MIA

Person

Location Of Person.Aircraft : X
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 : 2013624
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 : Loss Of Aircraft Control
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control

Assessments

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

Narrative: 1

On arrival to MIA we were in the decent passing through 10,500 ft. at 250kts when we experienced severe wake turbulence. There was convective activity in the area and all traffic was getting radar vectors/deviations, however we were in the clear in a big hole of clear air. When we hit the wake we rolled rapidly to the right and hit a bank angle of approx 35-50 degrees, maybe more. We experienced the roll and significant vertical turbulence. It all lasted about 5 seconds and we rolled the wings level. The white "AP FAIL" CAS message was displayed and the autopilot would not reengage for the remainder of the flight. The pilot monitoring (PM) notified ATC that we hit wake turbulence and his reply was something to the effect of "yeah, you're following a 747." At no point during the descent were we following nor were we told that we were following a [Boeing] 747. We were on MIA approach frequency. We had told the passengers that due to the weather it may get bumpy so they were all secure and there were no reported injuries. We discussed the event with the passengers upon landing and they seemed to understand. The aircraft was written up for severe wake turbulence. If your going to put a heavy in front of any business jet, ATC needs to advise what is happening. We couldn't see the 747 nor could we tell by call sign (because they weren't using "heavy") that we were following a heavy let alone a 747.

Callback: 1

Reporter stated he was surprised at the strength of the wake, it was a very abrupt roll.

Synopsis

First Officer reported a "severe" wake turbulence encounter on descent into MIA in trail of a B747. Reporter stated they were not advised by ATC they were in trail of a heavy jet.

Time / Day

Date : 202306
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : SCT.TRACON
State Reference : CA

Aircraft : 1

Reference : X
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 Approach
Airspace.Class B : LAX

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : SCT
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 B : LAX

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Function.Flight Crew : Pilot 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 : 2013584
Analyst Callback : Attempted

Events

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

Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

We were on the IRNMN2 arrival for LAX prior to BAYST. We encountered moderate turbulence, then the aircraft banked 45 degrees to the left. The autopilot stayed engaged. I was preparing to disconnect the autopilot, but it began to roll us level, so I kept it engaged. We reported the wake turbulence to ATC. We checked with Inflight to ensure the safety of our crew and customers. We landed safely. I informed Dispatch and consulted with the Duty Chief about the encounter. A logbook write-up was made describing the encounter.

Synopsis

An air carrier Captain reported encountering wake turbulence on approach into LAX.

Time / Day

Date : 202306

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : IWA.Airport

State Reference : AZ

Relative Position.Angle.Radial : 125

Relative Position.Distance.Nautical Miles : 5

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : IWA

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 : Training

Flight Phase : Final Approach

Route In Use.Other

Airspace.Class D : IWA

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : IWA

Aircraft Operator : Military

Make Model Name : Large Transport, Low Wing, 3 Turbojet Eng

Airspace.Class D : IWA

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Instructor

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 654

Experience.Flight Crew.Last 90 Days : 120

Experience.Flight Crew.Type : 576

ASRS Report Number.Accession Number : 2011966
Analyst Callback : Completed

Events

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

Assessments

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

Narrative: 1

Student and Instructor conducting an IFR cross-country training flight to IWA on an IFR flight plan. Requested the RNAV 30R IWA and subsequently cleared for the approach from Phoenix Approach. During the procedure inbound from WOGMA to WUMIX at roughly 3000~ MSL, IWA Tower instructed Tanker "Heavy" to overfly us on the approach at 1000 ft. above. They then notified us that the tanker would be overflying and to be aware of its wake turbulence. The tanker overflew us by 1000~ ft. and was then cleared to descend, and that the Cessna behind was 1/2 mile back. They would begin their descent, and IWA Tower would notify us that he was descending and to be aware of wake turbulence. As quick as them saying that, our plane was thrown into a hard 60+ degree uncontrollable left turn followed by several uncontrollable seconds stuck in the wake of the tanker. The wake and the abruptness would knock our aircraft's G1000 AHRS system out momentarily until we were eventually able to level out and recover from the upset. The AHRS system would come back, and we would go on to land with no other issues and complete the flight.

Callback: 1

Reporter stated the encounter was quite severe and potentially dangerous.

Synopsis

C172 Instructor Pilot reported wake turbulence from a military tanker overflying their aircraft resulted in an upset.

Time / Day

Date : 202306

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : A80.TRACON

State Reference : GA

Relative Position.Angle.Radial : 090

Relative Position.Distance.Nautical Miles : 12

Altitude.MSL.Single Value : 3000

Environment

Flight Conditions : IMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 2500

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : A80

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 : ATL

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : A80

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 Approach

Airspace.Class B : ATL

Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 2011367
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 : 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 : 2011358

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
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 sequenced behind a heavy aircraft on final approach. We were instructed 170 KIAS until DEPOT. We held 170 until we saw the Airbus appeared at eight miles and slowing. We were warned of wake turbulence and started to experience wake from heavy. We slowed for safety reasons to give more separation. Due to ATC radio congestion, we could not tell Tower what was occurring. Tower asked us to speed up then instructed us to cancel approach and vectored us for a go-around. On Approach, I told them we did not appreciate being slammed in behind a heavy. Approach said we had 10 miles. I told Approach that we were experiencing wake turbulence and that we saw less than eight miles. Afterwards, normal approach and landing to Runway 28. Given the proper wake turn separation behind heavy aircraft. It's a safety issue. We were warned of wake turbulence and when we experienced we took proper action to safely handle aircraft.

Narrative: 2

As Pilot Flying, we were behind a heavy aircraft by approximately 10 miles that had requested to slow down. ATC assigned our speed to 210, followed by a further reduction to 170 until DEPOT. Established on the final for ILS PRM 27L, we were cleared for the approach and told caution for wake turbulence. We began to slow after feeling the wake turbulence. Tower had asked what our speed was and told 170 until DEPOT was needed. We were already slowed and configured and not able to fly the 170 knots. Tower canceled

our approach clearance and vectored us off final, handing us off to Approach Control. Flying the aircraft, I maintained control and flew the assigned heading/altitude and we returned for a landing on Runway 28. I felt we were cleared to reduce airspeed prior to DEPOT, as we were too close to the heavy aircraft wake, but Tower needed the airspeed until DEPOT. Better communication on both parts could have helped.

Synopsis

Air carrier flight crew reported slowing below ATC assigned speed following a wake turbulence encounter on approach to ATL.

Time / Day

Date : 202306

Local Time Of Day : 0601-1200

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 : 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 : ZOB

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZOB

Aircraft Operator : Air Carrier

Make Model Name : Heavy Transport

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

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 Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 20731

Experience.Flight Crew.Last 90 Days : 144

Experience.Flight Crew.Type : 5353

ASRS Report Number.Accession Number : 2011055

Analyst Callback : Attempted

Events

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

Assessments

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

Narrative: 1

Just past the JST VOR at Flight Level 340, our aircraft experienced an aircraft upset. The aircraft first experienced a little bit of turbulence for a second or two then rolled slight to the left. That small roll was immediately followed by an aggressive roll to the left exceeding 40 degrees. The "Bank Angle" audible warning also sounded. The First Officer quickly executed the Upset Recovery maneuver and the aircraft was returned to level flight losing only about 100 ft. The flight conditions were dusk, VMC on top, smooth air, winds 240 [degrees at] 35 [kts], flying at Mach 0.75, and the seatbelt sign was still on from some light chop that was experienced a few minutes prior to the event. Once the recovery was complete, I advised ATC of the upset, altitude loss and return to normal flight conditions. I also called the Flight Attendants and was advised of no passenger or crew injuries. One Flight Attendant was in the aisle, but was able to immediately sit in a passenger seat when the aircraft rolled. I talked with the entire crew at the end of the flight, as well as the next morning, to ensure there were not any delayed injuries or other concerns. After talking with the inflight crew and the First Officer after the upset, I queried ATC as to what we were following. They responded that we were following an Antonov 124 large cargo jet. I commented that we most likely experienced a wake turbulence event from that aircraft. They seemed surprised as we were 10 miles in trail on the same route and at the same altitude. After some anecdotal conversation about the size of the Antonov, ATC asked if we wanted additional spacing vertically and laterally the rest of the way in to PHL. We replied affirmatively and were issued a pilot's discretion descent and route offset on the initial portion of the arrival. PHL Approach later vectored the Antonov completely off the published arrival and issued them direct routing to the airport. Moral of the story, an aircraft upset and wake turbulence event can occur at anytime, anywhere, even if you are several miles behind and at the same altitude.

Synopsis

B737NG Captain reported encountering wake turbulence 10 miles in trail of an Antonov-124 aircraft at FL340 that resulted in an upset.

Time / Day

Date : 202306

Place

Locale Reference.ATC Facility : CZQX.ARTCC
State Reference : NF
Altitude.MSL.Single Value : 35700

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X
ATC / Advisory.Center : CZQX
Aircraft Operator : Air Carrier
Make Model Name : B767 Undifferentiated or Other Model
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Climb

Aircraft : 2

Reference : Y
ATC / Advisory.Center : CZQX
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Crew Size.Number Of Crew : 3
Operating Under FAR Part : Part 121
Flight Plan : IFR

Person

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.Total : 10941
Experience.Flight Crew.Last 90 Days : 159
Experience.Flight Crew.Type : 4685
ASRS Report Number.Accession Number : 2009958
Analyst Callback : Completed

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 : Ambiguous

Narrative: 1

While changing altitudes, within 300 feet of level off, a wake turbulence encounter occurred. The aircraft rolled no more than 30 degrees of bank during the event and lasted about 3-4 seconds. The autopilot remained engaged the entire time and then righted the aircraft back to level flight. The entire event lasted about 5-6 seconds. A call to the Flight Attendants was promptly made, and no injuries were reported. After about 45 minutes a crew member reported a possible lower back injury during the encounter while being in the aisle. The Captain then followed up with the Flight Attendant. After further conversation, the crew member reported no injuries and was able to perform their duties without issue.

Callback: 1

Reporter stated the preceding aircraft was a B777, they were in CZQX airspace, and the wake probably resulted from a wind shift.

Synopsis

B767 First Officer reported encountering wake turbulence from a preceding B777 aircraft at FL357 in Gander airspace that resulted in a minor injury to a flight attendant.

Time / Day

Date : 202306

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : ZAU.ARTCC

State Reference : IL

Altitude.MSL.Single Value : 37000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZAU

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

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZAU

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZAU

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Flight Plan : IFR

Airspace.Class A : ZAU

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 : 25000

Experience.Flight Crew.Last 90 Days : 149

Experience.Flight Crew.Type : 7324

ASRS Report Number.Accession Number : 2009474

Analyst Callback : Attempted

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 : Ambiguous

Narrative: 1

In clear air smooth conditions the aircraft encountered what felt like wake turbulence. This lasted a few seconds. I was in the forward lavatory and there it felt like light to very brief moderate turbulence. I was advised that flight attendants in the aft galley had been injured by a cart that fell over onto her legs. I went to the galley to check on her. She was clearly in pain with ice bags on her legs. She had no visible lacerations or bruising that I could see. She was able to walk. Dispatch notified. Medlink notified. Medical assistance requested to meet aircraft.

Synopsis

Air carrier Captain reported encountering possible wake turbulence in cruise flight that resulted in an injury to a flight attendant.

Time / Day

Date : 202306

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : HNL.Airport

State Reference : HI

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : HNL

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Initial Climb

Airspace.Class B : HNL

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : HNL

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 : Landing

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Check Pilot

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 2008917

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.General : None Reported / Taken

Assessments

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

Narrative: 1

I was acting as Check Airman in the right seat training a Captain new to the B-777. After holding short of Runway 08R, we were given clearance to takeoff on Runway 8R with a heading of 155 degrees after departure. In addition, we were asked to expedite due to traffic turning final for Runway 04R. Not wanting to rush my student I just repeated the cleared for takeoff clearance and completed the before takeoff checklist. Prior to moving the throttles forward, HNL Tower canceled our takeoff clearance while we were in position. After the B777 cleared overhead our runway centerline, we were once again cleared for takeoff. We took off on Runway 8R. On departure we flew through the wake turbulence of the prior aircraft which caused my student to initially think he might have had a tire blown. I mentioned it was wake turbulence and told him to continue. No further issues noted. Trying to time departures and arrivals for intersecting runways. Not enough time allowed to taxi a big wide body aircraft into position. Also, no allowing for the wake turbulence of the landing aircraft on the departing aircraft's takeoff roll. Allow more time for wide body aircraft.

Synopsis

B777 Captain reported encountering wake turbulence on initial climb out of HNL from another B777 landing on an intersecting runway.

Time / Day

Date : 202306

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZTL.ARTCC

State Reference : GA

Altitude.MSL.Single Value : 34000

Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Center : ZTL

Aircraft Operator : Air Carrier

Make Model Name : 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 : ZTL

Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZTL

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 : ZTL

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 : 2008216

Analyst Callback : Attempted

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2008887

Events

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
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 encountered wake turbulence at FL340 while direct JAARE, about 15 NM Northeast of JAARE. At the time, we were with Atlanta Center. I was Pilot Monitoring, and the First Officer was Pilot Flying. The previous Controller had assigned us 0.78M or less for spacing. We were in FMS speeds at 0.78M in smooth air. When we switched to Atlanta Center, on TCAS and visually, a 737 at 1,000 ft above directly crossed paths with us without any notification of traffic from ATC. Due to this, I had been focusing more on TCAS noticing another aircraft was approximately 25 NM ahead of us. A few minutes later, we encountered wake turbulence. I immediately told the FO (First Officer) to reduce to 0.76 and HDG right of course watching the bank rate. We were rocked three times and at one point, saw 20 degrees of bank before we were able to get out of the wake. As the FO was correcting to the right, I told the FA's (Flight Attendant) to take their jump seats on the PA and told ATC that we encountered wake turbulence. ATC directed us to sidestep 2 miles to the right and informed us that there was an A320 ahead at FL360 on the same route. Due the wake and the heading we were already on, I requested a heading instead of sidestep. ATC gave us present heading and asked what speed we were assigned. I responded 0.78M or less. Once we were clear, I called the Flight Attendants to ask if everyone in the back was okay, and they reported back that there were no issues. The seat belt sign had been on prior to and during the entirety of the event. I then explained to the passengers what had happened. The next Controller kept us on the heading for about 10 minutes, and then direct AEX. We had no further issues during the flight. I do not know the cause of the wake. It could have been a spacing issue due to being previously assigned 0.78M, less or the A320 ahead slowed, weather or task saturation of ATC, but if I were to see the situation happening again, I would slow earlier if possible and communicate with ATC to mitigate the risk of wake turbulence.

Narrative: 2

We encountered wake turbulence at FL340 while direct JAARE, about 15 NM Northeast of JAARE. At the time, we were on with Atlanta Center. I was Pilot Flying and the Captain was the PM (Pilot Monitoring). The previous Controller had assigned us 0.78M or less for

spacing. We were in FMS speeds at 0.78M in smooth air. We switched to Atlanta Center, on TCAS and with visual identification, we saw a 737 at 1,000 ft. above, fly directly over us. We received no prior ATC notification of a traffic alert. A few minutes later, we encountered wake turbulence. Immediately, the Captain said to reduce to 0.76 and to offset our current path to the right. We were rocked three times and at one point saw 20 degrees of bank before we were able to get out of the wake. As I was correcting our heading to the right, the Captain was talking to ATC about the wake turbulence we encountered and at the same time notifying the FA's (Flight Attendant) to take their seats. ATC directed us to sidestep 2 miles to the right and informed us that there was an A320 ahead at FL360 on the same route. Due the wake and the heading we were already on, the Captain requested a heading instead of sidestep. ATC gave us present heading and asked what speed we were assigned. The Captain responded 0.78M or less. Once we were clear, the Captain called the Flight Attendants to ask if everyone in the back was okay, and they reported back that there were no issues. The seat-belt sign had been on prior to and during the entirety of the event. The Captain then explained to the passengers what had happened while also communicating with Dispatch through the ACARS. The next Controller kept us on the heading for about 10 minutes, and then direct AEX. We had no further issues during the flight.

Synopsis

EMB-175 flight crew reported encountering wake turbulence at FL340 from a B737 that crossed their path 1000 ft. above them.

Time / Day

Date : 202306
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : EWR.Airport
State Reference : NY

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : N90
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 : EWR

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : N90
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : 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 : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2005591
Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types
Anomaly.Inflight Event / Encounter : Unstabilized Approach
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 : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

Narrative: 1

Newark Approach Control gave us vectors behind a 777. Separation was less than 6 miles. I executed a go around after encountering wake turbulence at 100 feet. We were on ILS 04R. Winds were 200 degrees 5 knots. After the go-around, we were asked too many times the reason for the go-around. It added unnecessary communication after we explained the reason during the initial contact after going-around. I needed to instruct the Controller to inquire on the ground.

Synopsis

A320 Captain reported executing a go-around at EWR after encountering wake turbulence on approach 6 miles in trail of a B777.

Time / Day

Date : 202305

Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : DFW.Airport

State Reference : TX

Altitude.MSL.Single Value : 6000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : D10

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 900 (CRJ900)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : DFW

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : D10

Aircraft Operator : Air Carrier

Make Model Name : A321

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 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 : 2004855

Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 2005147

Events

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

Assessments

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

Narrative: 1

While descending into DFW on the STAR we had been given a descent down to 6,000 ft. while on essentially the downwind. We had already been flying 210 kts on the arrival and were then slowed to 190 kts while at flaps 1. At some point we encountered a small amount of wake that lightly banked the aircraft to both sides, to which I momentarily accelerated and then returned to speed after passing through. I made a remark about hating wake turbulence and we continued descending. About 30 seconds later somewhere below 8,000 ft. we hit a much heavier section of wake. As we entered the turbulence, the aircraft began abruptly banking to one side and then the other. As I began advancing the thrust again, the wake worsened and the aircraft began a quick left rolling action to which I instinctively disconnected the autopilot and began pushing the nose down. The controls seemed washy and ineffective and for a moment I believed a stall imminent. It felt like the aircraft was rolling quickly although I believe I managed to arrest the bank before we exceeded 30 degrees. I began leveling off and called for the First Officer (FO) to turn on continuous ignition for the turbulence. About that moment ATC gave us a left turn instruction and I quickly uttered "unable" to the FO, as he gave a more proper response to them something along the lines of "unable, we're going through some strong wake turbulence and going straight ahead". At about this time the overspeed clacker began going off as I passed 230 kts. I ignored the clacker as I prioritized escaping the wake and climbing a few hundred feet; I think the clacker was going off for about 30 seconds although the speed never got above 240 kts. ATC told us simply to let them know when we could take a base turn. Once we were well clear of the wake, we recovered our speed and flight path, re-engaged the autopilot, and told ATC we could take the turn. I quickly made sure the flight attendants were okay (they were safely seated but anxious and concerned by the encounter) and we proceeded to intercept the approach to land. Once we parked, I conferred with Maintenance Control over the proper write up and I spoke with the chiefs to make sure I wasn't missing anything that needed to be immediately done before continuing my work day.

Callback: 1

Reporter stated he believed they were in trail of an A321, and it was the strongest wake encounter he has experienced in his career.

Narrative: 2

We were on downwind for [Runway] 17C with slat extended, hit by a pretty bad wake turbulence. Left wing dropped dramatically and airspeed dropped as well. Captain, who was Pilot Flying (PF), discontinued AP, added thrust and started a climb to 7,700 from 7,000 feet. We were able to escape from the wake. During the escape we were unable to follow ATC's instructions, however we told ATC we were encountering with wake turbulence and need to maintain a straight heading. Later was approved to do so without any violations. We successfully landed without any aircraft damage and nobody got injured either.

Synopsis

CRJ-900 flight crew reported encountering significant wake turbulence on arrival into DFW in trail of an A321.

Time / Day

Date : 202305
Local Time Of Day : 0001-0600

Place

Locale Reference.Airport : SDF.Airport
State Reference : KY
Altitude.AGL.Single Value : 80

Aircraft : 1

Reference : X
ATC / Advisory.Tower : 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
Mission : Cargo / Freight / Delivery
Flight Phase : Final Approach
Airspace.Class B : SDF

Aircraft : 2

Reference : Y
ATC / Advisory.Tower : SDF
Aircraft Operator : Air Carrier
Make Model Name : B777 Undifferentiated or Other Model
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Landing

Person : 1

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : Captain
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 23750
Experience.Flight Crew.Last 90 Days : 148
ASRS Report Number.Accession Number : 2003627
Human Factors : Training / Qualification
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 : First Officer
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Experience.Flight Crew.Total : 11000
Experience.Flight Crew.Last 90 Days : 25
ASRS Report Number.Accession Number : 2003621
Human Factors : Situational Awareness

Events

Anomaly.Ground Event / Encounter : Other / Unknown
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Automation : Aircraft Other Automation
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

Was on a visual approach for Runway 35L. We were backing the approach up with ILS guidance. Landing weight was approximately 757.0 lbs with a quartering right tail wind at approximately 7-8 kts. at 500 AGL. Our on path descent rate was at 1000-1100 FPM. We were following a 777 on the approach at 6.5 NM. The aircraft was on path and on speed when crossing the runway threshold. While crossing the threshold we encountered mild wake turbulence from the 777. At approximately 40 ft. AGL we got a sink rate call. We were in a normal position to land and felt the safest course of action was to land. I believe the hard landing was from an incomplete flare with First Officer's (FO's) attention being on keeping wing level in the wake turbulence. I also believe a contributing factor is the FO's consolidation has taken several months and as of the date of this event the FO still has approximately XX hours remaining. I think it is very important to get new Captains and First Officers their consolidation in the FAA allotted 120 days so they can have a bank of experience to draw from. Also when on a heavyweight approach more than just briefing descent rates also brief that the crew should look at the wind at 1000 & 500 AGL to determine if a tailwind component is occurring and take action early knowing that the margin that you thought you had will disappear rapidly with slightest deviation of pitch or wind and will create a sink rate call.

Narrative: 2

I was the pilot flying while landing on Runway 35L in SDF. We were heavy, it was night time, and we had about a 12 kt. tailwind. The approach was uneventful other than a high ground speed. We were following a 777 at about 6 miles. At about 80 ft. AGL, we encountered the proceeding 777s wake turbulence which caught me off guard, destabilized the landing, and resulted in a higher than normal sink rate. To prevent this, I could have slowed earlier to increase the spacing to avoid the wake or gone around.

Synopsis

Air carrier flight crew reported a hard landing occurred when the flying pilot encountered light wake turbulence from preceding B777 aircraft just before touchdown. The Captain cited the relative lack of First Officer experience as contributing.

Time / Day

Date : 202305

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : L30.TRACON

State Reference : NV

Altitude.MSL.Single Value : 11700

Environment

Light : Daylight

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

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

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 : 2002158

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.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 : Became Reoriented
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

Flight LAS to ZZZ departed Runway 26R on the JOHKR 3. ATC issued us a level off at 12,000 ft. then notified us of a possible altitude deviation at KRUGR. The aircraft was being flown in LNAV/VNAV on B Autopilot with FL190 in the altitude pre-select window. Upon issue of new clearance to level off at 12,000 ft., I reselected 12,000 ft. in the altitude pre-select window and disconnected the autothrottles to reduce the climb rate as we were passing 11,800 ft. The aircraft climbed to 12,150 ft. before leveling off at 12,000 ft. where I re-engaged the autothrottles. At this time we were told to look for traffic at 14,000 ft. which we had visually behind us. We never had an RA or TA. ATC then notified us of a possible altitude deviation at KRUGR. At this point we were approximately 24 miles past KRUGR on the JOHKR 3. We had briefed the departure and verified all altitudes and airspeed restrictions on the departure. Once established in cruise, the Captain and I debriefed the event trying to troubleshoot a possible error. One conclusion we arrived at was as we were approaching SELZ I had asked him to delete the N1 restriction and he interpreted this as delete the ALT restriction at SELZ since we were below the 8,000 ft. restriction. We didn't confirm the next waypoint as we got distracted with Climb Checklist and I believe a little wake turbulence from preceding aircraft. One thing would be to standardize the callout for deleting N1 reduction. I should have delayed the call for the Climb Checklist until work load permitted.

Synopsis

B737-700 First Officer reported climbing above an altitude restriction departing LAS, citing distractions from checklist and wake turbulence as contributing to the incident.

Time / Day

Date : 202305

Local Time Of Day : 0601-1200

Place

Locale Reference.Airport : LAS.Airport

State Reference : NV

Altitude.AGL.Single Value : 0

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

Airspace.Class B : LAS

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : B757 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Initial Climb

Airspace.Class B : LAS

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 150

Experience.Flight Crew.Type : 12572

ASRS Report Number.Accession Number : 2001065

Analyst Callback : Attempted

Events

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

Assessments

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

Narrative: 1

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

Synopsis

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

Time / Day

Date : 202305
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : C90.TRACON
State Reference : IL
Altitude.MSL.Single Value : 10000

Environment

Flight Conditions : VMC

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : C90
Aircraft Operator : Air Carrier
Make Model Name : B737 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Mission : Passenger
Flight Phase : Descent
Airspace.Class B : ORD

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : C90
Aircraft Operator : Air Carrier
Make Model Name : B737 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Descent
Airspace.Class B : ORD

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 : 18000
Experience.Flight Crew.Last 90 Days : 164
Experience.Flight Crew.Type : 361
ASRS Report Number.Accession Number : 2000500
Analyst Callback : Completed

Events

Anomaly.Deviation - Track / Heading : 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 : Ambiguous

Narrative: 1

Encountered wake turbulence multiple times during the arrival. First event just prior to CABIJ intersection. Autopilot reverted to CWS concurrent with route guidance disappearing. Pilot Flying (PF) disconnected auto flight, and by the time aircraft stabilized, we had passed the turn for the south runway transition. Once stabilized we immediately turned, and shortly thereafter ATC queried our position. Pilot Monitoring (PM) reported auto flight and wake turbulence issues. Reestablished on the arrival, several minutes later, we again experienced wake turbulence, and PF again disconnected auto flight, stabilized the aircraft, and re-engaged auto flight. Both incidents occurred 5 miles in trail of what was reported to be Aircraft X. Winds were calm. We reported both incidents and ATC eventually gave us slightly further in-trail spacing to alleviate the issue. We had a third, minor encounter. From the handling ATC gave us, I suspect they assumed we had the wrong transition programmed in the FMS, but that is not the case. We were correctly programmed for the proper arrival, transition, and runway, and simply unluckily encountered wake turbulence at the worst possible time. ATC advised us they would report the two incidents.

Callback: 1

Reporter stated that perhaps 5 miles is not enough spacing to avoid wake encounters.

Synopsis

Air carrier Captain reported encountering wake turbulence on arrival into ORD 5 miles in trail of another aircraft.

Time / Day

Date : 202305

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : ORD.Airport

State Reference : IL

Altitude.MSL.Single Value : 11000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Airspace.Class B : ORD

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Carrier

Make Model Name : B777 Undifferentiated or Other Model

Operating Under FAR Part : Part 121

Flight Plan : IFR

Flight Phase : Descent

Airspace.Class B : ORD

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 : 1999481

Analyst Callback : Completed

Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

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

Assessments

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

Narrative: 1

Encountered severe wake turbulence at 11,000 feet while on arrival in Chicago. While talking to Center, we encountered some light chop followed by a bank of about 45 degrees to the left. The Flight Attendant was seated at the time. We had plus or minus 100 foot altitude deviations in the recovery to wings level. We asked Center and they reported we were 10 miles in trail of Aircraft Y. We requested course deviation to exit the same path as our instrumentation was showing only 8 knots of wind at that altitude and we wanted to avoid another encounter. Although Approach and Tower warn us of wake and traffic, Center could also advise of traffic with significant wake that we are following as well at higher altitudes especially when winds aloft are low.

Callback: 1

Reporter stated he was surprised at the strength of the wake with 10 miles separation.

Synopsis

EMB-145 Captain reported encountering severe wake turbulence on arrival into ORD 10 miles in trail of a B777.

Time / Day

Date : 202305
Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : ZTL.ARTCC
State Reference : GA
Relative Position.Angle.Radial : 180
Relative Position.Distance.Nautical Miles : 1.4
Altitude.MSL.Single Value : 2400

Environment

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

Aircraft : 1

Reference : X
Aircraft Operator : Personal
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Training
Flight Phase : Climb

Aircraft : 2

Reference : Y
ATC / Advisory.UNICOM : GVL
Aircraft Operator : Fractional
Make Model Name : Small Transport, Low Wing, 2 Turbojet Eng
Operating Under FAR Part : Part 135
Flight Plan : IFR
Mission : Passenger
Flight Phase : Takeoff / Launch

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Personal
Function.Flight Crew : Instructor
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Commercial
Experience.Air Traffic Control.Supervisory : 4996
Experience.Flight Crew.Total : 1481

Experience.Flight Crew.Last 90 Days : 136
ASRS Report Number.Accession Number : 1997293
Human Factors : Situational Awareness
Analyst Callback : Attempted

Events

Anomaly.Conflict : Airborne Conflict
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Automation : Aircraft TA
Detector.Person : Flight Crew
Miss Distance.Horizontal : 2000
Miss Distance.Vertical : 100
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

Aircraft Y departed Runway 23 very shortly after Aircraft X, then turned inside of their downwind. Per the FAR/AIM the overtaking aircraft should overtake to the right. There was no reason for Aircraft Y to make a steep low altitude turn inside of a GA airplanes crosswind to downwind turn, that could be an accelerated stall issue, on top of the wake turbulence he caused for the Aircraft X who was doing flight training at the time. After talking to the instructor in Aircraft X, the student was startled and the instructor had to take control during the event. GVL needs a Tower, there are way too many people here treating it like it's the wild west and demonstrating poor ADM when it comes to random pattern entries and departures.

Synopsis

GA Flight Instructor reported encountering wake turbulence from a corporate jet after the jet cut inside him on departure from GVL.

Time / Day

Date : 202304

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : MDW.Airport

State Reference : IL

Altitude.AGL.Single Value : 400

Environment

Light : Night

Aircraft : 1

Reference : X

ATC / Advisory.Tower : MDW

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class C : MDW

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : MDW

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 C : MDW

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 : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 230

Experience.Flight Crew.Type : 14500

ASRS Report Number.Accession Number : 1996154

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC
Analyst Callback : Completed

Person : 2

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Qualification.Flight Crew : Air Transport Pilot (ATP)
Experience.Flight Crew.Last 90 Days : 130
Experience.Flight Crew.Type : 130
ASRS Report Number.Accession Number : 1996149
Human Factors : Workload
Human Factors : Situational Awareness
Human Factors : Communication Breakdown
Communication Breakdown.Party1 : Flight Crew
Communication Breakdown.Party2 : ATC

Events

Anomaly.Deviation - Track / Heading : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
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 Advisory / Alert

Assessments

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

Narrative: 1

Cleared for takeoff from Runway 4R. Tower cleared previous aircraft to take off approximately one minute prior to clearing us to take off. Shortly after takeoff, we experienced some wake turbulence from the aircraft in front of us. I elected to keep the wings level and delayed our turn until the wake turbulence dissipated. Initially, I started the turn using a bank angle of about 15 to 20 degrees in the event we encountered any additional wake turbulence. Departure asked us to tighten up the turn to heading of 230 degree. Departure cleared us to 4,000 ft. and asked us to expedite the climb. Departure then called out traffic, which I visually acquired off my left (about my 9 o'clock position). We received a TA (no RA) Alert while in the turn to a heading of 240 degrees. I had the traffic in sight and saw that the traffic was not a factor due to us climbing and increasing separation laterally. After switching frequency, we were told to call Chicago Approach when on the ground. After landing, I called Chicago Approach and they stated that we did

not complete our turn within the required four miles. I explained our situation to Chicago Approach and why we had delayed our turn. Perhaps ATC could provide a little more spacing/timing between takeoffs. I should have mentioned why our turn was delayed to Chicago Approach prior to switching to the next frequency.

Callback: 1

Reporter stated more spacing between takeoffs would be appreciated.

Narrative: 2

We were cleared for takeoff on Runway 4R in MDW in between an aircraft that had departed less than a minute prior and another aircraft on final approach. Spacing was sufficient to be legal, but the timing was tight, as is so often the case in MDW. Our clearance was left turn 250, maintain 3,000 ft. Shortly after rotating, probably 400 ft. or 500 ft. AGL, we experienced a "bump" and the tell-tale "wing-dip" of wake turbulence from the aircraft ahead of us. The Captain, who was Pilot Flying (PF), opted to stay wings level for a moment to stabilize the aircraft, then gently rolled into a slightly shallower than normal turn to our cleared heading to prevent an undesired aircraft state, should the wake turbulence worsen. During this time, Tower handed us off to Departure and I checked in with our altitude and heading clearances. Once it smoothed out and we had reasonable assurance it was safe to do so, the Captain began to tighten the turn from about 20 degrees to the standard 30. As he was doing that, ATC asked us to verify that we were on a 250 heading. I replied that we were still in the turn to 250, which we were. He asked us to tighten up the turn and continue it to 230 because we were getting close to "O'Hare's stuff". I replied with the new heading, saying we'd tighten it up, which had already done. Somewhere around then, we leveled at 3,000 ft., and ATC gave us a climb to 4,000 ft. As we were dialing that in, he called back and mentioned traffic to our left and asked us to expedite our climb and assigned us 13,000 ft. We did so, and did not receive an RA from the other aircraft. As we were climbing, he turned us slightly back to the right, heading 240, then eventually on course. No further mention of the event was made by that Controller and he handed us off to Center. Several minutes after checking in with the next Controller, he informed us of a possible Pilot Deviation and gave us a phone number. The rest of the flight proceeded uneventfully. This one's difficult, because closely spaced operations are common here, and I, myself, have departed MDW multiple times with no issues. ATC has no way of knowing what the weight/flap settings are of any aircraft that's taking off ahead of any other, and of course, we as Pilots have no way of knowing that either. I would suggest increasing space between aircraft, but I know that would have significant consequences in surface congestion, which may lead to unforeseen safety issues too. For myself, I will figure out some way to increase my awareness of where the 4 NM limit is from MDW. This too is tricky, because we had the 3.8 NM ring for the engine-out procedure depicted on the Navigational Display (ND), and as we were busy cleaning up the aircraft, climbing, responding to wake turbulence, turning, switching frequencies, communicating, leveling off, and looking for traffic, I honestly couldn't say that I ever even noticed that green ring on the ND moving past us. I think probably the most important thing that I should have done better, and will in the future, is to say something promptly to ATC, when we experience wake, especially when it affects our compliance with their clearance. Maybe if I had said something right away, they could have coordinated to allow us into ORD's airspace for a moment, and this whole thing would not have been an issue at all.

Synopsis

B737-700 flight crew reported a track deviation occurred on departure from MDW as a result of a wake turbulence encounter from the preceding aircraft.

Time / Day

Date : 202304

Local Time Of Day : 1201-1800

Place

Locale Reference.ATC Facility : P50.TRACON

State Reference : AZ

Altitude.MSL.Single Value : 4000

Aircraft : 1

Reference : X

ATC / Advisory.TRACON : P50

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 : Initial Approach

Airspace.Class B : PHX

Aircraft : 2

Reference : Y

ATC / Advisory.TRACON : P50

Aircraft Operator : Air Carrier

Make Model Name : Boeing Company Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : PHX

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 : 1995287

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 : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1995290

Events

Anomaly.Deviation - Speed : All Types
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy
Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Person : Flight Crew
When Detected : In-flight
Result.Flight Crew : Became Reoriented

Assessments

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

Narrative: 1

We descended on the Eagle 6 RNAV arrival for Runway 26. The winds were from 330 @17 gust 28. We were following Aircraft Y and assigned 170 speed till the marker. We captured the LOC and were descending to capture the G/S from above. Descending through 4,000 ft, we encountered moderate turbulence from Aircraft Y and the winds. Ground speed mini was high and increasing. The PF (Pilot Flying) attempted to change the altitude preselect to a higher altitude, to prevent the aircraft from capturing the preselected altitude of 3,000 ft. Then mistakenly pulled altitude preselect knob (open climb) while in turbulence. PF disconnected the AP. Auto thrust was disconnected and thrust levers adjusted to idle. The airspeed was over VFE by approximately 3 kt. for 3 seconds. The aircraft was stable, on slope and speed, by 500 AGL. Suggestion: Perhaps different angle of intercept to localizer.

Narrative: 2

[Report narrative contained no additional information.]

Synopsis

Airbus flight crew reported encountering wake turbulence on approach to PHX in trail of a Boeing commercial jet that contributed to flight stability issues and a momentary flap overspeed.

Time / Day

Date : 202304

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : LAS.Tower

State Reference : NV

Altitude.AGL.Single Value : 50

Environment

Light : Daylight

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAS

Aircraft Operator : Air Carrier

Make Model Name : Boeing Company Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : LAS

Aircraft : 2

Reference : Y

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

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 : 97

Experience.Flight Crew.Type : 7500

ASRS Report Number.Accession Number : 1994282

Analyst Callback : Attempted

Person : 2

Function.Flight Crew : First Officer
Function.Flight Crew : Pilot Not Flying
Experience.Flight Crew.Last 90 Days : 224
Experience.Flight Crew.Type : 2958
ASRS Report Number.Accession Number : 1994243

Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence
Anomaly.Inflight Event / Encounter : Unstabilized Approach
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter
Detector.Automation : Aircraft Other Automation
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

I was Captain and Pilot Flying on Aircraft X to LAS. We were following a Company aircraft on final to Runway 1R in LAS with approximately 3 miles separation. Company aircraft was following a business jet with approximately the same separation. As we descended using the RNAV approach, we began to experience light continuous chop, I assumed that it was a combination of wind, wake turbulence and heating off the ground. The approach was uneventful until the business jet missed [the] exit that was directed by Tower and rolled long, causing the rest of us to tighten up separation. The Company aircraft in front of us landed and cleared the runway as we approached 1500 ft or so. I had transitioned to visual and was using the PAPI as guidance, the aircraft was experiencing up drafts as well as gusts and perhaps wake turbulence. However, it was easily controlled with normal flight control inputs. Over the runway and inside of 100 ft there was the aural warning of "Don't Sink", everything appeared normal, and I continued. We didn't not go around nor did either one of us verbally verify the caution. The touchdown and roll out were normal and uneventful.

Narrative: 2

LAS changed runway on arrival due to gusty winds creating out of limit tailwind for previous runway. On final to Runway 1R, winds were gusty approximately 050 10 G 20. Approaching the runway, gusts and turbulence were pushing the aircraft above the PAPI glide slope. Captain (PF) was making corrections to resume glide path. Due to turbulence and the downward vector of the aircraft to resume glide path, the sink rate momentarily touched 1200 down and the GPWS "sink rate" caution sounded; this was approximately 100 ft AGL PF was already applying a correction. Neither Pilot called for a go-around (possibly due to startle factor) and the fact that a correction was already in progress. Aircraft touched down in the touchdown zone normally and turn off was made.

Synopsis

Air carrier Captain reported encountering gusty winds and wake turbulence from preceding aircraft on approach to LAS, resulting in a low altitude GPWS "Don't Sink" annunciation. Pilot continued to a normal landing.

Time / Day

Date : 202304

Local Time Of Day : 0601-1200

Place

Locale Reference.ATC Facility : LAX.Tower

State Reference : CA

Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAX

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : LAX

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : LAX

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 : Takeoff / Launch

Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1993943

Human Factors : Situational Awareness

Analyst Callback : Attempted

Events

Anomaly.ATC Issue : All Types

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Wake Vortex Encounter

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Executed Go Around / Missed Approach
Result.Flight Crew : Took Evasive Action
Result.Air Traffic Control : Issued Advisory / Alert
Result.Air Traffic Control : Issued New Clearance

Assessments

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

Narrative: 1

Approach Control was keeping us fast all the way in on the arrival and approach to Runway 25R, and then assigning 180 kts or greater until the final approach fix. It was a clear VFR day with Runway 25L closed. They switched us to Tower at the fix, and first thing Tower said was slow to approach speed. The A321 doesn't slow the best when going down the glide slope. I was using gear and speed brakes to slow, as Tower was clearing a 777 for takeoff on our runway. Tower asked if we couldn't go any slower as we were still trying to slow, and cleared us for landing. The 777 started takeoff roll about the time we passed 500 ft. In the flare we encountered nominal wake turbulence, but a lot of extra lift. Our aircraft climbed and would not descend. After passing 3,000 ft. down the runway I initiated a go around. As we were executing go around procedures the Tower Controller was asking us for information like why we were going around. I started maneuvering a little left of the runway center as we were getting wake turbulence from the 777. Then the heavy 777 start a left turn so I started sliding to the right. That got the Tower Controller excited (probably worried about departures off 24L) and Tower told us to turn left immediately to heading 190. I was not turning toward the Runway 24, but just getting outside the turn of the 777. Tower's directed turn to the south then took us back through the wake of the heavy 777. Controllers need to not focus on how we are messing up their traffic pattern or why we are rejecting a landing, and focus on how they can help us. We don't do rejected landings very often and it can be a handful especially when dealing with wake turbulence. I don't think Tower should have clear the heavy for takeoff when we were 4 miles out doing 180 kts. Maybe Tower didn't know we were so fast. Maybe coordination with Approach Control should be better. It seemed Approach Control was trying to create space behind us for a takeoff. Tower seemed intent on getting the heavy off in front of us. And there was no other aircraft in line for takeoff. Do not clear a heavy for takeoff on same runway where an aircraft is inside the final approach fix. Ensure Controllers understand the A321 does not slow down as easily as the other Airbuses. When a runway is closed at LAX and they are using same runway for takeoff and landings, it is more critical that Tower and Approach Controllers work together to coordinate the flow.

Synopsis

A321 Captain reported executing a go-around after encountering wake turbulence from a B777 on the takeoff roll on the same runway the A321 was close to landing on. During the go-around the A321 again encountered wake turbulence from the B777.

Time / Day

Date : 202304

Local Time Of Day : 1801-2400

Place

Locale Reference.Airport : PHL.Airport

State Reference : PA

Altitude.AGL.Single Value : 0

Aircraft : 1

Reference : X

ATC / Advisory.Tower : PHL

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 : Landing

Airspace.Class B : PHL

Aircraft : 2

Reference : Y

ATC / Advisory.Tower : PHL

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

Mission : Cargo / Freight / Delivery

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 : 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 : 1991965

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

Landing on [Runway] 35 with a heavy [jet] landing [Runway] 27L. During the flare at around 10 ft., we encountered wake turbulence, which caused a potential hard landing.

Synopsis

CRJ700 Captain reported a hard landing resulted after encountering wake turbulence from a heavy jet landing on a crossing runway.

Time / Day

Date : 202304
Local Time Of Day : 1801-2400

Place

Locale Reference.ATC Facility : MEM.TRACON
State Reference : TN
Altitude.MSL.Single Value : 5000

Aircraft : 1

Reference : X
ATC / Advisory.TRACON : MEM
Aircraft Operator : Fractional
Make Model Name : Citation Excel (C560XL)
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 91
Flight Plan : IFR
Mission : Ferry / Re-Positioning
Flight Phase : Descent
Airspace.Class B : MEM

Aircraft : 2

Reference : Y
ATC / Advisory.TRACON : MEM
Aircraft Operator : Air Carrier
Make Model Name : B757 Undifferentiated or Other Model
Crew Size.Number Of Crew : 2
Operating Under FAR Part : Part 121
Flight Plan : IFR
Flight Phase : Descent
Airspace.Class B : MEM

Person

Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Fractional
Function.Flight Crew : Captain
Function.Flight Crew : Pilot Flying
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Multiengine
ASRS Report Number.Accession Number : 1990781
Analyst Callback : Completed

Events

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

Result.Flight Crew : Requested ATC Assistance / Clarification
Result.Flight Crew : Regained Aircraft Control
Result.Air Traffic Control : Provided Assistance

Assessments

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

Narrative: 1

Approximately 30 miles north northeast of MEM, we encountered wake turbulence. We were at 5000 ft. and doing 250 kts. Clean configuration, flaps and gear were up. Plane rolled approximately 45 degrees to the left and pitched down approximately 10 degrees. Autopilot disconnected. Took approximately 5 seconds to regain aircraft control. This encounter happened very quickly and was violent. We advised ATC. We were told we were 10 miles behind a 757. TCAS confirmed this. Memphis Approach was shocked to hear we had encountered wake from an aircraft 10 miles ahead of us. We were given a phone number to call after we landed to discuss the event. It appears the 757 a few minutes earlier crossed our altitude around the same spot we encountered the wake. We had about 15 kts of wind from the east at 5000 ft.

Callback: 1

Reporter stated he was surprised at the intensity of the wake given the distance in trail.

Synopsis

CE-560XLS Captain reported encountering wake turbulence on descent into MEM 10 miles in trail of a B757 that resulted in a "violent" roll and pitch reaction.